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Hunter Transmission Project Amendment Report

Hunter Transmission Project

May 2026



Appendix D: Proposed mitigation measures

Table D.1 details the mitigation measures that will be implemented to avoid or minimise potential impacts from the project. These mitigation measures include updates to measures from the exhibited project as a result of amendments and refinements to the project as well as further design development and community and stakeholder consultation. Bold and strikethrough text indicates a change to the mitigation measures as included in the exhibited project. Some environmental impacts are relevant to multiple technical aspects and therefore will share common mitigation measures (e.g. Aboriginal heritage and visual amenity, or biodiversity and agriculture). Where this occurs, the mitigation measure has not been duplicated but rather one ID number has been provided for the particular measure and a cross reference to that ID number in other related environmental aspects.

Table D.1 Summary of mitigation and management measures

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
Biodiversity				
B1	Biodiversity impacts	A biodiversity management plan (BMP) will be prepared ~~and by a suitably qualified and experienced biodiversity expert in consultation with relevant government agencies including CPHR and will be~~ implemented for the duration of construction. The BMP will be framed around SMART objectives and include (as a minimum): • Description of site biodiversity values and the controls for direct, indirect, prescribed and uncertain impacts • the location and extent of areas of vegetation clearance and habitat disturbance, and how these will be suitably demarcated on-site • the procedure for issuing internal clearing commencement permits for each vegetation clearing stage, and for tracking and reporting clearing for each stage • the location and extent of areas to be protected (e.g. retained vegetation, hollow-bearing trees, nests,	Detailed design Construction	All locations

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		burrows and other habitat features, including applicable buffers to habitat features and connectivity corridors) located inside the construction impact area or in close proximity to clearing areas • constraints mapping (with coordinates) showing areas to be protected, including exclusion/no-go zones and protected habitat features adjoining work areas • measures for retained vegetation protection, including vegetation zones, vegetation strata, connectivity corridors, and/or specific species to be retained in disturbance areas B and HZ • pre-clearing survey procedures • including two-phase clearing process to allow fauna to move into adjoining habitat • measures to be implemented on site to clearly demarcate areas to be retained as 'no go areas' • a threatened species unexpected and incidental finds protocol • revegetation/rehabilitation plan (including seed collection where appropriate) • monitoring vegetation integrity of partial clearance (disturbance area B) • herbicide controls for areas of partial clearing and retained vegetation to ensure these areas are not impacted by herbicides • controlling erosion (unless separate ERS&D) • bushfire management		

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		• salvage of beneficial resources (vegetative and soil resources) • fauna handling and rescue procedure • supplementary hollow and nest strategy • education of construction teams • measures to avoid and minimise prescribed and indirect impacts • ~~adaptive management procedures (including triggers)~~ • monitoring, evaluation reporting and compliance. • ‘No go area’ demarcation devices must be established prior to the commencement of clearing works in each construction area and be maintained throughout the construction phase • biosecurity (weeds/ pathogens) and ongoing management of retained/partially cleared areas • a vehicle strike register, including records of all vehicle strikes (date, time, species, quantity and spatial location), adaptive management processes to address ongoing strike issues, and results included in annual monitoring reports • a program for implementing, evaluating and reporting on the effectiveness of the mitigation measures • quantitative performance measures (as appropriate), triggers, corrective actions and an adaptive management plan that consolidates and references the sub plans and BIMP (B23) listed in this table		

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		a progressive monitoring and reporting program to verify clearing and disturbance remain within approved limits, including audit-ready records and spatial tracking as per the BIMP (B23).		
B2	Avoidance of threatened species, threatened ecological communities and SAI entities	The locations of threatened ecological communities and habitat for threatened species and SAI entities will be considered, and potential impacts avoided or minimised to the greatest extent practicable during finalisation of the detailed design and construction methodology. This will include: - micro-siting of transmission line infrastructure within the HTP corridor - prioritising disturbance in areas with a Vegetation Integrity score <17 or <15 for EEC and CEECs as per <i>section 9</i> of the NSW Biodiversity Assessment Method (2020) - sensitive biodiversity areas to be avoided (including species polygons, buffered threatened species locations, areas of threatened ecological communities, relevant SAI entities and matters of national environmental significance). As part of this measure a hierarchy of biodiversity constraints will be developed and mapped to provide an overarching avoidance prioritisation framework to inform detailed design and the BMP. A spatial constraints mapping tool will be produced and referenced in the BMP, based on the avoidance framework (e.g CEEC's, SAI, MNES, sensitive), to guide avoidance and	Detailed design Construction	Identified sensitive biodiversity areas Avoidance micro-siting areas Regent honeyeater and Swift parrot important areas Applicable locations identified in Figure 14.21 of ~~Technical Report 1—Biodiversity development assessment report~~ Appendix E (Revised biodiversity development assessment report) of the Amendment Report

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		minimisation of impacts during detailed design and construction.		
B3	Avoidance of threatened species and threatened ecological communities	Prior to construction activities taking place within 100 metres of rocky areas containing caves, overhangs or crevices, cliffs or escarpments and during the breeding season for the Large-eared Pied Bat, Eastern Cave Bat (November to February), Large Bent-winged Bat, Little Bent-winged Bat (December to February) and Sooty Owl (June to August), an ecologist will be engaged to determine if the species are present. If present, an assessment of the proposed activities will be completed to determine what, if any, activities can take place within the 100 m, and what mitigation measures need to be implemented. Measures may include ~~cessation~~ scheduling of certain activities, amending the construction methodology including selecting alternative plant or equipment to minimise impacts. Any requirements for a management plan could also be determined at that time. Areas of relevant rocky habitat will be mapped in spatial layers, site plans and the BMP as sensitive areas.	Detailed design Construction	Within 100 m of rocky areas containing caves, or overhangs or crevices, cliffs or escarpments Applicable locations identified in Figure 14.3 of ~~Technical Report 1—Biodiversity development assessment report~~ Appendix E (Revised biodiversity development assessment report) of the Amendment Report
B4	Micro-siting of associated works and access tracks	Micro-siting of temporary construction infrastructure (including construction support sites, laydowns areas and access tracks), will be undertaken to minimise vegetation clearing and disturbance of watercourses within the biodiversity study area. This will include: • prioritising areas of low biodiversity value	Detailed design Construction	All locations

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		• utilising existing access tracks, where feasible • locating watercourse crossings at narrow width locations • avoiding or minimising impact to amphibian breeding habitats and rocky habitat features • minimising the quantity of cut and fill activities • no-go area demarcation (high-visibility temporary protection fencing (e.g. rope fencing) and signage) to be established prior to clearing in each construction area and maintained throughout construction • all areas containing threatened flora species assessed as retained will be delineated on site, included in relevant toolbox talks and/or other site plans • micro-siting outcomes will be incorporated into the BMP and its updates, project spatial layers and site-specific plans.		
B5	Connectivity corridors	A Connectivity Strategy to guide retention and augmentation of connectivity corridors will be developed and implemented to avoid and minimise impacts to connectivity for threatened species in consultation with CPHR. All potential corridors identified in the BDAR will be included in the strategy, with final locations to be agreed with CPHR as the detailed design progresses. ~~The exact location and detailed design of under-transmission line glider poles, retained tall tree stumps and/or rope bridges will be nominated as part of the~~	Detailed design Construction Operation	Relevant habitat connectivity locations (Figure 14.17 and 14.18 of Appendix E (Revised biodiversity development assessment report) of the Amendment Report)

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		~~connectivity strategy guided by the locations of habitat connectivity identified in Figure 14.17 and 14.18 of the biodiversity development assessment report.~~ Connectivity measures will ~~consider corridors, in the form of~~ include installation of under-transmission line glider poles (in accordance with clearance requirements for transmission lines and infrastructure) where the construction area will impact habitat connectivity for arboreal species (see Appendix J – Examination of regional and terrestrial habitat connectivity of the biodiversity development assessment report). ~~will be investigated and installed in appropriate locations. Key BC Act target species are Squirrel Glider, Yellow-bellied Glider and Greater Glider~~ The strategy will identify the number, type and location of corridors and/or structures required to maintain connectivity for target species. The Strategy will prioritise retained vegetation corridors and identify where structures are required for ‘new barrier’ locations guided by Appendix J and Figure 14.18. The strategy will include spacing targets, specifications for glider poles/rope bridges/retained stumps, and monitoring to evaluate effectiveness. Locations of bird diverters and other deterrents, and fauna connectivity features (including for grey-headed flying fox) will be integrated with the Connectivity Strategy where relevant, and mapped in the project spatial layers. The strategy will be developed for all relevant threatened species at each location within the disturbance area		

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		depending on the local habitats and recorded species and their connectivity requirements. This strategy will require ongoing management of connectivity corridors.		
B6	Compensatory habitat methodology	A supplementary hollow and nest strategy will be developed and implemented for the installation of nest boxes, or other hollow creation methods, to provide alternative roosting and/or nesting habitat for threatened fauna displaced during clearing. ~~Nest box/chainsaw type hollows will be installed prior to commencement of clearing works in each construction area where practicable.~~ The Strategy will define potential nest box type and ratio for numbers for replacement of habitat lost (final nest box type and number to be agreed during final design), and timing for installation. The strategy will address suitable dimensions of hollows by species, types, landholder negotiations and installation timing, including targets before clearing and timeframes after clearing. It will also address salvage and reuse of natural habitat materials (including bush rock), monitoring and maintenance requirements with audit-ready annual reporting and spatial data. A Trigger Action Response Plan will be provided to address delays or underperformance against installation or effectiveness targets. Where supplementary hollows are proposed to be established on land adjacent to the easement, these will	Detailed design Construction	Relevant locations

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		be subject to landowner agreement and captured in any property management plan.		
B7	Biosecurity impacts	A Biosecurity Management Plan will be prepared for the project in accordance with EIS mitigation measure AG3. This will be prepared in accordance with the document Saving Our Species Hygiene Guidelines – Protocols to cover biosecurity aspects such as weed and pathogen introduction (protect priority biodiversity areas in NSW from <i>Phytophthora cinnamomi</i>, myrtle rust) amphibian chytrid fungus and invasive plants (NSW DPIE 2020). At a minimum, controls will include wash-down facilities and procedures for vehicles, machinery and footwear at designated entry/exit points; access management zones where pathogens are detected to prevent spread, frog handling procedures, requirements for suppliers to certify imported soils/materials are clean and free of contaminants/ weeds/pathogens; pre-clearing weed mapping, treatment and recording; monitoring and control extending downstream of sediment controls. Operational management will be consistent with the Network Operator’s procedure. The plan will form a sub-plan to the BMP.	Detailed design Construction Operation	All locations
B8	Tree protection measures	Tree protection measures are to be installed and maintained for trees to be retained within the hazard zone at laydown areas, construction support sites and switching stations, in accordance with AS 4970-2009 – <i>Protection of Trees in Development Sites</i> throughout construction.	Construction	Applicable trees within the hazard tree zone (Disturbance area HZ) at discrete sites (laydown areas, construction support sites, switching stations etc.)

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
B9	Pre-clearing surveys	Pre-clearing surveys will be guided by the ~~biodiversity management plan~~ BMP and completed prior to clearing at each location by a suitability qualified ecologist. The proposed clearing extents will be marked out in accordance with the timings identified in the BMP on-site prior to the pre-clearing surveys. Pre-clearing surveys will be carried out prior to the commencement of clearing works. During the surveys, the ecologist will: • survey the entire proposed clearing extent (including confirmed clearing extents within the assumed habitat of SAI entities) • ~~identify any fauna that will require relocation prior to clearing, including inspection of any built structures and wooden fence posts to be demolished~~ • ~~confirm if occupied habitats need to remain until fledging/movement of young can occur~~ • ~~confirm that biodiversity exclusion zones are demarcated~~ • ~~confirm that hollow bearing trees within and adjacent to the clearing extents are prominently marked/tagged~~ • confirm that nest boxes are in place (where required) in suitable locations adjacent to areas to be cleared, or suitable locations for installation have been identified. • Management protocol (sub-plan to BMP) will be prepared and implemented	Detailed design Construction	All locations

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		- the fauna management protocol will document pre-clearing fauna survey requirements and management measures. Surveys will be conducted by a suitably qualified ecologist prior to clearing. Surveys will confirm that protection measures are in place and include fauna searches, hollow inspections, relocation and identification of nesting fauna and habitat features that require further management during clearing. Specific management measures will be documented for each fauna group with reference to known threatened species and will include predator monitoring/ control, rubbish controls, vehicle-strike controls, and monitoring of use of key habitat features such as caves/cliff lines within proximity of construction. Fauna relocation areas, compensatory habitat (e.g. nest boxes), and pre confirmed veterinary support and contacts will be identified. A Fauna Handling Protocol will be developed and included in the BMP and methods will be documented in clearing permits. A post clearing report will be prepared for each segmented clearing areas, for inclusion as part of annual monitoring, documenting all fauna interactions, any mortality and outcomes during clearing and quantities and locations of salvaged hollows and logs, supplementary nest box locations, and bush rock reused for habitat supplementation - trees supporting <i>Cymbidium canaliculatum</i> will be sectionally dismantled to enable relocation of orchids outside the development footprint, positioned with		

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		similar aspect as close as practicable to original location.		
B10	Ecology inductions, toolbox talks, targeted training	~~All~~ Prior to the commencement of works impacting biodiversity all relevant project personnel, including relevant subcontractors will be trained on biodiversity management protocols and requirements for the project, through inductions, toolbox talks and targeted training, and provided with sensitive biodiversity area maps (showing clearing boundaries and exclusion zones), clearing limits and ~~updates as required~~ key protocols . ~~Inductions and training will be completed prior to commencement of work for all relevant personnel.~~	Construction	All locations
B11	Retention of understorey vegetation in riparian areas	Understorey vegetation will be protected within vegetated riparian zones where reasonable and feasible (within the definition of the NSW <i>Water Management Act 2000</i>). Vegetation clearing will be limited to the tree stratum and shrubs above 2 metres in height only, with root systems and trunk bases being retained in-situ.	Construction Operation	Riparian environments disturbed ~~as part of~~ during construction
B12	Rehabilitation of riparian areas	A riparian vegetation management plan (RVMP) will be developed and implemented for the project. The RVMP will set out ground-truthed riparian zones / buffers, hand-clearing areas, crossing methods, sediment / erosion controls required by SW1 and SW3 interface, work sequencing and progressive rehabilitation requirements for riparian works. ~~Within to manage activities within vegetated riparian zones to minimise impacts to aquatic environments. The~~	Detailed design Construction	Riparian environments disturbed during construction

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		~~plan~~ clearing will be prepared prior to and implemented during any disturbance to a riparian area limited to the tree stratum and shrubs >2 m, retaining root systems and trunk bases in situ and using hand clearing for all partial clearing riparian zones. The ~~plan~~ Watercourse crossings will identify the measures to be designed implemented to minimise impacts from construction activities (such as erosion, sedimentation and vegetation removal and all temporary and permanent watercourse crossings) within riparian and aquatic environments crossings will be rehabilitated. A schedule of works will be stipulated within the approved RVMP. Riparian areas subject to disturbance will be progressively stabilised and rehabilitated. The RVMP will form a sub-plan to the BMP and the plan will be prepared prior to and implemented during any disturbance to a riparian area.		
B13	Installation of bird diverters	Bird diverters (flappers) will be installed on transmission lines at appropriate priority locations ~~to reduce impacts on aerial fauna species from collision with transmission lines and infrastructure. The exact position and diverter model will be finalised~~ identified during detailed design by a qualified ecologist in consultation with CPHR. Installation of the bird diverters will occur within 2 weeks of transmission line installation or as soon as practical and will remain in place and/or replaced as required. This will be species specific and include, at minimum, near riparian corridors, connectivity corridors and	Detailed design Construction Operation	Relevant locations

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		known threatened cockatoo owl/raptor records and key habitats, and considering increased density of 10–15 m spacings in high-risk spans. Installation will occur during line stringing or within 2 weeks of line installation and diverters will be maintained for the life of the project. Record and provide spatial data to CPHR identifying diverter locations within 6 months of installation.		
B14 (a)	Vegetation offsets requirements	The predicted clearing of native vegetation identified in the biodiversity development assessment report will be monitored against the recorded clearing. ~~A revised Biodiversity Assessment Method (BAM-C) calculation based on the project's final disturbance to biodiversity post construction will be completed. Any additional (or reduced) credit liability identified will be met as part of the biodiversity offset scheme requirements and secured under the SODA.~~ The approved clearing footprint will be clearly marked on site before works commence for each vegetation clearing stage, with partial clearing and full clearing areas separately delineated. Where partial clearing occurs, post-clearing verification monitoring and reporting will be undertaken in accordance with the requirements of the project approval conditions and B23. Audit ready records, including spatial data, BAM Plot information, land survey data and supporting recent imagery (where available), will be maintained to enable independent auditing and regulatory review.	Construction	Disturbance area

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
B14 (b)	Partial Clearing	Prepare and implement a Partial Clearing Protocol. The protocol will define clearing methods for Disturbance Areas B and HZ and non-disturbance areas, including: machinery limits; hand-clearing-only areas; measures to retain groundcover and shrubs to specified heights; appropriate tree waste management for mulch, woodchip and logs to ensure partial clearing objectives are met, protection measures and mapping for retained threatened species/habitat; and incident reporting requirements. The protocol will also require documentation of clearing equipment used. Monitoring and reporting requirements will include data collection requirements, documentation of mulch cover and depth, BAM plots suitable to derive vegetation integrity scores, and recommendations for changes to clearing methods where targets are not likely to be met. Tracked machinery will be avoided where possible in Disturbance Area B, and low-impact methods used to meet understorey retention objectives including retention of threatened plant species with growth forms of <2m in height. Removal of root balls and root stock will be avoided except where required for civil/construction footprints, with root zones retained in situ wherever practicable and hand clearing used in mapped sensitive areas, wherever practicable.	Detailed Design Construction	Disturbance Area B
B15	Unexpected finds	A species unexpected finds protocol will be implemented if threatened ecological communities or flora and fauna species, not assessed in the biodiversity assessment, are identified in the disturbance area.	Construction	Disturbance area

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		A species unexpected and incidental finds protocol will be included in the BMP and implemented if threatened ecological communities or species are observed outside of assessed species polygons (incidental) or were not considered as a candidate species (unexpected). The protocol will include a suspension of works in the vicinity of the find, assessment requirements to quantify extent of impact, notification to CPHR and Commonwealth DCCEEW where necessary and adaptive responses including investigation and implementation of impact avoidance and minimisation if practicable. Unavoidable impacts to unexpected and incidental finds must be quantified, and consultation undertaken with DPHI and CPHR on whether additional mitigation measures will be required. This may include offset calculation for residual impacts to threatened species that were not assessed in the BDAR and/or threatened species that were assessed but subsequently removed.		
B16	Water quality, watercourse geomorphology and aquatic habitat	Watercourse crossings (especially but not only to key fish habitat) will be designed to minimise disturbance and harm within riparian corridors and aquatic habitat will be rehabilitated where practicable, in accordance with the following guidelines: • <i>Guidelines for controlled activities on waterfront land</i> (NRA 2018) • <i>Why do fish need to cross the road? Fish passage requirements for waterway crossings</i> (Fairfull and Witheridge 2003)	Detailed design Construction	All locations

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		• <i>Policy and guidelines for fish habitat conservation and management</i> (DPI 2013).		
B17	Operational guidelines and procedures	Guidelines and procedures will be developed and implemented for maintenance of the project during operation as part of the network operator's environmental management system. These guidelines and procedures will cover the following: • vegetation clearing and maintenance commitments in the biodiversity development assessment report, environmental impact statement and Amendment Report • avoiding access and disturbance in areas of high biodiversity conservation significance; outside of the areas required for construction • avoiding maintenance of vegetation that does not need to be maintained during operation • measures specific to this project, as required. An Operational Biodiversity Management Plan (or similar) will be prepared to assist with the above operational biodiversity management requirements.	Operation	Operation impact area
B18	Minimise indirect impacts from light spill	Lighting designs to be in accordance with the <i>National Light Pollution Guidelines for Wildlife</i> (Commonwealth DCCEEW 2023) and will include: directional lighting to minimise spill; and directing temporary construction lighting away from remnant vegetation wherever possible.	Detailed design Construction (temporary lighting) Operation (any permanent lighting)	Operation impact area

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
B19	Minimise indirect impacts on threatened amphibians	Prior to impacts to threatened amphibian habitat, an amphibian management plan will be prepared for threatened amphibians and implemented for the duration of construction. ~~The plan is to include (as a minimum):~~ The Amphibian Management Plan will specify ground-verified habitat protection areas and buffers, chytrid hygiene controls, water quality protection and erosion/sediment controls interfaces, locations and design of supplementary ponds, connectivity measures, monitoring requirements and no-go demarcation prior to works in breeding habitat. The plan will incorporate the additional mitigation measures to address threatened frog populations including: connectivity and disease surveys, created supplementary habitat surveys, works to support biobanking as insurance against extinction and captive breeding/husbandry and scent-dog detection in partnership with the University of Newcastle. To further mitigate potential for SAI impacts of the project and assist in long term conservation planning, funding will be provided to DCCEEW Saving our Species (SoS) program for the provision of targeted conservation actions assisting species population recovery for selected threatened amphibian species in Olney State Forest. ~~the location and extent of areas of threatened amphibians breeding habitats, and how these will be suitably demarcated on-site~~ areas to be protected e.g. retained vegetation and other habitat features	Detailed design Construction	Identified threatened amphibian habitat within the disturbance area (Figure 14.15 Threatened Fauna – Amphibians of Appendix E (Revised biodiversity development assessment report)) Disturbance area

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		~~(including applicable buffers to habitat features) located inside the construction area or in close proximity to the clearing areas, including the retained UoN breeding ponds "S14P1" and "S14P2" within Disturbance area B~~ ~~the location and extent of areas to be protected (e.g. retained vegetation and other habitat features, (including applicable buffers to habitat features) located inside the construction area or in close proximity to the clearing areas~~ ~~measures to prevent control the spread of Chytrid Fungus to/from within the disturbance area and adjoining threatened amphibian habitat where accessible~~ The plan will form a sub-plan to the BMP and cross-reference the RVMP, ESCP and rehabilitation requirements: - location and design of proposed supplementary breeding ponds and/or connectivity measures within Disturbance area B and Olney switching station APZ ~~location and design of specific erosion and sediment control measures (ERSED) maintaining existing water quality and preventing sedimentation of potential breeding habitats during construction~~ ~~monitoring requirements to ensure effective control~~ ~~measures to be implemented on-site to clearly demarcate areas to be retained as 'no go areas'.~~		

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		'No go area' demarcation devices will be established prior to ~~impacts to the commencement of clearing works in the location and extent of~~ areas of threatened amphibians breeding habitats. ~~This plan will form a sub-plan to the BMP.~~		
B20	Minimise indirect impacts of Myrtle Rust on threatened plants	A Myrtle Rust procedure will be developed to ensure the project is consistent with the objectives of FCNSW and NPWS Myrtle Rust management.	Detailed design Construction	Disturbance area
B21	Minimise impacts to biodiversity as a result of vegetation clearing	Implement the clearing procedures, control measures and post- construction restoration measures to ensure biodiversity values are retained as assessed in the biodiversity development assessment report.	Detailed design Construction Operation	Disturbance area A (including centreline) Disturbance area B Disturbance area HZ
B22	Minimise impacts to biodiversity as a result of vehicle strike	Implement the following controls during the construction and operation phases within forested areas: • detailed design of access routes to avoid areas of key habitat • implementation of road signs identifying native fauna occurrence • implementation of speed limits • driver training for the project is to include training on local fauna and awareness when driving for the project through forested areas.	Detailed design Construction Operation	All forested locations
B23	Biodiversity impact monitoring and adaptive management	A biodiversity impact monitoring program (BIMP) will be prepared as part of the BMP and implemented for the project to consolidate the requirements for biodiversity	Detailed design Construction	All locations

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		impact monitoring, verify, guide and report on biodiversity impacts and mitigation effectiveness during construction and operation phases. The BIMP will include (as a minimum): • a structured monitoring program with annual reporting (during construction and for minimum 2 years post construction) and an adaptive management component with quantitative triggers and corrective actions (TARP). Where partial-clearing outcomes require verification, the verification monitoring and reporting requirements will be specified in the partial clearing protocol (B14b). Verification reporting will be prepared by an independent ecologist accredited under the BAM and should be suitable to support any required approval conditions and/or offset reconciliation processes. Consolidated monitoring outcomes of: – amphibian presence and water quality within amphibian breeding habitats – presence of Chytrid Fungus – pests, predator and weed monitoring – microbat occupation and construction noise and vibration activity at identified breeding caves within 100m of project disturbance – Brush-tailed Rock Wallaby occupation and use of identified important habitat features (caves/cliffs lines) within proximity of construction – bird collision and EMF monitoring framework and implementation	Operation	

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		– vehicle strike and native animal interactions throughout construction		
B24	Minimise public access to the project impact area to minimise activities such as firewood collection, vehicle access and illegal dumping	In consultation with landowners, the network operator will investigate options to restrict public access to sensitive biodiversity areas.	Construction Operation	Sensitive biodiversity areas
B25	Minimise indirect impacts on threatened terrestrial mammals	A terrestrial mammal sub-plan will be prepared and implemented for the duration of construction. The plan is to include (as a minimum): — species including Brush-tailed Rock Wallaby, Parma Wallaby and Long-nosed Potoroo — predator monitoring, control and management — preventative measures to reduce the effects of pest and weed species within identified habitat areas and during construction; including rubbish controls — controls for reduced vehicle strike within construction including information signs and speed control measures — monitoring program of species occupation and use of identified important habitat features (within 100m of caves/cliffs lines) — significant noise or vibration activities will be monitored and managed within 100 m of confirmed rocky breeding locations during breeding seasons	Detailed design Construction	Disturbance area

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		— prior to works within 100 m of rocky areas during relevant breeding seasons, engage an ecologist to confirm presence of threatened fauna, and determine activity constraints and mitigation (e.g. rescheduling, micro-siting, equipment selection) to minimise impacts. Areas of relevant rocky habitat will be mapped in spatial layers and site plans as sensitive areas.		
B26	Minimise indirect impacts on threatened Microbat breeding habitats	A Microbat sub-plan will be prepared and implemented for the duration of construction. The sub-plan include will define monitoring and controls for noise/vibration near known breeding caves and seasonal constraints including (as a minimum): — species including Large-eared Pied Bat, Eastern Cave Bat, Large Bent-winged Bat and Little Bent-winged Bat — requirements to confirm breeding locations prior to construction — monitoring of known breeding caves occur within 100m of project disturbance — monitoring of noise and vibration within 100m buffers of identified breeding caves — minimise construction activity during breeding seasons within 100m buffer of identified breeding caves — recommended exclusion measures for identified breeding caves where required.	Detailed design Construction	Disturbance area

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
Aboriginal heritage				
AH01	Impact avoidance and minimisation	All potential impacts to Aboriginal objects, sites and places will be continually reviewed as the project progresses. Any validated sites and/or cultural materials will be avoided or impacts minimised during construction planning, wherever practicable. This will include a detailed site-specific avoidance and options analysis for high and moderate significant Aboriginal objects, sites and places proposed for impact using methods outlined in Revised Appendix E (Post approval requirements – updated guiding principles). The findings of this review would be provided to the registered Aboriginal parties and Heritage NSW. Management of these sites would be integrated into AH02, AH03 and AH04, with approaches and methods in broad accordance with Appendix E (Post approval requirements – updated guiding principles (amended)).	Detailed design Construction	Aboriginal objects, sites and places of high and/or moderate significance as outlined in Appendix E.2.3 of Revised Appendix E (Post approval requirements – updated guiding principles).
~~AH03~~ AH02	~~Aboriginal objects of high significance~~ Impact avoidance and minimisation	Direct and indirect impacts to all highly significant identified Aboriginal objects, and sites and places and their immediate environment (at least 55 m) within the amended project impact area and in the vicinity within 55 metres of the amended project impact area will be avoided, including DEEP CK MOTHER SWA (#37-6-3714), Flat Rock Lookout (HTP-C-CP01), HTP-C-CVM08 (#45-3-5010), TRGG GRINDING GROOVE SITE (#45-3-2456), Monkey Place Creek/Broken Back Trail (#37-6-0552/#37-6-0809), CABANS RD CLIFF SWA (#45-3-4516), SWEETMANS CK OCHRE BOULDERS SWA (#37-6-3782),	Detailed design Construction Operation	• DEEP CK MOTHER SWA (rock shelter) • Flat Rock lookout HTP-C-CP01 (cultural place) • HTP-C-CVM08 (cultural place) • HTP-C-GG03 (grinding groove) • HTP-C-GG05 (grinding groove)

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		HTP-C-SA01 (#37-6-4538), HTP-C-SA02 (#37-6-4555), HTP-C-SA03 (#37-6-4537), HTP-C-SA04 (#37-6-4556), Corrobare State Forest, cnr of Langdans Road (#45-3-3619), HTP-C-GG01 (#37-6-4566), HTP-C-GG03 (#37-6-4484), HTP-C-GG04 (#37-6-4506), HTP-C-GG05 (#45-3-5006), HTP-S-GG01 (#45-3-5005), Null Road 2 (#45-3-3018), Olney CPT 75/76 Douglas Pt GDG (#45-3-4543), Pokolbin SF_C-345 AGG (#37-6-3967). Some guiding principles for avoidance of Aboriginal objects, sites and places are presented in <i>Revised Appendix E (Post approval requirements – updated guiding principles)</i>, including consideration of undocumented sites of high and moderate significance identified during residual assessment. Any site-specific avoidance measures developed to address this commitment would be integrated into mitigation measure AH04.		• TRGG GRINDING GROOVE SITE (grinding groove) • Monkey Place Creek/Broken Back Trail (grinding groove) • CABANS RD CLIFF SWA (rockshelter) • SWEETMANS CK OCHRE BOULDERS SWA (rockshelter) • HTP-C-SA01 (stone arrangement) • HTP-C-SA02 (stone arrangement) • HTP-C-SA03 (stone arrangement) • HTP-C-SA04 (stone arrangement) • Corrobare State Forest, cnr of Langdans Road (grinding groove) • HTP-C-GG01 (grinding groove) • HTP-C-GG04 (grinding groove) • HTP-S-GG01 (grinding groove)

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
				• Null Road 2 (grinding groove) • Olney CPT 75/76 Douglas Pt GDG (grinding groove) • Pokolbin SF_C-345 AGG (grinding groove) Identified significant sites outside the impact area referenced in Table G.2 of <i>Technical Report 2—Aboriginal cultural heritage assessment</i>
~~AH04~~ AH03	Impact avoidance and minimisation	The project will investigate the micro-siting of project infrastructure and ~~optimisation of~~ construction activities in consultation with an Aboriginal heritage specialist and registered Aboriginal parties (as outlined in revised Appendix E.2.1) of the ACHA addendum to avoid or minimise impacts to all identified Aboriginal objects, ~~and~~ sites and places within the project impact area. Some guiding principles for ~~consideration of~~ avoidance of Aboriginal objects, sites and ~~objects~~ places during construction of the project are outlined in Revised Appendix E (Post approval requirements – updated guiding principles). Any site-specific avoidance measures developed to address this commitment will be integrated into mitigation measure AH04. ~~include (but are not limited to):~~	Detailed design Construction	All identified Aboriginal objects, sites and ~~objects~~ places presented in Chapter 6 (The archaeological resource) of the ACHA addendum Table 10.1 of <i>Technical Report 2—Aboriginal cultural heritage assessment</i>

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		- incorporation of the sites, cultural deposits, curtilages, and obligations for their protection into cultural inductions for the construction workforce - establishment of fencing and/or signage during works in and around identified sites and cultural deposits, which will be implemented in consultation with an Aboriginal heritage specialist and/or RAPs - where necessary, establishment of surface protection such as heavy duty ground protection mats, or equivalent, which will be implemented in consultation with an Aboriginal heritage specialist and/or RAPs. Any site specific avoidance measures developed to address this commitment will be integrated into AH01.		
~~AH01~~ AH04	Cultural heritage management	~~An ACHMP~~ A construction Aboriginal cultural heritage management plan (ACHMP) will be developed by an Aboriginal heritage specialist, co-designed with registered Aboriginal parties (as outlined in <i>revised Appendix E.2.1</i> of the ACHA addendum), and in consultation with Forestry Corporation of NSW and NSW National Parks and Wildlife Service. ~~in consultation with the RAPs to~~ The construction ACHMP will provide the post-approval framework for managing and mitigating impacts to identified, potential and unexpected Aboriginal objects, sites and places during detailed design, construction and operation of the project. The construction ACHMP will integrate the protocols and processes outline in AH01, AH02 and AH03 and be developed following guiding	Detailed design Construction	All identified Aboriginal objects, sites and places within the amended project impact area as identified in Chapter 6 (The archaeological resource) of the ACHA addendum, and HTP-C-RS14 (#45-3-5013), HTP-C-RS02 (#37-6-4492), HTP-C-RS03 (#37-6-4679), HTP-C-RS15 (#37-6-4557), HTP-C-RS16 (#37-6-4558), HTP-C-RS17 (#37-6-4562), HTP-C-RS44 (#37-6-4554), HTP-C-RS45 (#37-6-4674), HTP-S-RS19 (#45-3-5008),

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		principles in <i>Revised Appendix E (Post approval requirements - updated guiding principles)</i> of the ACHA addendum, and will include direction on Aboriginal consultation, avoidance and impact minimisation processes, methods and mitigation measures for adversely affected cultural materials (including the wishing well [HTP-S-CS01], test excavation locations within the HTP corridor not assessed by the exhibited ACHA or ACHA addendum and predicted Warkworth Sands system deposits), unexpected find and ancestral remain protocols, and long term cultural material curation, analysis and reporting. archaeological mitigation and Aboriginal heritage within the project impact area. The ACHMP will consider guiding principles presented in the ACHA and will address the following: • processes, timing, communication methods and project involvement (e.g. on-site activities) for maintaining Aboriginal community consultation and participation through the remainder of the project. This will include a grievance mechanism that is readily available and designed for use by the local Aboriginal community • descriptions and methods to avoid any inadvertent impacts to identified Aboriginal objects and sites and areas of archaeological sensitivity outside of the construction impact area. A suitable regime of monitoring these activities will also be outlined, including locations, methods, personnel and timing		HTP-S-RS20 (#45-3-5004), Shamrock Hill (#38-4-0221), Watagan Creek ACD (#45-3-4623), Corrabare State Forest Road 2 (#45-3-3582), Corrabare State Forest Western Side of Langans Rd SWA (#45-3-3583), and Corrabare (#45-3-2140) Project impact area, and all identified Aboriginal objects, sites and deposits identified in the ACHA that will be adversely impacted by the project

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		• descriptions and methods of any additional investigative actions that may be required prior to construction works commencing or during the project for sites that are to be adversely impacted. Activities should include suitable archival recording and cultural material recovery (e.g. relocation of key components, surface collection and/or archaeological excavations). These should include opportunity for Aboriginal participants to recover and relocate culturally important flora species at HTP-C-AR01 and HTP-C-AR02. For these activities, details of locations, methods, personnel, and timing will be included • description and methods for undertaking further Aboriginal cultural heritage assessment, investigation and mitigation of any areas of the project that have changed following completion of the ACHA or during the final design and construction of the project • description and methods of post-excavation analysis and reporting of the archaeological investigations and activities implemented as part of the ACHMP. For excavations, these will include suitable collection and processing of stone artefacts, and chronological, soil, and environmental samples • reinforcement of how the cultural landscape is to be considered throughout the project's construction and detail the rehabilitation of the construction impact area. Assessment of rehabilitation of areas where infrastructure is not remaining after construction of the project will be undertaken to determine suitable		

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		ecological communities and other factors in returning the cultural landscape as close to its current state as feasible • procedures for managing the unexpected discovery of Aboriginal objects, sites and/or human ancestral remains during the project • procedures for the curation and long-term management of cultural materials recovered or relocated as part of the works outlined in the ACHMP and any preceding stages associated with the project • processes for reviewing, monitoring, and updating the ACHMP as the project progresses • procedures for the long-term management of cultural materials that remain within the operational impact area following construction activities • suitable knowledge transfer procedures for personnel changes between project planning and delivery to minimise loss or mistranslation of the intent of the information, findings and future steps for heritage management.		
AH05	Cultural heritage management	Prior to construction impact and with consent of relevant landowners, archaeological test excavations of investigation areas not completed during the exhibited ACHA or ACHA addendum and presented in Figure E.1 of the ACHA addendum will be carried out. in areas where ground disturbance to areas of high cultural significance would occur during construction on the remaining sites noted in section 9.3 of the ACHA. Test	Detailed design	Incomplete test pits outlined in Figure E.1 of Revised Appendix E (Post approval requirements – updated guiding principles) of the ACHA addendum Areas of high cultural significance, including areas

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		excavations will adopt approaches and methods outlined in Appendix C.2.1 of the ACHA addendum. The findings of the test excavations will be reported upon as per revised Appendix E.2.3 and incorporated into process and reporting requirements outlined in AH01, AH02, AH03 and/or AH04 based on the significance of the encountered cultural deposits. the ACHA.		~~predicted to contain~~ Warkworth Sand system deposits
~~AH02~~ AH06	Aboriginal objects outside the project impact area	Additional assessment will occur in accordance with approaches and investigative methods developed in mitigation measure AH04 ~~the Code of Practice for Archaeological Investigations of Aboriginal Objects in NSW (DECCW 2010)~~ for areas where ground disturbing activities are required in locations outside of the previously assessed area. Where required, additional ~~heritage surveys~~ on-Country investigations will be carried out with the ~~RAPs~~ registered Aboriginal parties (as outlined in revised Appendix E.2.1) prior to ground disturbing activities occurring in any such areas (including areas where only visual inspection has been previously undertaken). If no Aboriginal objects, sites and places are found or if Aboriginal objects, sites and places are found and they would not be adversely impacted, then a letter report will be prepared by an Aboriginal heritage specialist archaeologist that documents the findings and gives clearance to proceed. This would be provided to the registered Aboriginal parties for their information and records. Any identified Aboriginal objects, sites and places will be integrated and managed as required in	Detailed Design Construction Operation	Activities outside of the amended project impact area

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		AH01, AH02, AH03 and/or AH04 and associated guiding principles presented in Revised Appendix E (Post approval requirements – updated guiding principles) of the ACHA addendum.		
AH06 AH07	Cultural heritage management	A cultural values mitigation strategy will be developed in consultation with the Awabakal and Wonnarua Elders and key knowledge-holders who participated in the cultural values mapping study for the project. This will be undertaken to explore mitigations for the perceived social and cultural impacts to important viewlines and viewsapes between major promontories in HTP Central, and localised cultural landscapes at Trig Road, Flat Rock, Dora Creek and the Dora pinnacles. The strategy will include, but not be limited to: • implementation of Aboriginal-led cultural inductions throughout the project impact area • support for cultural monitoring of development activities through the Trig Road cultural landscape, Flat Rock cultural landscape, and within 200 m of the Dora pinnacles and Dora Creek. This will include approaches and methods for cultural monitors to be able to relay concerns to the project for consideration and subsequent management • undertaking traditional ecological knowledge investigations through Pokolbin State Forest and Corrabare North Flora Reserve • support for an Aboriginal-led research program to investigate cultural areas of interest and associated	Construction	Flat Rock cultural landscape, Trig Road cultural landscape, Dora Creek, Dora pinnacles, HTP-C-RS14 (#45-3-5-5013), Corrabare State Forest Road 2 (#45-3-3582), Corrabare State Forest Western Side of Langans Rd SWA (#45-3-3583), and Corrabare (#45-3-2140)

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		Aboriginal sites and places at Trig Road cultural landscape and Flat Rock cultural landscape. This will include but not be limited to: HTP-C-RS14 (#45-3-5-5013), Corrabare State Forest Road 2 (#45-3-3582), Corrabare State Forest Western Side of Langans Rd SWA (#45-3-3583), and Corrabare (#45-3-2140). Some guiding principles are provided in <i>Revised Appendix E (Post approval requirements – updated guiding principles)</i> of the ACHA addendum to provide further direction on the development of this strategy and potential methods for research activities that may adversely affect Aboriginal object, sites and places.		
~~AH07~~ AH08	Cultural heritage management	Where possible, the clearing of vegetation between significant cultural viewing locations and the project impact area will be minimised in discussion with Awabakal Traditional Owners. Where practicable, any intervening vegetation will be protected to reduce the potential for views of the project from Flat Rock lookout, including the view from the top of the rock as well as the setting and access track.	Detailed design Construction	Flat Rock Lookout (HTP-C-CP01 [#45-3-5504]) Other important cultural viewlines and viewsapes, including but not limited to SL5 and SL8
~~AH08~~ AH09	Cultural heritage management	Where practicable, project elements will be positioned to maximise the distance from and/or minimise their visibility within culturally important view-lines, notably SL5, in consultation with the Awabakal Traditional Owners.	Detailed design Construction	Important cultural viewlines and viewsapes, including but not limited to SL5
~~AH12~~ AH10	~~Operation~~ Cultural heritage management	Following construction of the project, all Aboriginal sites and objects unharmed and/or partially impacted will be subject to a site condition assessment (including mapping and recording in GIS systems) by a heritage specialist in	Construction Operation	Within the amended project impact area and within 55 metres of the amended project impact area, and all

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		consultation with the ~~RAPs~~ the registered Aboriginal parties (as outlined in revised Appendix E.2.1) of the ACHA addendum . The site condition assessment will identify management requirements for the future conservation and protection of all documented cultural materials in the context of future operation and maintenance of the operation impact area. This will include consideration of increased access to Aboriginal sites and places as a result of the establishment and maintenance of the transmission easement.		identified Aboriginal objects, sites and places identified in Chapter 6 (The archaeological resource) of the ACHA addendum that will be adversely impacted by the project Project impact area
~~AH09~~ AH11	Heritage interpretation	A heritage interpretation strategy will be developed by a an Aboriginal heritage specialist to identify the Aboriginal heritage values throughout the project impact area, and to provide direction for potential interpretive opportunities for the project or off-site (e.g. at Broke, Cessnock or Martinsville). This strategy will be undertaken in consultation with ~~made available for consultation and feedback with the Wonnarua, Awabakal and Darkinjung Traditional Owners~~ registered Aboriginal parties (as outlined in revised Appendix E.2.1 (List of key registered Aboriginal parties) of the ACHA addendum). Following consultation and feedback on the strategy, a heritage interpretation plan will refine the strategy with content (visual and textual) and design details in order to allow the implementation of the plan. Some guiding principles are provided in Revised Appendix E (Post approval requirements – updated guiding principles) of the ACHA addendum to provide	Detailed design Construction Operation	All locations

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		further direction on the development and content of this strategy. The interpretation strategy and interpretation plan will be co-designed and closely developed with local Wonnarua, Awabakal and Darkinjung Traditional Owners. This includes identification of initial aims and ideas, content and structure. Content should include, but not be limited to: - the ethnographic and historical record, which includes post contact and contemporary associations with the site and immediate environs - consultation and input from the Wonnarua, Awabakal and Darkinjung Traditional Owners - information obtained from the archaeological excavations and findings undertaken for the project.		
~~AH10~~ AH12	Consultation	The Aboriginal community consultation process for this project will continue throughout detailed design and construction.	Detailed design Construction	N/A
~~AH11~~ AH13	Consultation	A copy of the ACHA and all relevant Aboriginal heritage information management system (AHIMS) site recording forms and information for the project will be lodged with Heritage NSW and provided to each of the ~~RAPs~~ registered Aboriginal parties , as relevant.	Detailed design	N/A

Landscape character and visual

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
LV1	Landscape character and visual impacts	A landscape character visual impact management plan (LCVIMP) will be prepared as part of the project environmental management strategy. The LCVIMP would include mitigation measures to manage: • potential impacts on landscape character during the day during construction and operation • potential impacts on landscape character at night during construction and operation • potential impacts on views from the public domain during construction and operation where there is a moderate or higher potential visual impact • potential impacts on views from private dwellings, that are not associated with property that is hosting project infrastructure, and that have a predicted moderate or higher potential visual impact during construction and operation • details regarding the installation and maintenance of any proposed on-site mitigation measures such as vegetation for screening.	Detailed design Construction	All
~~LV1~~ LV2	Vegetation retention	Vegetation clearance for the project will be limited to the minimum extent necessary for construction and operation to maximise existing visual screening and retention of the existing landscape character. Retained vegetation will be clearly demarcated on site as 'no-go zones' prior to the commencement of construction in the area. Construction personnel will be made aware of no-go zones as part of environmental site induction(s).	Detailed design Construction Operation	All locations

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
~~LV2~~ LV3	Construction lighting	Lighting at construction support sites will be designed and operated in accordance with <i>AS 4282 2019 Control of the obtrusive effects of outdoor lighting</i> .	Detailed design Construction	Construction support sites
~~LV3~~ LV4	Visual changes near residences	For private properties assessed as having a moderate or higher visual impact (ID465, 466, 467, 2920 and 2928), screening options will be agreed with the landowners. Screening options may include vegetation that will be installed and established by a contractor. Any screening vegetation will be installed in accordance with ~~a plan and specification prepared~~ advice provided by a qualified Landscape Architect or designer.	Construction	Private dwellings assessed as having a moderate or higher visual impact
~~LV4~~ LV5	Visual changes near residences	Opportunities will be investigated to reduce the height of the transmission towers visible from those dwellings with a moderate visual impact in the vicinity of Cessnock Road, Broke.	Detailed design	Private dwellings assessed as having a moderate or higher visual impact near Cessnock Road, Broke.
LV6	Visual changes due to the temporary workers accommodation facility on Wollombi Road	The visual prominence of the temporary workers accommodation facility will be minimised, including: - Structures visible from surrounding areas (including buildings, fences storage containers etc.) will have a non-reflective and neutral grey finish (or similar) to reduce their prominence. - Signage will be limited to what is required for identification and safety purposes to avoid visual clutter. - Temporary screen planting and mounding will be investigated and implemented where appropriate, to obstruct views from the most	Construction	Wollombi temporary workers accommodation facility

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		affected residents. If appropriate, screening vegetation will incorporate fast growing natives. Where feasible and reasonable, the elements within construction sites would be located to minimise visual impacts, for example storage and machinery would be stored behind fencing or screened by the temporary worker accommodation buildings. Where suitable, site fencing to incorporate fabric screen-printed mesh banners to obstruct views from residents and road users. A pattern to create a camouflage effect or community artwork would be considered if appropriate e.g. along Wollombi Road.		
LV7	Visual impacts	All screening vegetation will be installed in accordance with advice provided by a qualified Landscape Architect or designer. The vegetation will comprise appropriate local plant species at a suitable density and layout to achieve screening over time. This vegetation will be established by the contractor and should be self-sustaining.	Detail design Construction	Moderately and highly impacted dwellings
LV8	Visual impacts	Visual mitigation would be implemented as soon as feasible and reasonable after the commencement of construction and remain for the duration of the construction period.	Detail design Construction	All locations identified in <i>Appendix G (Landscape character and visual impact assessment addendum)</i> of the Amendment Report

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
-	Cultural heritage management	The clearing of vegetation between significant cultural viewing locations will be managed in accordance with Aboriginal heritage mitigation measure AH08.	Detailed design Construction	Flat Rock Lookout (HTP-C-CP01 45-3-5003) Other important cultural viewlines and viewsapes, including but not limited to SL5 and SL8
-	Cultural heritage management	The positioning of project elements to minimise their visibility within culturally important view-lines will be managed in accordance with Aboriginal heritage mitigation measure AH08.	Detailed design Construction	Important cultural viewlines and viewsapes, including but not limited to SL5
Traffic and transport				
TT1	Construction traffic impacts	A traffic management plan (TMP) will be prepared as part of the project environmental management strategy. The TMP will be developed in consultation with the relevant road/rail authorities and will include as a minimum: • Confirmation of construction routes • Measures to maintain access to local roads and properties • Driver safety measures, including a driver code of conduct, requirements for in-vehicle monitoring systems, a driver fatigue management plan and the locations of rest areas along construction routes • Site specific traffic control measures (including signage) to manage and regulate traffic movement prepared in consultation with the relevant road authorities and implemented by licenced traffic management contractors • Measures to maintain pedestrian and cyclist access	Detailed design Construction	Construction routes, access tracks, construction support sites and temporary worker accommodation accesses

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		• Requirements and methods to consult and inform the local community of impacts on the local road network • Coordination with TfNSW and councils for road and intersection works and road crossings • Coordination with ARTC for rail line crossings • Requirements to obtain relevant approvals, including road occupancy licence(s), for any potential works in the road corridor and access by restricted access vehicles or OSOM vehicles required for the project. Where feasible, temporary road closures will be planned to occur outside of the traffic peak periods to minimise impacts to the road network • Access to construction sites including entry and exit locations and measures to prevent construction vehicles queueing on public roads • Maintenance and safety measures required along access tracks and at access points to construction support sites, including appropriate line marking and signage and wheel cleaning facilities as required • Monitoring systems and auditing processes for the implementation of traffic management controls, and mechanisms to review the effectiveness of monitoring systems, and the frequency of monitoring or auditing requirements • A response plan for any construction traffic incident, or complaints management process • Requirements for routine inspections of construction routes • Consideration of other developments that may be under construction to minimise cumulative impacts.		

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
TT2	Road and intersection upgrades	Upgrades will be carried out for roads and intersections ~~where turn warrant assessments have determined that works are required for construction vehicles to carry out safe turning movements.~~ Intersections will be upgraded in line with the required works outlined in ~~Chapter 4 (Project description)~~ Appendix A (Updated project description) of the Amendment Report. In addition, safety measures will be implemented as required at intersections assessed as being non-compliant with safe intersection sight distance criteria, including the provision of additional advance warning signs, temporary reductions in speed limits or clearing of vegetation in consultation with the relevant road authority. Safety measures will be implemented in line with the required works outlined in ~~Chapter 4 (Project description)~~ Appendix A (Updated project description) of the Amendment Report.	Construction	Intersections identified in Appendix A (Updated project description) Chapter 4 (Project description) as requiring upgrades for turn warrant treatment ~~or safe intersection sight distance~~ Roads identified in Appendix A (Updated project description)
TT3	Intersection performance impacts	Ongoing investigation will be carried out to determine appropriate measures at the New England Highway/Hebden Road intersection to minimise impacts of right turning construction traffic from Hebden Road onto the New England Highway in the AM and PM peaks. Measures to minimise intersection performance impacts as a result of construction traffic will be investigated in consultation with relevant stakeholders. To minimise intersection performance impacts as a result of construction traffic, the following restrictions	Detailed design Construction	New England Highway/Hebden Road intersection Specified intersections

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		will be imposed on construction vehicles during the specified times: • New England Highway / Hebden Road intersection (I-01a): No construction traffic during the HTP AM peak hour (6-7am) except for left out from Hebden Road and no construction traffic during the PM network peak (4.45-5.45pm) except for left out of and right into Hebden Road • New England Highway / Lemington Road intersection (I-02): No construction traffic before 7am and no construction traffic during the PM network peak (4.45 and 5.45pm) • New England Highway / Pikes Gully Road (I-02a): No construction traffic during the HTP AM Peak hour (6-7 am) except for left out from Pikes Gully Road, and no construction traffic during the PM network peak (4.45-5.45pm) except for left out from Pikes Gully Road • Golden Highway (Putty Road) / Broke Road intersection (I-09): No construction traffic before 7am • Putty Road / Mitchell Line of Road intersection (I-10): No construction traffic during the PM network peak (between 4-5pm) • Golden Highway / Range Road intersection (I-10b): No construction traffic before 7am and during the PM network peak (4-5pm).		

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		Compliance with the above restrictions will be monitored and audited in accordance with the TMP and mitigation measure TT19. In addition to these restrictions, variable message signs to communicate possible delays will be installed at the Golden Highway / Range Road intersection (I-10b), and at any other location agreed with Transport for NSW. Putty Road / New site access (I-52) will not proceed.		
TT4	Intersection performance impacts	Ongoing investigation will be carried out to determine appropriate measures at the Golden Highway/Range Road intersection to minimise the impacts of through and right turning movements in the AM peak. Measures to minimise intersection performance impacts as a result of construction traffic will be investigated in consultation with relevant stakeholders.	Detailed design Construction	Golden Highway/Range Road intersection
TT4	Construction traffic impacts	Where practicable to do so, shuttle buses will be used to transport construction workers to and from work sites and temporary worker accommodation facilities.	Detailed design	Temporary worker accommodation at Hebden Road, Freemans Drive and Wollombi Road construction support sites
TT5	Road safety – design related	All accesses will be designed to accommodate the required construction vehicle(s) in line with the TTIA and in accordance with relevant Austroads guidelines (where applicable).	Detailed design	Construction routes, access tracks, construction support sites and temporary worker accommodation accesses
TT6	Road condition	Pre-construction road dilapidation surveys and routine inspections will be completed along all nominated construction routes on local roads. Where rectification	Detailed design Construction	Local roads

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		works are required due to project impacts, consultation with the appropriate road authority will be undertaken to confirm the scope of the work required.		
TT7	Access to properties	Access to properties will be maintained throughout construction where feasible. Where that is not feasible, temporary alternative access arrangements will be provided following consultation with affected landowners and in accordance with the requirements of the construction communication and engagement plan, or in accordance with the property access sub plan to the TMP as provided in mitigation measure TT14. Except as provided in mitigation measure TT14, disruptions to property access and traffic will be notified to landowners at least 5 business days prior and in accordance with the relevant community consultation processes outlined in the environmental management system (EMS).	Construction	Construction impact area
TT8	Pedestrian and cyclist access	Ongoing consultation will be carried out with local bicycle groups where available and with Forestry Corporation NSW for walking and biking trails in State forests. Safe pedestrian and cyclist access will be maintained where the project interacts with existing pedestrian or bicycle facilities on public roads. Where this is not feasible, temporary alternative access arrangements will be provided following consultation with affected stakeholders and the relevant roads authority.	Construction	Construction impact area

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
TT9	OSOM vehicle access	Ongoing consultation will be undertaken with Transport for NSW regarding the use of State roads for OSOM vehicle routes and during the preparation of the Transport Management Plans to confirm: • the final schedule of the temporary relocation to any roadside infrastructure or vegetation trimming, with reference to Table 5-58 of Technical report 4 – Revised traffic and transport impact assessment • medians that may be mounted by OSOM vehicles and the structural capacity and condition of any identified medians to accommodate these movements • the required timing for the reinstatement of roadside furniture or corrective action required for medians impacted by the OSOM movement. and a Appropriate permits will be obtained from the National Heavy Vehicle Regulator for OSOM movements.	Detailed design ~~Construction~~ Prior to OSOM movements	OSOM routes
TT10	Cumulative impact with Hunter Valley Operations (HVO) Continuation Projects	~~Further analysis and~~ Coordination with HVO will be undertaken during detailed design and construction planning regarding works required in the vicinity of ~~Lemington Road~~ and any associated staging/timing to minimise adverse performance and road safety impact on the road network along on Lemington Road and at its intersections with the New England Highway and Golden Highway.	Detailed design Construction	~~Lemington Road and The~~ surrounding roads near HVO in the northern section of the amended project impact area
TT11	Access interfaces with operations at HVO and Bulga mining complex	A project co-ordination group will be established with Glencore, EnergyCo, the network operator and the design and construct contractors to manage critical	Detailed design	HVO and Bulga mining complex

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		interfaces between construction and mine operations, such as construction access and shared use of haulage roads.		
TT12 ~~TT11~~	Cumulative impact of the Mandalong Road upgrade works by Transport for NSW	Further analysis and Coordination with Transport for NSW will be undertaken during detailed design and construction planning on the proposed construction activities requiring access on Mandalong Road and associated staging/timing to minimise adverse performance and road safety impacts at the Mandalong Road/Freemans Drive/Wyee Road intersection. ~~Alternative routes will be used should use of this intersection not be possible.~~	Detailed design Construction	Mandalong Road and surrounding areas in the southern portion of the project impact area
TT13	Interface with Lake Macquarie City Council's upgrade of the Martinsville Road / Freemans Drive intersection	The HTP intersection upgrade to Martinsville Road / Freemans Drive intersection will be delivered in coordination with Lake Macquarie City Council to ensure HTP intersection upgrade works do not preclude the ultimate delivery of Lake Macquarie City Council's planned safety improvements at this intersection. Post the completion of the main construction works, this intersection will be reconfigured to an arrangement that is consistent with planned shared user path facility on Freemans Drive, delivered by Lake Macquarie City Council.	Detailed design Construction	Martinsville Road / Freemans Drive intersection
TT14	Property access impacts	A property access sub plan to the TMP will be prepared for Pokolbin Mountains Road, parts of Mount View Road and Mount Baker Road, to manage property access impacts during construction. This sub plan will outline	Detailed design Construction	Properties located along Pokolbin Mountains Road, parts of Mount View Road and Mount Baker Road

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		measures to maintain property access (unless otherwise agreed with property owner(s)) and road user safety along these roads during road upgrade works (where identified) and general use by construction vehicles. The sub plan will include but not be limited to, unless otherwise agreed with property owners: • A temporary reduction in the posted speed limit and installation of additional signage as needed • Details on how access to properties is maintained during construction, including a maximum wait time under temporary traffic arrangements as per Transport for NSW 'Traffic control at work sites Technical Manual' (the maximum wait time will be 10-15 minutes) • Minimum notification periods for any road works or disruptions, and a direct communication system (SMS/email) for registered residents and businesses • Provision of a 24/7 contact number for access issues and emergencies • Restriction of construction traffic movements to weekdays and standard working hours, except in consultation with property owners to accommodate construction vehicle movements outside standard working hours • Commitment to avoid morning and/or afternoon peak periods in consultation with property owners (e.g. school peak times of 8:30-9:30am and 2:30-3:30pm) • Locations for passing bays and temporary traffic management • Details of any ongoing works required to maintain a suitable level of usability of the road		

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		during construction (e.g. drainage at upgrade locations and clearing any impediments to road drainage along Pokolbin Mountains Road, where practicable). Compliance with the implemented traffic management controls will be monitored and audited in accordance with the TMP.		
TT15	Coordination of stringing activities over the Golden Highway	The methodology and program of stringing activities over the Golden Highway for HTP will be coordinated with TfNSW and Ausgrid with consideration of the Hunter-Central Coast REZ transmission project works, scheduled OSOM movements that pass this location and other scheduled road works along the Golden Highway.	Detailed design Construction	Golden Highway (Putty Road)
TT16	Safe Sight Distance Assessments	Safety measures will be implemented as required at intersections assessed as being non-compliant with safe intersection sight distance criteria (based on vertical and horizontal sight lines), including the provision of additional advance warning signs, temporary reductions in speed limits (except on State roads) or clearing of vegetation. This includes (but is not limited to): • Golden Highway / Lemington Road (I-03) – vegetation trimming • Golden Highway / Gouldsville Road (I-07) – vegetation trimming and advisory signage • Golden Highway / Mitchell Line of Road (I-10) – vegetation trimming and relocation of signage	Detailed design Construction	Intersections identified in Appendix B to Technical report 4 – Revised traffic and transport impact assessment, and as revised by Supplementary information in support of Technical report 4 – Revised traffic and transport impact assessment

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		• Golden Highway / Range Road (I-10b) – vegetation trimming • Putty Road / Existing access (I-31) – restriction for left in / left out. The required controls will be validated based on site inspections and detailed survey and determined in consultation with the relevant road authority. Monitoring at I-31 will be subject to the requirements of TT19.		
TT17	Wine Country Drive / Broke Road intersection	At Wine Country Drive / Broke Road intersection (I-14), no more than 10 heavy vehicle movements can occur at this intersection during the PM network peak (3.15-4.15pm). Light vehicles will use the alternative route (being Mount View Road, Oakey Creek Road, McDonalds Road) during PM network hour. Compliance with the restrictions will be monitored and audited in accordance with the TMP and mitigation measure TT19. In addition, variable message signs to communicate the increase in traffic and possible delays will be installed at the intersection.	Construction	Wine Country Drive / Broke Road intersection
TT18	Freemans Drive/Martinsville Road	At Freemans Drive / Martinsville Road intersection (I-23), no more than 15 heavy vehicle and 40 light vehicle movements associated with construction can occur at	Construction	Freemans Drive / Martinsville Road intersection

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		the intersection during the AM network peak (8.15-9.15am). Compliance with the restrictions will be monitored and audited in accordance with the TMP and mitigation measure TT19.		
TT19	Compliance monitoring, auditing and reporting	Cameras with number plate recognition and GPS trackers within construction vehicles will be used to monitor compliance with the restrictions set by mitigation measure TT3, TT16, TT17 and TT18. Cameras will be installed and the Driver Code of Conduct prepared prior to the commencement of construction vehicles using the intersections identified in mitigation measure TT3, TT16, TT17 and TT18. The Driver Code of Conduct will include: • requirement for GPS trackers within construction vehicles • expectations on vehicle movements and restrictions at nominated intersections, supported by maps and clear identification of the applicable time of day in which the restrictions apply • requirements to arrive or depart work areas or compounds by certain times to comply with the restrictions • requirements for drivers to understand what monitoring would be implemented (both in-vehicle and at intersections) and communication protocols • clear outline of the escalating warning system and imposition of sanctions in the event of a non-	Detailed design Construction	Identified intersections

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		compliance. Sanctions would reflect any continued behaviour by an individual • requirement to acknowledge these controls and warning system within the driver induction process, and acknowledgement of any corrective actions communicated by notice to all relevant personnel. Forward scheduling of construction vehicle movements for arrivals and departures will also occur to manage movements at the identified intersections in line with the restrictions. The results of vehicle monitoring will be reviewed daily for compliance, with any corrective action identified and implemented. Monitoring results will reported monthly, with documentation of the action taken in response to a non-compliance. Any non-compliance and corrective action will be communicated to the construction workforce and may include in-person spot audits and changes in forward scheduling.		
TT20	Traffic management during pre-construction minor works	During pre-construction minor works drivers will provide sufficient advanced warning to potential vehicles exiting the relevant access (I-31 and I-69) via UHF radio communication and co-ordination/scheduling with landowners. In addition for I-31, during pre-construction minor works vehicles will be restricted to left-in/left-out movements only and advance warning signage (e.g. VMS) installed to warn motorists travelling on the eastbound approach on Putty Rd of potential for	Pre-construction minor works	Relevant State roads

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		vehicles turning in/out of the driveway with limited line of sight. In addition to the above, the following measures will be implemented: • restrictions identified in TT3 will apply to vehicles associated with pre-construction minor work. • a vehicle log will be kept throughout pre-construction minor works which will be available on request to the Environmental Representative • all vehicles to be used during pre-construction minor works would be no larger than a General Access Vehicle (consistent with the meaning used by the National Heavy Vehicle Regulator) • workers will be briefed on the above requirements as part of Toolbox talks with records kept and made available on request to the Environmental Representative.		
Land use and property				
LP1	Direct land use impacts	The design will continue to be refined to minimise potential impacts on existing land use and properties as far as practicable.	Detailed design	All locations
LP2	Property impacts	Property management plans will be developed for directly impacted properties, including mining land leased for agriculture , in consultation with the landowner. The property management plans will outline the protocols that will be implemented to address landowner concerns during construction. This will include:	Detailed design Construction	All locations

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		• the process for rectification of any damage to property infrastructure caused by construction • the process for rehabilitation and stabilisation of disturbed areas following completion of construction • details of any access tracks or other infrastructure provided for temporary construction activities that are to be retained and not restored to the pre-existing condition (where requested by the landowner prior to the completion of construction) • pre-condition assessments to determine the existing condition of assets, infrastructure, utilities that are considered to be impacted by construction activity • measures to minimise disruption to agricultural or other practices during construction, including identification of: – existing grazing and cropping activities and farm infrastructure arrangements (e.g. Fences, access tracks) within the project impact area – any required adjustments to existing agricultural activities during construction, including adjustments to fencing or access tracks or adjustments to grazing or cropping activities as a result of the location of permanent infrastructure within agricultural land. This will be informed by ongoing consultation with landowners. – noise intensive activities during construction that would overlap with sensitive periods of the		

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		livestock production cycle (e.g. Lambing or calving) – vehicle movements and other construction activities in the vicinity of livestock – the need for the movement of livestock away from potential stressors created during construction activities • any fencing and gate requirements • specific biosecurity controls • contact details for the person who will liaise with landowners to provide direct avenues of enquiry for information and issues management.		
LP3	Impacts to utilities and services	The location of all services and utilities within the construction impact area will be confirmed during detailed design, and any required protection or relocation works will be designed in consultation with utility providers and landowners.	Detailed design Construction	All locations
LP4	Indirect impacts on State forests	To minimise impacts to State forests and State forest operations (including recreational uses and forest licence holders), the Forestry Corporation of NSW will be consulted on construction methodologies and activities as part of continued design development, and prior to and during construction activities.	Detailed design Construction	• Olney State Forest • Watagan State Forest • Corrabare State Forest • Pokolbin State Forest • Corrabare North Flora Reserve
LP5	Indirect impacts on NPWS estate	To minimise disruption to the NPWS estate, EnergyCo will consult with NPWS on construction methodologies and	Detailed design Construction	• Jilliby State Conservation Area

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		activities as part of continued design development and prior to and during construction activities, and during operation .	Operation	Corrabare North Flora Reserve
LP6	Impacts to mine operations	To minimise disruption to mining activities, mine operators will be consulted on construction methodologies and activities as part of continued design development, ~~and~~ prior to and during construction activities, and during operation. This will include consultation relating to: - any adjustments to existing mining-related infrastructure (including fences, tracks, mine roads and access tracks) - the timing and location of construction works, especially where there are some restrictions on vehicle or construction equipment movements - the timing and location of construction works which have the potential to impact mine operations, such as the stringing of transmission lines over existing mine infrastructure or active mining areas.	Detailed design Construction Operation	Mining complexes
LP7	Impacts to mine exploration and risks from mine subsidence	To minimise disruption to mining exploration activities, the Department of Regional NSW – Mining, Exploration and Geoscience, and holders of exploration licenses will continue to be consulted as part of continued design development prior to and during construction. Additionally, to manage risks associated with mine subsidence, the Department of Regional NSW – Mining, Exploration and Geoscience and Subsidence Advisory	Detailed design Construction	- Mine exploration lease areas - Mine subsidence districts

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		NSW will continue to be consulted as part of detailed design and throughout construction.		
LP8	Impacts to energy generation or electrical transmission infrastructure	To minimise disruption to energy generators, owners of transmission infrastructure will be consulted on construction methodologies and activities as part of continued design development and prior to and during construction activities.	Detailed design Construction	• Bayswater substation • Eraring substation • Existing transmission infrastructure
LP9	Impacts to road and rail transport corridors	To minimise disruption to road and rail corridors and operations during construction activities (stringing) impacting the M1 Pacific Motorway, and rail corridors, TfNSW and ARTC will be consulted on construction methodologies and activities as part of continued design development and prior to and during construction activities.	Detailed design Construction	Stringing locations
LP10	Land disturbance	Disturbed areas will be stabilised and appropriately reinstated back to pre-construction condition where practical, or as agreed in consultation with the relevant landowner and documented in property management plans.	Construction	All locations

Agriculture

AG1	Property restrictions	Ongoing consultation will be carried out with impacted agricultural lease holders and landowners to better understand impacts to agricultural operations and to inform the support to be provided to the landowners. Support provided will include the development of alternative irrigation strategies where current irrigation	Detailed design Construction	All locations
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Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		activities are inhibited and coordination of traffic control activities on adjacent roads to avoid spraying periods.		
AG2	Agricultural resource disturbance	During construction, disturbed areas will be stabilised and appropriately reinstated to their previous condition and use as soon as feasible and reasonable following the completion of construction. This will be carried out in consultation with the relevant landowner.	Construction	All locations
AG3	Biosecurity impacts during construction	On a regional level, any import of equipment or machinery, including from overseas, will follow the standard procurement safeguards and quarantine procedures as per the <i>Biosecurity Act 2015</i>. In addition, a biosecurity management plan will be prepared to address: • weed management controls, including inspection and cleaning of vehicles, plant and equipment, and management of earthworks and clearing activities • development of specific controls where high biosecurity risks are identified (e.g. with respect to foot and mouth disease to control any risk of introduction of the pathogen as a result of project activities) • specific controls applicable to properties in consultation with landowners, which will be consistent with property biosecurity plans where they are in place. Agreed protocols will be documented in the biosecurity management plan • specific controls applicable to vineyards in consultation with vineyard owners, particularly for where construction vehicle movements would occur	Construction	All locations

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		on adjacent roads. Agreed protocols will be documented in the biosecurity management plan • a monitoring program to track the effectiveness of the controls identified in the biosecurity management plan • consultation with the owners of organic certified properties to identify the specific risks and controls required to be implemented. The biosecurity management plan will be prepared in consultation with landowners, the Forestry Corporation of NSW and relevant local council biosecurity officers and government agencies in relation to the distribution of important weeds and the location of high biosecurity risk areas. In accordance with the requirements of the NSW <i>Biosecurity Act 2015</i> and <i>Biosecurity Regulation 2017</i>, the relevant control authority will be notified if new infestations of State priority weeds started because of construction activities.		
AG4	Biosecurity Impacts during operation	The biosecurity protocols and procedures captured under the network operator's environmental management system will be implemented along the transmission line easement, at substations and switching stations, and along access tracks during operation.	Operation	All locations
Social				
S01	Social impacts and benefits identified in SIA	A Social Impact Management Plan (SIMP) will be developed to outline the proponent's integrated approach to managing social impacts, enhancing benefits,	Detailed design Construction	Corridor Local

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		and delivering responsive engagement and communications. The SIMP will: • be developed in consultation with councils and relevant affected stakeholders • detail commitments and management measures, specifying the social impacts addressed, affected stakeholders, implementation timeframes, roles and responsibilities • describe how project-specific and regional social changes will be monitored to support adaptive management • provide mechanisms for community and stakeholder input to mitigation planning and evaluation of effectiveness • include a program to monitor, evaluate and publicly report on the effectiveness of the mitigation measures, including consideration of cumulative impacts • confirm the approach to respond to unanticipated impacts over the life of the project • include a trigger action response plan (TARP) to monitor, respond to and manage social impacts as they arise during project delivery. The SIMP will be implemented and monitored through quarterly data collection where possible to inform adaptive management and continuous improvement. Monitoring outcomes will be shared with the Regional Reference Group and other stakeholder forums as		Regional

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		relevant during construction. The proponent will also host annual community surveys to seek feedback on SIMP monitoring. The SIMP will be reviewed annually and updated based on monitoring data and community and stakeholder feedback. This will include assessing the relevance of mitigation measures and identifying any new issues or initiatives requiring inclusion to ensure they meet the residual risk ratings. Review outcomes will be published on the proponent's website.		
S02	Social impacts and benefits identified in SIA	A community communication strategy will establish the approaches to facilitating communication between the proponent and the community during construction. The would include the following measures: • appoint dedicated community liaison officer(s) and ensure they receive adequate training aligned to trauma-informed care principles • ensure key stakeholders - including affected landowners, Hunter businesses, community groups, local government, Millfield Public School and Forestry Corporation of NSW - are proactively informed through regular updates using a range of communications channels • undertake proactive, targeted engagement with impacted stakeholders located near construction support sites and temporary worker accommodation—including schools (such as Millfield Public School),	Detailed design Construction	Corridor Local Regional

		childcare centres, and social services in Millfield, Cooranbong and Martinsville—to develop and implement agreed mitigation measures • undertake consultation with affected schools (such as Millfield Public School), and childcare facilities and local governments on noise, dust and traffic impacts and management approaches • implement real time traffic monitoring and SMS alerts for stakeholders that may be directly affected by changed access such as local residents, Hunter businesses, community groups (such as Pokolbin Mountain Road Residents Group), recreational users of State forests, Hunter Valley Gliding Club, schools (such as Millfield Public School), mining companies, emergency services, childcare centres, and social services • establish a feedback mechanism by which the community can discuss or provide feedback to the ~~proponent~~ project as well as communication protocols for, including how the ~~proponent~~ project will respond to enquiries or feedback from the community • implement targeted communications regarding visual, noise, and air quality impacts, road changes/closures, and emergency access coordination—ensuring timely notification ahead of disruptions (see also mitigation measures LV1–LV3, NV1, AQ1–AQ3, and TT1 and updated mitigation measures as identified in Appendix D (Updated mitigation measures) of the Amendment Report)		
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		• provide clear, accessible information on EMF, fire safety, and associated risk reduction measures to address community concerns • offer 24/7 access to psychological services and tailored mental health support programs, with targeted confidential counselling for directly affected landowners • continue adaptive engagement with Traditional Owners, maintaining agreed governance arrangements and supporting ongoing cultural monitoring through planning and construction (see also mitigation measure AH104 and updated mitigation measures as identified in <i>Appendix D (Updated mitigation measures)</i> of the Amendment Report) • engage with affected Hunter businesses (e.g. wineries), tourism and recreation operators (including recreational user groups of forestry land) and Hunter Valley Gliding Club to minimise disruptions and support continuity of operations • set out a framework to develop a community notification processes in consultation with Forestry Corporation of NSW and councils during construction • prepare interface management plans with Glencore, Hunter Valley Operations and the Forestry Corporation of NSW with regards to site based operational interface • establish project coordination groups with Glencore, Hunter Valley Operations and the Forestry Corporation of NSW for coordination of operations with project construction.		
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Reference	Impact	Mitigation measure	Timing	Relevant location(s)
S03	Decision making systems, way of life, community, accessibility, livelihoods, health and wellbeing, culture	A complaints management system will be maintained throughout the construction period and for a minimum of 12 months after the completion of construction. The complaints management system will include the following (at a minimum): • contact details for a 24-hour response line and email address for ongoing stakeholder contact throughout the project • details of all complaints received will be recorded • verbal and written responses describing what action will be taken will be provided to the complainant (or as otherwise agreed by the complainant).	Detailed design Construction	Corridor Local Regional
S04	Decision making systems, way of life, community, livelihoods, health and wellbeing	A landowner engagement strategy will be developed and implemented for the project and will include: • appointing a dedicated land acquisition manager to oversee implementation of the strategy • ensuring all land and property access and community liaison personnel are trained in community and stakeholder engagement aligned with trauma-informed care principles to support interactions with vulnerable individuals, including those with chronic illness, disability, or mental health conditions. Property management plans will also be implemented to complement the landowner engagement strategy. These will be customised to address landowner concerns and property-specific needs, with a focus on respect for landowner values and expectations, co-existence	Detailed design Construction	Corridor Local

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		principles, biosecurity, and permissible land uses (see LP2 in Appendix D (Updated mitigation measures) of the Amendment Report ~~Chapter Error! Reference source not found. (Land use and property)~~).		
S05	Community, livelihoods	A local business and employment strategy will be prepared and implemented, reflecting EnergyCo's Hunter-first commitments to the local community. It will include the following initiatives: • identify local skills gaps and workforce skills and training requirements • set targets for local employment in line with the <i>NSW Renewable Energy Sector Board's Plan</i> (NSW Office of Energy and Climate Change 2022) • set diversity and inclusion targets that align with the <i>NSW Procurement Board Direction PBD 2023-01 Skills, Training, and diversity in construction</i> (NSW Treasury 2023) • education and training partnerships, such as TAFE NSW and local high schools and the upcoming Cessnock Education Precinct to support energy transition career pathways • support tailored training and upskilling programs for residents, with a targeted focus on young people, Aboriginal people, candidates seeking career transition from existing local industries, and older people • providing full, fair, and reasonable access to Australian, regional and local suppliers, and including	Detailed design Construction	Local Regional

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		commitments to an ongoing program of engagement with regional suppliers and contractors • investment in retraining and upskilling pathways for workers transitioning into renewable energy industries (e.g. technicians, infrastructure specialists) • maintaining a local and regional supplier database to increase promotion and access to project opportunities • prioritising local procurement and contractor engagement, with clear targets for small and medium enterprises (SMEs) linked to <i>NSW Procurement Board Direction PBD-2023-03 Procurement opportunities for small and medium businesses</i> (NSW Treasury 2023) and the <i>Small and Medium Enterprise and Regional Procurement Policy</i> (Buy NSW 2021) • partnering with Business Hunter and Local Chambers of Commerce to promote procurement opportunities • outlining mechanisms to monitor cumulative competition and changes to community access to key goods and services that may be affected by the project's local procurement activities • collaboration with local governments and industry including local mining companies to understand workforce and training needs, cumulative pressures and opportunities to enhance project benefits • delivery of workforce initiatives focused on Aboriginal employment pathways and contractor engagement.		

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
S06	Community, livelihoods	An industry and Aboriginal participation plan, outlining tailored strategies to strengthen Aboriginal business participation, will be prepared and implemented and will include: • ‘meet-the-contractor’ events for local and Aboriginal businesses to learn about potential opportunities associated with project delivery • supply chain mapping, with a focus on identifying goods and services suitable for local sourcing (e.g. select civil works, catering, cleaning, transport) and identifying the capacity of local and Aboriginal business to be ready for additional demand • Aboriginal procurement commitments of 2.5% with a stretch goal of up to 10% in line with the <i>NSW Renewable Energy Sector Board’s Plan</i> (NSW Office of Energy and Climate Change 2022) • set targets for local procurement in line with the <i>NSW Renewable Energy Sector Board’s Plan</i> (NSW Office of Energy and Climate Change 2022) • monitoring of the availability and price of goods and services in the community that are locally procured This plan will be developed in consultation with local business representatives including Traditional Owners and local Aboriginal business representatives.	Detailed design Construction	Local Regional
S07	Way of life, community, livelihoods, health and well being	A temporary worker accommodation management plan(s) will be developed prior to construction to address requirements set out in the <i>NSW Guideline for Construction Workers Accommodation</i> (May 2025), and	Detailed design Construction	Corridor Local

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		informed by consultation with neighbours, councils, health and emergency service stakeholders. This would include the following: - contemporary analysis of short-term and local accommodation capacity in key localities including consideration of updated workforce estimates and local accommodation facilities principles for the siting and use of existing accommodation within towns if required to supplement temporary worker accommodation facilities - a code of conduct for workers, which will include a zero-tolerance policy relating to anti-social behavior, health and safety, environmental management, community engagement and cultural awareness raising - measures to support workforce well-being and integration with the local community (e.g. internet access, promotion of participation in local events, healthy food options, wellbeing and safety programs) - dedicated health, paramedic, catering, and recreational services - specific measures to support community cohesion and safety at nearby communities including Millfield, Wollombi, Cooranbong, Martinsville, and the Lake Liddell Recreation Reserve - security protocols for each accommodation facility.		

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		The plan(s) will be reviewed on a 6-monthly basis to monitor the effectiveness of management commitments and to address emerging or unanticipated impacts.		
S08	Surroundings, community	Investigate opportunities to assist wildlife carers and organisations including Hunter Wildlife Rescue with relocating directly affected wildlife care and soft release pen facilities within the local area and to respond to increased demand in wildlife care services from construction of project.	Detailed design Construction	Corridor Local
S09	Way of life, community, health and wellbeing	Investigate and implement measures to minimise the perceived safety risk from construction vehicles in proximity to Millfield Public School (in consultation with Millfield Public School) such as: • improvements to the school car park to make it more suitable to all weather conditions • improvements to the school fencing to minimise risk of children running onto the road • traffic control measures for pedestrians near the school during pick-up and drop-off times for the duration of construction.	Detailed design Construction	Local
S10	Community and Employment Benefits	In accordance with Section 42D of the <i>Electricity Infrastructure Investment Regulation 2021</i> , EnergyCo will establish and implement a Hunter Central Coast Community and Employment Benefits Program in consultation with relevant Councils and impacted communities.	Detailed design Construction Operation	Corridor Local Regional

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
Historic heritage				
HH1	Historic heritage management	An HHMP will be prepared by a suitably qualified and experienced heritage specialist to provide the post-approval framework for managing archaeological mitigation and historical heritage within the project impact area. The HHMP will include as a minimum: - measures that will be implemented to manage potential impacts on listed heritage items, historic heritage value sites in the Singleton Military Area and newly identified sites assessed to hold or possibly hold heritage significance - inclusion of heritage awareness and management training within the site induction process for relevant personnel involved in site works - identify heritage sites that will be subject to archival recording - details of the management of any historic heritage artefacts recovered during construction adherence to guidelines in the management of heritage values on NPWS estate consultation on the HHMP will be undertaken with NPWS and Heritage NSW.	Detailed design Construction	Project impact area, and all identified heritage items, features of heritage significance and possible heritage significance that will be adversely impacted by the project
HH2	Impacts to heritage curtilage	Prior to construction activities near the heritage item, an exclusion barrier (e.g. fence or suitable alternative) will be installed at the curtilage of heritage items, ~~and~~ historic heritage value sites and activity areas and features	Detailed design Construction	Blacksmith's shop and forge - Vere township (AA 141-F 25)

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		where works will be in the vicinity to reduce the risk of unintentional impacts to heritage values. Where works enter the curtilage of an item or site: - any significant elements of the heritage item or site will be fenced off, preferably with a minimum of a 5 m buffer, where possible - where not possible, the area of works will be fenced off from the remaining part of the item or site curtilage The barrier will be maintained for the duration of construction.		- Unidentified site - Vere township (AA 142-F 26) - Vere school and Second Range Warden's Residence (AA 140-F 24) - Oakley Estate (Location 1) (AA 153-F 8, AA 155-F 8) - Warringah Stud/Old Myrtle (AA 161-F 28) - Stafford homestead and Clifford' homestead (AA 98-F 3, AA 99-F 4) - Archerfield and outbuildings - Catholic Church and Cemetery AA 70-F 12 – Dwelling (if not demolished) AA 90-F 1 – Greenleek homestead AA 90-F 2 - c.1833 structure, 'Greenluk' AA 90-F 2.1 - c.1833 'Greenluk' outbuilding AA 93-F 16 - Greenleek dairy

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
				• AA 93-F 17 - Greenleek milking shed • AA 98-F 3 - Clifford homestead ruins • AA 100-F 19 - Former dwelling • AA 223-F 41 - Inglewood Estate homestead
HH3	Impacts to heritage curtilage	The construction impact area at tower pad areas will be remediated at the end of construction to minimise impacts to setting of the heritage curtilage.	Construction	• Belmont • Beer Homestead • 'Stafford' homestead and 'Clifford' homestead (AA 98-F 3, AA 99-F 4) • Eraring Power Station • Stone house, timber slab barn and fencing
HH4	Ground disturbance at archaeological areas	Where possible, ground disturbance will be avoided within these site curtilages. Alternatives to ground disturbance for access track upgrades may include laying of protective materials, such as thick plastic and geofabric, over the ground surface followed by a layer of gravel. Materials for the upgrade of the access track can be deposited on top of this protective layer.	Detailed design Construction	• Blacksmith's shop and forge - Vere township (AA 141-F 25) • Unidentified site - Vere township (AA 142-F 26) • Vere school and Second Range Warden's Residence (AA 140-F 24)

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
				• AA 90-F 2 - c.1833 structure, 'Greenluk' • AA 127-F 7 - Oakhill homestead • AA 223-F 41 -Inglewood Estate homestead • AA 223-F 42 -Inglewood Estate outbuilding • AA 226-F 34 - Parson's dwelling
HH5	Changes to settings of item or heritage site	A review of visual impacts may be required once the final tower locations are known.	Detailed design	• ~~Oakley Estate~~ • ~~Stafford homestead and Clifford' homestead~~
HH6 HH5	Changes to settings of item or heritage site	Minimise tree removal in the laydown area at Crump Street.	Construction	• Millfield General Cemetery
HH7 HH6	Disturbance or destruction of unexpected items of potential heritage significance, relics or human remains	Any items of potential heritage significance or human remains discovered during construction will be managed in accordance with an unexpected finds procedure. Work in the vicinity of the find will stop if objects such as bonded bricks, timber or stones appearing in formation indicating a wall or floor for instance are found, or if soil with artefacts concentrations, is excavated. A description of the types of finds that will stop works within the vicinity of the finds will be determined prior to construction as part of the HHMP and staff involved in excavation work will be informed about how to apply it.	Detailed design Construction	• Blacksmith's shop and forge - Vere township (AA 141-F 25) • Unidentified site - Vere township (AA 142-F 26) • Vere school and Second Range Warden's Residence (AA 140-F 24) • Oakley Estate (Location 1) (AA 153-F 8, AA 155-F 8)

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		The unexpected finds procedure will include actions such as: • stop work procedures and exclusion buffers • using the advice of a technical specialist • consultation with Heritage NSW, Department of Climate Change, Energy, the Environment and Water (Heritage NSW) • protocols for continuing work in the area after assessment.		• Warringah Stud/Old Myrtle (AA 161-F 28) • Belmont • Beer Homestead • 'Stafford' homestead and 'Clifford' homestead (AA 98-F 3, AA 99-F 4) • Brick farmhouse (AA 109-F 5, AA 109-F 6) • Archerfield and outbuildings • Eraring Power Station • AA 90-F 2 - c.1833 structure, 'Greenluk' • AA 223-F 41 - Possibly Inglewood Estate homestead • AA 127-F 7 - Oakhill homestead • AA 226-F 34 - Parson's dwelling • AA 223-F 42 - Possibly Inglewood Estate outbuilding

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
~~HH8~~ HH7	Potential disturbance or destruction of known items of potential heritage significance, relics or human remains	Should it not be possible to avoid ground disturbance in areas of archaeological potential with heritage significance or possible heritage significance , ~~archaeological monitoring of any ground disturbing works will be prepared at sites of archaeological potential. An Archaeological Method Statement (AMS) an~~ Archaeological Research Design and Excavation Methodology (ARDEM) will be prepared to appropriately manage for the proposed works in these locations in accordance with the HHMP. If appropriate and relevant, exceptions under Section 139 of the <i>Heritage Act 1977</i> and Heritage NSW guidance regarding implementation of these exceptions will be utilised (Heritage NSW 2022, Heritage NSW 2022a, Heritage NSW 2022b).	Detailed design Construction	• Blacksmith's shop and forge - Vere township (AA 141-F 25) • Unidentified site - Vere township (AA 142-F 26) • Vere school and Second Range Warden's Residence (AA 140-F 24) • AA 90-F 2 - c.1833 structure, 'Greenluk' • AA 223-F 41 - Possibly Inglewood Estate homestead • AA 127-F 7 - Oakhill homestead • AA 226-F 34 - Parson's dwelling • AA 223-F 42 -Inglewood Estate outbuilding
~~HH9~~ HH8	Confirmed destruction of known items of heritage significance, relics or human remains	Direct impacts to the Wishing Well are unavoidable due to access track upgrades to Martinsville Hill Road. The Wishing Well will be subject to archaeological excavation and recording to ensure that a record is made prior to its ~~demolition~~ removal. ~~An AMS~~ The ARDEM will include specifications ~~be prepared~~ for these works. A commemorative plaque will be installed in a location as close as possible/practicable to the water source of the	Detailed design Construction	• Wishing Well (AA 186-F 40)

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		Wishing Well, and the built fabric of the Wishing Well will be relocated. The final locations of the commemorative plaque which will be determined through further consultation with NPWS, Forestry Corporation of NSW and Heritage NSW. A suitable storage location for the Wishing Well built fabric and timeframe for relocation will be determined during the development of the Historical Heritage Management Plan. The Wishing Well built fabric will be relocated, in accordance with the HHMP and relevant regulatory requirements, to the Sawmill site at the corner of Martinsville Hill Road and Watagan Forest Road, unless otherwise agreed upon by NPWS, Forestry Corporation of NSW and Heritage NSW. ~~Continue consultation regarding engineering solutions for maintaining access to the water source post construction.~~		

Noise and vibration

NV1	General noise and vibration	A Construction Noise and Vibration Management Plan (CNVMP) will be prepared to provide the framework and mechanisms for the management and mitigation of all potential noise and vibration construction impacts from the project. The CNVMP will include: — confirmation of nearby sensitive receivers — confirmation of work, construction equipment and hours of work will be completed and quantify resulting impacts at sensitive receivers.	Detailed design Construction	Project impact area and sensitive receivers
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Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		— criteria for the project and approval conditions — procedures and mitigation measures for potential impacts during out-of-hours work — requirements for noise and vibration monitoring — details of how community consultation in relation to noise and vibration will be completed — procedures for handling complaints — details on how respite will be applied where ongoing high impacts are expected at certain receivers.		
NV2	Prolonged construction noise impact from fixed work areas	Noise path control, such as hoarding or earth bunds will be investigated and implemented where required. Positioning of site structures will be considered to act as barriers between noisy work and receivers where practical.	Detailed design Construction	Construction support sites, laydown areas, substations and switching sites where receivers are predicted to be noise affected and near fixed work areas with long work durations
NV3	Out of hours construction works	Construction of the project will be carried out during standard construction hours where possible (Monday to Friday between 7.00 am and 6.00pm and Saturday between 8.00am and 1.00pm). An out of hours (OOH) work protocol that details how the project will identify, assess and approve out of hours work outside standard construction hours will be developed and implemented. The protocol will include provisions to: • carry out additional assessments for work proposed outside standard construction hours, to confirm noise	Detailed design Construction	Stringing transmission lines across main roads (M1 Pacific Motorway, Wollombi Road, Cessnock Road, Putty Road, Lemington Road) Other works that may need to be conducted out of standard construction hours

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		levels at potentially affected sensitive receivers and determine suitable mitigation measures to minimise noise levels • notify and engage with potentially noise affected receivers about upcoming work outside standard construction hours and address any associated complaints. • identify appropriate respite for noise affected receivers (where required).		
NV4	Construction noise impacts	Where construction is likely to result in exceedances of NMLs at sensitive receivers, mitigation and management measures will be implemented where practicable and appropriate. This will include (but is not limited to) the following measures: • select quieter plant and equipment and use alternative construction methods to minimise noise levels • plan and schedule concurrent noisy activities to minimise the number of items of noisy plant operating at one time and cumulative noise levels • install screens or use barriers to mitigate noise from stationary noise sources • maximise the offset distance between noisy plant and sensitive receivers • orient noisy plant and equipment away from sensitive receivers	Construction	All locations where exceedances of the applicable construction noise criteria are predicted at sensitive receivers

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		• use noise source controls, such as residential class mufflers, to reduce noise from all regularly used plant including cranes, excavators and trucks • use non-tonal reversing alarms in place of traditional beeper reversing alarms during OOH where noise impacts are predicted • turn off machinery when not in use • confirm equipment is maintained in accordance with manufacture's requirements to minimise generation of excessive noise • operate machinery in a manner which reduces occurrence of maximum noise level events, such as excavator bucket impacts, material drop heights, steel on steel impacts and dragging materials across hard surfaces • provide awareness training regarding noise mitigation measures to be implemented as part of regular toolbox meetings • notify and consult with potentially noise affected receivers about upcoming noisy activities • Confirm that noise affected receivers outside standard construction hours and highly noise affected sensitive receivers are managed with consideration to the CNVG5 additional mitigation measures such as notifications, verification, and respite where appropriate		
NV5	Construction noise validation	Monitoring will be carried out at representative locations during noise intensive activities that have the potential to	Construction	All locations where exceedances of the

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		cause noise exceedances at sensitive receivers, to confirm that actual levels are consistent with the predictions and that appropriate mitigation measures have been implemented.		applicable construction noise criteria are predicted at sensitive receivers
NV6	Noise levels from construction traffic	All construction vehicle movements will adhere to the following measures: • OOH vehicle movements will be minimised where possible • construction delivery vehicles will be fitted with straps rather than chains for unloading, wherever possible • use of engine compression brakes will be avoided at night and in residential areas • site access points and access tracks will be located as far as practical away from sensitive receivers • traffic flow, parking and loading/unloading areas will be planned to minimise reversing movements • construction inductions will include driver behaviour requirements to minimise vehicle noise emissions.	Construction	Construction routes and access tracks
NV7	Vibration	Where vibration intensive work is required within the recommended minimum working distances and is considered likely to exceed the cosmetic damage criteria: • different construction methods with lower source vibration levels will be investigated and implemented, where feasible • confirm any vibration-sensitive heritage structure that could be impacted by the proposed works including	Construction	All locations

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		confirming the structural integrity of the structure and applying appropriate vibration criteria • vibration monitoring will be undertaken at the start of work to determine actual vibration levels at the receiver • work will be ceased if the monitoring indicates vibration levels are likely to, or do, exceed the relevant criteria • direct and indirect impacts to all identified aboriginal objects and sites of high significance and their immediate environment (≥55 m) within the project impact area will be avoided		
NV8	Construction aircraft noise	Management measures will be implemented to minimise aircraft noise at sensitive receivers where practicable and appropriate, including: • notifying nearby sensitive receivers of upcoming work involving aircraft. This will include use of helipads within construction support sites, flight paths outside of the project impact area and stringing or other work within the HTP corridor. Notification will include scheduled dates, locations, indicative hours and a description of the proposed work • prioritising use of helipad locations at the construction support sites with the maximum distance offset from sensitive receivers (Hebden Road and Pikes Gully Road support sites)	Construction	HTP corridor and construction support sites

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		• varying flight paths between helipads and the HTP corridor to avoid repeated helicopter noise at sensitive receivers. • operating aircraft in accordance with Airservices Australia <i>Environmental Principles and Procedures for Minimising the Impact of Aircraft Noise</i> (2002) and the Helicopter Association International (HAI) Fly Neighbourly Guide.		
NV9	Operational transmission line noise	Operational transmission line noise impacts will be reviewed during detailed design, once the transmission tower and line placement, conductor arrangement and any property acquisitions are known. For each residence where potential operational noise levels are predicted to exceed the PNTL, noise monitoring to confirm actual operational noise levels will be carried out at representative locations following commencement of project operation. The noise monitoring will occur during representative L50 weather/atmospheric conditions conducive to generating ‘worst case’ noise from corona discharge. For residences where the monitoring identifies corona discharge levels above PNTLs, consultation will be undertaken with the landowner of the affected residence to identify solutions. Once the appropriate solutions have been agreed with the landowner, these will be implemented as soon as reasonably practical.	Detailed design Operation	All locations

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
NV10	Operational switching station and substation noise	Operational switching station and substation noise impacts will be reviewed during detailed design. The design will consider the following measures with a view to minimising noise impacts: • selection of equipment with consideration of operating sound power levels, where feasible • incorporation of transformer barriers where reasonable and feasible.	Detailed design Operation	Bayswater South and Olney switching stations Eraring substation
Surface water				
SW1	Impacts to surface water	A project specific Soil and Water Management Plan (SWMP) will be prepared, which provides mitigation measures to minimise impacts on soils and water. The SWMP will be prepared in accordance with the management approach outlined in <i>Chapter 8 (Management) of Technical Report 10 (Surface water impact assessment)</i> and will: • identify foreseeable risks relating to soil erosion and water pollution during construction and describe how these risks will be managed • include a description of soil and water management approaches, methods for impact assessment and monitoring, and mitigation measures • include ESCPs • include surface water quality monitoring requirements • include stormwater management plans	Detailed design Construction	All locations

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		At the completion of construction, appropriate measures will be carried into the network operator's Environmental Management System.		
SW2	Water quality and geomorphology	Scour protection will be considered for any infrastructure within a watercourse. Design will incorporate features that minimise impact on flow conditions and natural function of the watercourse, where feasible and reasonable. Works within or near watercourses will consider and adhere to the following guidelines: • <i>Controlled activities - Guidelines for watercourse crossings on waterfront land</i> (DPE 2022b) • <i>Controlled activities - Guidelines for instream works on waterfront land</i> (DPE 2022c) • <i>Why Do Fish Need to Cross the Road? Fish Passage Requirements for Watercourse Crossings</i> (DPI 2003) • <i>Policy and Guidelines for Fish Habitat Conservation and Management</i> (DPI 2013).	Detailed design Construction	All locations
SW3	Erosion and sedimentation	Erosion and sediment control plans (ESCPs) will be developed, prior to construction, and implemented in consultation with a Certified Professional in erosion and sediment control for all disturbance activities. ESCPs will include additional considerations for areas of high risk (e.g. high slopes) and located upstream of sensitive biodiversity areas (i.e. State forest areas) including at Olney switching station.	Detailed design Construction	All locations

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		The plans will detail the processes, responsibilities and measures to manage potential soil and water quality impacts in accordance with the principles and requirements in: — Managing Urban Stormwater – Soils and Construction, Volume 1 (Landcom 2004), Volume 2A (DECC 2008a) and 2C (DECC 2008b), commonly referred to as the ‘Blue Book’ — Best Practice Erosion and Sediment Control (IECA 2008) — Guidelines for controlled activities (Riparian corridors (DPE Water 2022a) and Watercourse crossings (DPE Water 2022b).		
SW4	Water quality monitoring	As part of a soil and water management plan (SWMP), a water quality monitoring program will be developed and implemented to establish baseline water quality conditions in watercourses of high sensitivity that may be impacted by nearby construction and to detect changes in water quality that may be attributable to the project during construction. The frequency, location and duration of sampling will be detailed in a monitoring program. Monitoring will: • be positioned upstream and downstream of project disturbance areas, focusing on locations with sensitive receiving environments. Where upstream and downstream monitoring is not possible, pre-construction water quality conditions will be established through baseline monitoring	Detailed design Construction	All locations

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		be carried out in accordance with water quality objectives and criteria for the project and in accordance with Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC 2000).		
SW5	Stormwater management – general	General stormwater management principles within the project impact area will include: - appropriate siting of proposed infrastructure within the project impact area, which will minimise (and avoid where possible) disturbance to existing drainage lines, riparian vegetation and overland flow paths - grading of earthworks to minimise changes to existing catchments and flow paths - surface drainage infrastructure that diverts upslope runoff around infrastructure and excavations to receiving drainage lines - infrastructure areas that contain oil and/or grease will include suitable containment measures - scour protection will be considered downstream of areas that increase runoff into receiving watercourses - consideration of appropriate water quality and stormwater controls (for ancillary areas) upstream of sensitive receiving environments, such as at Olney switching station an inspection program of installed scour protection and stormwater controls will be undertaken during construction. If protection and control works are	Detailed design Construction	All locations

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		found to be ineffective, the works will be rectified or designed as appropriate.		
SW6	Stormwater management – concrete batching plants	Stormwater management measures for concrete batching plants (both mobile and temporary) will include: • the separation of clean and potentially contaminated runoff by a bunded cementitious areas • the collection of first flush runoff from cementitious areas • offsite disposal of contaminated water not suitable for reuse to a licenced waste facility.	Detailed design Construction	All locations
SW7	Stormwater management – excavations	Stormwater management measures for excavations (particularly for transmission towers) will include bunding around excavations to prevent runoff into excavations.	Detailed design Construction	Excavations
SW8	Stormwater management – spoil	Runoff from spoil piles, topsoil stockpiles and other excavated material will be managed through: • minimising the number of stockpiles, stockpile areas and the time they are exposed • locating stockpiles away from drainage lines and natural watercourses and from where they will be susceptible to erosion • bunding stockpiles in accordance with Managing Urban Stormwater – Soils and Construction, Volume 1, 4th Edition (Landcom 2004)	Detailed design Construction	All locations

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		stabilising stockpiles, establishing sediment controls and suppressing dust as required.		
SW9	Water supply	Construction water supply would be sourced in accordance with the water supply hierarchy included in Section A4.4.4 in <i>Appendix A (Updated project description)</i>. Water supply management will be undertaken in accordance with agreements between the construction contractors, relevant landowners and relevant water users and suppliers. Groundwater and surface water allocations purchased from existing registered bores/users must be extracted in accordance with the conditions stated in the associated water access license(s) and water supply works approval(s). Surface water and groundwater extracted under an exemption under the <i>Water Management Regulation 2025</i> will be recorded and reported on in accordance with regulatory requirements.	Detailed design Construction	Water extraction locations
SW10	Dewatering	In the event that dewatering is required: the management of discharge water will be documented in the SWMP and will consider options for containment, reuse, application to grassed areas and transport to licensed waste facilities. In the event that discharge water is discharged to grassed areas:	Detailed design Construction	Excavations

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		• application will be limited to grassed areas within the project impact area, away from watercourses. If the discharge water is highly turbid, dewatering through a filter sock (or similar) or via transportable sedimentation tanks will be considered, where appropriate, to minimise sedimentation.		
SW11	Construction impact area – clearance (general)	Clearance practices will include: • immediate laying of mulch where ground disturbance has occurred (except in riparian corridors) • stabilisation of mulch where mobilisation by wind or runoff is possible • management of mulching activities and stockpiles to minimise tannin production and avoid discharge to watercourses • ground stabilisation using felled vegetation placed across the slope to minimise the concentration of flows, especially upstream of riparian corridors.	Construction	All locations
SW12	Construction impact area – clearance (riparian buffer areas)	Riparian buffer areas include 5 m from the top of bank of any mapped or unmapped watercourse. Clearance practices in riparian buffer areas will include: • hand clearing methods that minimise ground disturbance and disturbance of the understorey • no placement of mulch (and measures to avoid the transport of mulch into watercourses) • stabilisation of the watercourse bed and banks will be installed as soon as practical, where disturbance to the understorey or ground has occurred.	Construction	Riparian corridors

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		Where vegetation clearance is oblique or parallel to the watercourse (i.e. not perpendicular), stabilisation works with minimal impact will be designed prior to disturbance and installed as soon as practical.		
SW13	Trenching	Trenching undertaken in close proximity to (mapped) watercourses will: • be undertaken in accordance with <i>Controlled activities – Guidelines for laying pipes and cables in watercourses on waterfront land</i> • be undertaken when intercepted watercourses are dry • provide appropriate erosion and sediment control measures and stabilise topsoil following disturbance.	Construction	Trenching near mapped watercourses
SW14	Construction support sites - wastewater treatment plants	Wastewater treatment plants design and operation will include: • selection of the most appropriate system for the project based on the site layout, site conditions and constraints • design, construction, operation, maintenance and decommissioning in accordance with best practice and relevant legislation, guidelines and standards.	Detailed design Construction	Construction support sites
SW15	Construction support sites – riparian corridors	Activities undertaken at construction support sites will be in accordance with the <i>Controlled Activities - Guidelines for riparian corridors on waterfront land (DCCEEW 2025)</i> .	Detailed design Construction	Hebden Road construction support site Wollombi Road construction support site

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
				Freemans Drive construction support site
SW16	Hazardous chemicals	Herbicides will not be applied within five metres of the top of a bank or any mapped or unmapped watercourse. Herbicides are not to be applied: • when greater than five millimetres of rain is forecast in the following 24 hours • in windy conditions • when overland runoff is visible.	Construction Operation	All locations
-	Hazardous chemicals	Store chemicals, fuels and other hazardous substances in accordance with Mitigation Measure DG1, DG2, DG3 and DG4.	Construction Operation	All locations
Groundwater				
GW1	Damage and/or removal of existing landholder bores	Bores within the construction impact area will be clearly demarcated to protect the infrastructure from accidental damage. In the instance that accidental damage does occur, make good provisions will apply in accordance with the minimal impact criteria listed in the AIP. This will likely include replacement of a bore in a similar nearby location in consultation with landowners.	Construction	Construction impact area
GW2	Lowering of groundwater levels	All groundwater allocations will be extracted in accordance with the conditions of project approval and where required, associated water access licence(s).	Construction	In locations of incidental groundwater take

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		Where groundwater is encountered during excavations, any dewatered volumes will be recorded and managed in accordance with the requirements of the WM Act, WM Regulation and project consent conditions.		

Flooding

FL1	Risk of flooding to construction support sites	Detailed construction planning will consider flood risk at construction support sites, including: • reviewing construction site layouts and staging construction activities in order to avoid or minimise obstruction of overland flow paths and limiting the extent of flow diversion required • designing the layout of construction ancillary facilities and implementing stormwater management controls during their establishment in order to manage the impact of flooding on construction personnel, equipment and materials • identifying and applying measures to not worsen flood impacts on the community and on other property and infrastructure during construction up to and including the 1% AEP event where reasonable and feasible. Where warranted by the scale and nature of the proposed works this will include flood modelling and assessment to assess the extent of potential impacts and therefore the scope of mitigation measures that may be required • measures to mitigate alterations to local runoff conditions due to construction activities.	Detailed design Construction	All locations
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Reference	Impact	Mitigation measure	Timing	Relevant location(s)
FL2	Risk of flooding to stockpiles	Spoil stockpiles will be located in areas that are not subject to frequent inundation by floodwater, ideally outside the 10% AEP flood extent. The level of flood risk accepted at stockpile sites will depend on the duration of stockpiling operations, the type of material stored, the nature of the receiving drainage lines and also the extent to which it would impact flooding conditions in adjacent development.	Detailed design Construction	All locations
FL3	Flood risks during construction	Construction ancillary facilities (including ~~temporary worker accommodation~~ offices , workshops and staff facilities) will be located to manage the risk of construction personnel and machinery being exposed to hazardous flooding conditions during floods up to 1% AEP in magnitude based on the flood hazard vulnerability thresholds set out in <i>Flood Risk Management Guideline FB03 – Flood Hazard</i> (DPE, 2023).	Detailed design Construction	All locations
FL4	Flood risks during construction	The finished floor level of new buildings that are to be used for temporary worker accommodation will be a minimum of 0.5 metres above the peak 1% AEP flood level.	Detailed design Construction	All temporary worker accommodation locations
~~FL4~~ FL5	Flood risks during construction	Flood emergency management measures for construction of the project will be prepared and incorporated into relevant environmental and/or safety management documentation. This will include: contingency planning for construction ancillary facilities that are located in areas that are inundated by	Detailed design Construction	All locations

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		mainstream flooding or major overland flow during a 1% AEP event - for construction facilities (including temporary worker accommodation) located within the floodplain (i.e. within the PMF extent) the identification of how flood related risks to personal safety and damage to construction facilities and equipment will be managed - procedures to monitor accurate and timely weather data and disseminate warnings to construction personnel of impending flood producing rain.		
~~FL5~~ FL6	Impact on existing flood behaviour	The impact of the project on flood behaviour will be confirmed during detailed design. This will include consideration of future climate change.	Detailed design	All locations
~~FL6~~ FL7	Impact on existing flood behaviour	The project will be designed to minimise changes in the frequency, depth, velocity and duration of inundation that would lead to adverse flood related impacts on: - surrounding development for storms up to 1% AEP in intensity - critical infrastructure, vulnerable development or increases in risk to life due to a significant increase in flood hazard for floods up to the PMF.	Detailed design	All locations
~~FL7~~ FL8	Impact on existing flood behaviour	The substation upgrades extension and new switching stations will be designed to manage adverse impacts on the receiving drainage lines as a result of changes in the depth, velocity, extent and duration of flow during storms up to 1% AEP event in intensity.	Detailed design	Substations and switching stations

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
~~FL8~~ FL9	Impact on existing flood behaviour	The impact of the Eraring substation extension on flood behaviour at the existing Eraring Power Station will be confirmed during detailed design. Consultation will continue to be carried out with Origin Energy to confirm the effect that any residual flood impacts could have on the operation of the Eraring Power Station for all floods up to the PMF, and to inform the scope of mitigation measures that may be required.	Detailed design	Eraring substation extension
~~FL9~~ FL10	Impact on existing flood behaviour	The substation and switching stations, including their access road connections to existing roads, will be designed to ensure that the existing level of flood immunity of the road network is maintained and increases in flood depths and hazards along the road network are minimised.	Detailed design	Substations and switching stations
~~FL10~~ FL11	Impact on existing flood behaviour	Localised increases in flow velocities around transmission line towers, at drainage outlets from the substation and switching stations, and at watercourse crossings along access tracks will be mitigated through the provision of scour protection and energy dissipation measures.	Detailed design	All locations
~~FL11~~ FL12	Flooding impacts at transmission corridor	Transmission towers located on the floodplain (i.e. within the PMF extent) will be designed to manage the risk of failure of the transmission line network due to damage from flooding.	Detailed design	HTP corridor
~~FL12~~ FL13	Flood impacts at access tracks	Drainage control measures will be incorporated into the upgraded access tracks and new access tracks to manage runoff and the impact it could have on scour to the tracks and surrounding areas. These drainage control measures	Detailed design Construction	Upgraded or new access tracks

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		will be implemented in accordance with the following guidelines: • <i>Guidelines for the Planning, Construction and Maintenance of Tracks</i> (Department of Land & Water Conservation, 1994) • <i>Managing Urban Stormwater: Soils and Construction – Volume 2C Unsealed Roads</i> (Department of Environment and Climate Change, 2008c). Scour protection will be provided to manage localised increases in flow velocities upstream and downstream of watercourse crossings along the upgraded or new access tracks, while the access tracks will be lined or stabilised where required to manage scour of the track and the impact this could have on the displacement of sediment into the downstream watercourse.		
~~FL13~~ FL14	Flood impacts at road and intersection upgrades	Further flood modelling will be undertaken during detailed design to assess the impact that road and intersection upgrades will have on flood behaviour. During detailed design, detailed 3-dimensional layouts of the proposed road and intersection upgrades will be developed, which will be used to inform the layout of the associated drainage measures that are aimed at controlling external catchment runoff. The detailed 3-dimensional layouts of the proposed road and intersection upgrades will also be used to undertake an assessment of the impact that the proposed works would have on flooding patterns and to identify the scope of additional drainage measures that would be required	Detailed design	Road and intersection upgrades

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		to manage any resulting adverse impacts due to changes in the depth, velocity and duration of inundation external to the road corridor.		
FL15	Impact of future climate change of flood behaviour	To manage the impact of flooding on the safe operation of the switching stations and substation extension, a 0.5 metre freeboard would be applied to the 1% AEP peak flood level when setting the minimum level of the platforms containing the switchyards, reactors, transformers, control buildings and associated infrastructure.	Detailed design	Switching stations and substation

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
Soils and contamination				
SL1	Erosion and sedimentation	Undertake field assessment and laboratory testing of representative soils subject to disturbance to refine soil management and erosion and sediment control measures. A soil ground truthing program should be prepared to select representative soils and a suitable laboratory testing suite, as determined by a suitably qualified environmental consultant based on a review of the regional data presented in this report and the outcomes of site inspections. The program should cover the entire project impact area, but focus on high risk areas identified within this report (i.e. high erosion risk, mapped acid sulfate soil risk areas, regionally mapped BSAL). The program should consist of a minimum of 1 site per transmission tower, multiple sites for infrastructure areas where ground disturbance is of higher impact, and 1 site per 500m for new tracks, should be included in the program, however this should be informed by landform, risk assessment and site observations and more sites may be required.	Detailed design Construction	All locations
SL2	Disturbance of sodic soils	Implement additional measures if sodic soils are identified in SMU 2 and would be subject to ground disturbance and/or where sodic soils are stockpiled. This is anticipated to be primarily in the localities of Bayswater, Broke and Mount Thorley and may include applying gypsum as an ameliorant to displace the sodium	Detailed design Construction	Areas mapped as SMU 2

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		and provide the soil with a stronger aggregate and hold structure when wet.		
SL3	Rehabilitation of disturbed areas	A Rehabilitation Management Plan (RMP) will be prepared as part of the project's environmental management system. The RMP will detail all aspects of returning construction areas to a safe, erosionally stable and non-polluting landform consistent with surrounding terrain and land uses. The detailed Rehabilitation Plan will include a Trigger Action Response Plan (TARP) that addresses erosion and soil risks during construction rehabilitation, as per Table 16 of <i>Technical Report 9 - Soils and land impact assessment</i> .	Detailed design Construction	All locations
SL4	Rehabilitation of disturbed areas	Areas of disturbed soil will be rehabilitated promptly and progressively during construction to minimise the risk of erosion and sedimentation occurring.	Construction	All locations
SL5	Rehabilitation of disturbed areas	Temporary erosion and sediment control measures will be put in place for high risk areas (i.e. high erosion risk, mapped acid sulfate soil risk areas, regionally mapped BSAL) until a time rehabilitation objectives (as outlined in the RMP) and sufficient groundcover has been achieved.	Detailed design Construction	Areas of high erosion risk, mapped acid sulfate soils risk areas and regionally mapped BSAL
SL6	Erosion and sedimentation during operation	Limit additional soil disturbance during operation by restricting traffic to formed access tracks and roads.	Operation	All locations
SL7	Erosion and sedimentation during operation	Standard erosion and sediment control measures will be implemented to minimise the potential for erosion within areas to be accessed during operation. These measures will be developed on a case-by-case basis and are likely to	Operation	All locations

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		include measures such as sediment fencing, localised sediment traps, and progressive stabilisation with vegetation.		
C1	Contamination exposure (human health and/or the environment)	Develop a Contamination Management Plan that: - includes measures to avoid or minimise disturbance to areas of medium to high risk of contamination where possible - ensures that prior to construction, areas of medium to high contamination risk are tested to confirm the presence/absence of contaminants of concern - includes an unexpected finds protocol to manage the discovery of previously unidentified contaminated material (including acid sulfate soils, naturally occurring asbestos and the discovery of high carbon material within mining complexes outside of areas indicated by mine operators where this occurs). Investigation and management of contamination a will be carried out in accordance with the relevant legislation, standards and guidelines, including but not limited to the <i>National Environment Protection (Assessment of Contamination) Measure 1999</i>, as amended 2013, and all relevant guidelines made or approved under the <i>NSW Contaminated Land Management Act 1997</i> and the <i>NSW Protection of the Environment Operations Act 1997</i>.	Detailed design Construction	All locations
C2	Mobilisation of saline soils	Prior to ground disturbance, a visual inspection will be undertaken to identify areas that potentially contain saline soils. Areas where evidence of salting is observed	Construction	All locations

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		or recorded will be subject to further testing as required. If salinity is confirmed, excavated soils will be managed in accordance with Book 4 Dryland Salinity: Productive use of Saline Land and Water (NSW DECC 2008) to prevent impacts from salinity.		
C3	Impacts due to spontaneous combustion from disturbance of high carbon material	Avoid disturbance of areas of active (and previously active) surface mining, underground mine access and process routes where possible. Where these areas cannot be avoided, testing of the material(s) will be undertaken to confirm if high carbon material would be disturbed and/or exposed, and appropriate safeguards implemented to make sure the risk of spontaneous combustion is adequately controlled in accordance with the <i>Industry and Investment MDG Spontaneous Combustion Management Guideline</i> (NSW 2011).	Detailed design Construction	All locations
C4	Contamination exposure to human health and/or the environment	Disturbance to areas of medium to high risk of contamination will be avoided or minimised where practicable during construction. Investigation and management of contamination will be carried out in accordance with the relevant legislation, standards and guidelines, including but not limited to the <i>National Environment Protection (Assessment of Contamination) Measure 1999</i> , as amended 2013, and all relevant guidelines made or approved under the <i>Contaminated Land Management Act 1997</i> and the <i>Protection of the Environment Operations Act 1997</i> .	Detailed design Construction	Areas of medium to high contamination risk

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
C5	Contamination exposure to human health and/or the environment	Prior to construction, areas subject to disturbance within the Mount Arthur, HVO, Mount Thorley Warkworth and Bulga Coal Mine lease areas will be tested to confirm the presence/absence of contaminants of concern. Interface with existing mine surface and groundwater infrastructure should be avoided to the extent practicable.	Detailed design Construction	Mount Arthur, HVO, Mount Thorley Warkworth and Bulga Coal Mine sites
C6	Contamination exposure to human health and/or the environment	Additional investigations will be undertaken to confirm the presence/absence of the contaminants of concern prior to commencing ground disturbance within 50 m of farm structures or farm dams (if applicable).	Detailed design	Ground disturbance within the construction impact area within 50 m of farm structures or farm dams
C7	Contamination impact to human health and/or the environment	An unexpected finds protocol will be developed and implemented to manage the discovery of previously unidentified contaminated material.	Construction	All locations
C8	Soil and/or water pollution	Construction materials, spoil and waste will be stored/managed in accordance with applicable EPA requirements to minimise the potential for the project to result in the contamination of soil, groundwater, and/or surface water quality.	Construction	All locations
C9	Unexploded ordnance	Manage unexploded ordnance risks in accordance with Defence Unexploded Ordnance Management Manual and in consultation with the Department of Defence. Undertake site-specific risk assessment at locations where there is a risk of encountering unexploded ordnance. The risk assessment will be carried out prior to any activities that could interact with unexploded	Construction	All locations

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		ordinance and include field verification to validate the historical assessment of unexploded ordinance contamination and identify appropriate mitigation practices. Ensure the risk assessment includes input from an appropriate unexploded ordinance specialist and identifies if and when an explosives engineer is required during construction activities. Ensure the management actions identified in the risk assessment are implemented prior to and during all relevant construction activities. Ensure all personnel conducting intrusive works within an identified unexploded ordinance area are provided with appropriate safety and awareness briefing(s) prior to participating in the intrusive works.		
C10	Soil and/or water pollution	Incident response procedures will be implemented to avoid and manage accidental spillages of fuels, chemicals or fluids during operation and maintenance activities.	Operation	All locations
C11	Acid sulfate soils	If soil disturbance is required in those areas mapped as containing potential acid sulfate soils, targeted soil testing will be undertaken prior to construction to confirm any acid sulfate soils risks present and acid sulfate soils management plan (ASSMP) would be prepared if required.	Detailed Design Construction	Locations mapped as containing potential acid sulfate soils
-	Erosion and sedimentation during construction	Manage erosion and sedimentation through the implementation of Erosion and Sediment Control Plans in accordance with mitigation measure SW1 and SW3.	Detailed design Construction	All locations

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
-	Soil and/or water pollution from the project	Store chemicals, fuels and other hazardous substances in accordance with Mitigation Measure DG1, DG2, DG3 and DG4.	Construction Operation	All
Hazards and risk				
HR1	Utilities management	Potential impacts on existing utility services would be confirmed during detailed design and further construction planning. A utilities management strategy would be prepared by the construction contractor, identifying how utility adjustments, protections and relocations would be defined and managed and how these works would be coordinated with asset owners. Where the extent of connection work or any proposed relocation and/or protection work is to be undertaken outside of the project footprint, additional environmental investigation would be carried out and the work reviewed for consistency with the approved project in accordance with the process described in Chapter 6 (Environmental management).	Detailed design Construction	All
BF1	Bushfire emergency and evacuation	A bushfire emergency management and evacuation plan (BEMEP) will be prepared and implemented in accordance with the risk management measures detailed in <i>Chapter 7 (Management) of Technical Report 14 - Bushfire risk assessment</i> and the requirements of NSW RFS. The BEMEP will outline procedures for: • monitoring forecast fire danger ratings, alerts and warnings, and any fire incidents, and communicating	Detailed design Construction Operation	All locations

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		this information to the construction and operational workforce • evacuating the project impact area in response to fire warnings or incidents, including protocols for authorising and supervising evacuations and identifying off-site refuge locations and evacuation routes (including alternative emergency evacuation routes in forested areas) • reporting fire and smoke sightings to the NSW RFS, FCNSW, and the Singleton Military Area Range Control • determining when it is safe to return to the project impact area following an evacuation • training for emergency response and evacuation management.		
BF2	Bushfire	A bushfire safety system will be prepared and implemented in accordance with the risk management measures detailed in <i>Chapter 7 (Management)</i> of <i>Technical Report 14 - Bushfire risk assessment</i>. The bushfire safety system will detail restrictions and procedures to prevent accidental fire ignition during construction and operation, and contingency arrangements for workers to extinguish accidental fire ignitions at the source while the fire can still be controlled with portable extinguishers and on-site equipment. In particular, the bushfire safety system will include: • engagement protocols with NSW RFS and FCNSW fire teams	Detailed design Construction Operation	All locations

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		• a hot works management system for implementation during construction • a smoking prohibition and a designated smoking area protocol • fire-safe work procedures for earthmoving and drilling works • protocols for driving and parking vehicles off established roads to minimise the potential for accidental fire ignition from vehicle exhausts • measures to minimise worker exposure to bushfire risk, including exclusion of works during elevated fire danger conditions, active fire weather and incident monitoring, and a clearly communicated bushfire evacuation plan with primary and alternative trafficable routes.		
BF3	Bushfire (fire prevention quality assurance)	A works quality auditing process will be applied to construction contractors and will incorporate audit criteria assessing the implementation of the required fire prevention, preparedness and response-readiness measures detailed in <i>Chapter 7 (Management) of Technical Report 14 - Bushfire risk assessment</i> .	Construction	All locations
BF4	Bushfire (project design, operation and maintenance)	The project will be designed, operated and maintained to reduce bushfire risk to and from project infrastructure in accordance with the applicable standards detailed in <i>Chapter 7 (Management) of Technical Report 14 - Bushfire Risk Assessment</i> , including:	Detailed design Construction Operation	All locations

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		- transmission lines will be designed to meet or exceed design standards in Australian Standard <i>AS/NZS 7000:2016 Overhead line design</i> - easements will meet or exceed design standards in Australian Standard <i>AS/NZS 7000:2016 Overhead line design – Appendix CC</i> - switching stations will meet or exceed design standards in Australian Standard <i>AS 2067:2008 Substation and high voltage installations exceeding 1 kV AC</i> - maintenance and operation of the transmission infrastructure will be carried out in line with Australian Standard <i>AS 5577:2013 Electricity Network Safety Management Systems</i> - asset management will be carried out in line with <i>ISO 55001:2014 Asset Management – Management Systems – Requirements</i>.		
BF5	Bushfire (asset protection zones)	Asset protection zones (APZs) will be established for Bayswater South and Olney switching stations, temporary worker accommodation and project office buildings at construction support sites, in accordance with the requirements of <i>Planning for Bushfire Protection 2019</i> (NSW RFS 2019) and NSW RFS standards for APZ, and as detailed in <i>Technical Report 14 - Bushfire Risk Assessment</i> . Routine inspection and control of vegetation will be carried out for APZ maintenance.	Detailed design Construction Operation	Construction support sites Switching stations
BF6	Bushfire (Olney switching station)	A fire trail will be installed and maintained within the APZ on the western side of Olney switching station, providing connection to Watagan Forest Road.	Construction Operation	Olney switching station

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
BF7	Bushfire (vegetation maintenance)	Cyclic inspections and control of vegetation within transmission line easements and hazard tree zone will be carried out in accordance with Transgrid standard for <i>Maintenance of Easements and Access Tracks</i> .	Construction Operation	HTP corridor and hazard tree zone
BF8	Bushfire (firefighting water supply)	Where reticulated (mains) water supply is not available, a static water supply (tank) will be provided ~~at~~ in proximity to, but outside of the boundary of Bayswater South and Olney switching stations, at a location agreed with FCNSW , in accordance with the requirements of <i>Planning for Bushfire Protection 2019</i> (minimum capacity of 20,000 litres). Water supply at Bayswater South switching station will be through the utilisation of nearby non-potable open water sources in close proximity. Design details will be confirmed during detailed design. Where reticulated (mains) water supply is available, hydrant spacing, design and sizing is to comply with the relevant clauses of AS 2419.1:2021.	Detailed design Construction Operation	Bayswater South and Olney switching stations
BF9	Bushfire protection (asset protection zone)	The temporary worker accommodation within the Wollombi Road construction support site will be designed and located to ensure APZs in all directions achieve a BAL of no greater than BAL 10.	Detailed design Construction	Wollombi Road construction support site
BF10	Bushfire	Where temporary worker accommodation is proposed, a site manager is required on site who is aware of the bushfire risk and emergency response procedures during the construction phase of the project.	Construction	Temporary worker accommodation
DG1	Storage and use of dangerous goods	Dangerous goods will be stored in accordance with suppliers' instructions and relevant legislation, Australian	Construction Operation	All locations

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		Standards, and applicable guidelines. Dangerous goods storage may involve bulk storage tanks, chemical storage cabinets/ containers or impervious bunds. Any storage areas will be designed in accordance with Australian Standard <i>AS1940: The storage and handling of flammable and combustible liquids</i> where applicable. The storage and use of dangerous goods will be carried out in line with the following: • all personnel required to work with dangerous goods and other hazardous material will be trained in their safe use and handling • all chemicals or other dangerous goods will be stored in a bunded area and away from any drainage lines or pits. The capacity of the bunded area will be at least 130% of the largest chemical volume contained within the bunded area • no refuelling or bulk herbicide preparation will occur within 40 m of natural drainage lines • in the event that minimum distances cannot be achieved (e.g. due to land constraints or a requirement to store volumes of hazardous materials in excess of storage thresholds), a risk management strategy will be developed as required to confirm that the project would not have a significant off-site risk.		
DG2	Accidental spills of dangerous goods	Environmental spill kits containing spill response materials suitable for the works being undertaken will be kept on site at all times and be used in the event of a spill.	Construction Operation	All locations

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		Any spills will be contained, cleaned up promptly and immediately reported to the relevant site representative.		
DG3	Transport of dangerous goods	Dangerous goods and hazardous substances will be transported in accordance with relevant legislation and codes, including the <i>Dangerous Goods (Road and Rail Transport) Act 2008</i> , Road and Rail Transport (Dangerous Goods) (Road) Regulation 1998 and the Australian Code for the Transport of Dangerous Goods by Road and Rail (National Transport Commission, 2018).	Construction Operation	All locations
DG4	Storage and transport of dangerous goods during operation	During operation, storage and transport of dangerous goods will be managed to ensure the development remains below the potentially hazardous screening criteria in Applying SEPP 33.	Operation	All locations
EMF1	Public exposure to EMF	Detailed design for the project will be developed to comply with the following criteria for public exposure to EMF: • Magnetic fields: 2000 milligauss being the ICNIRP guideline 'Reference Level' • Electric fields: 9.1 kV per metre directly under the lines and at the edge of easement, ensuring compliance with the ICNIRP guideline 'Basic Restriction', and 5 kV per metre at the boundary of switching stations (where access is unrestricted), ensuring compliance with the ICNIRP reference level.	Detailed design	Transmission line, substation modifications, new switching stations
EMF2	Occupational exposure to EMF	Detailed design for the proposed switching stations and modifications to existing substations will be developed to	Detailed design	Substation modifications and new switching stations

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		comply with the following criteria for occupational exposure to EMF: • Magnetic fields: 10,000 milligauss • Electric fields: 10 kV per metre.		
TC1	Impacts to AM radio	Investigations will be carried out during detailed design to determine the AM radio impacts to receivers within 131 m of the centre of the transmission line. The measured radio frequency interference levels at a sensitive receiver location will be investigated to determine if compliance with the relevant limits can be achieved for at least 80% of the time with a confidence level of at least 80% (80/80 rule).	Detailed design	Sensitive receivers within 131 m of the centre of the transmission line
AS1	Safety of Aircraft Movements	The final design of the HTP with coordinates and elevations will be provided to the following stakeholders prior to construction: • Airservices Australia • Commonwealth Department of Defence • Hunter Valley Gliding Club • NSW Ambulance Service • NSW National Parks and Wildlife Service • Forestry Corporation of NSW • NSW Rural Fire Service • mine complexes traversed by HTP • certified aerodromes within 30km of the HTP • uncertified aerodromes and HLS within 10km of the HTP.	Detailed design	Operation impact area

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		Further notification will occur if the finalised design, upon completion of construction, alters the details supplied to the above listed stakeholders. Complete the Vertical Obstacle Notification Form in accordance with the requirements of Airservices Australia.		
AS2	Safety of Aircraft Movements	To facilitate the flight planning of aerial application operators conducting flight operations on any property near the proposed transmission line, final design details of the project, including location and height information of the transmission line will be provided to landowners. This is so that, when asked for hazard information on their property, the landowner may provide the aerial application pilots and/or emergency services helicopter pilots with all relevant information.	Detailed design	Operation impact area
AS3	Safety of Aircraft Movements	The following stakeholders will be notified of the scheduling of the use of cranes, drones and helicopters for the construction of the project, prior to the commencement of relevant works: • Airservices Australia • Commonwealth Department of Defence • Hunter Valley Gliding Club • NSW Ambulance Service • NSW National Parks and Wildlife Service • Forestry Corporation of NSW • NSW Rural Fire Service	Detailed design	Operation impact area

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		mine complexes traversed by HTP.		
AS4	Safety of Aircraft Movements	Helicopters and/or drones used for stringing will be operated in accordance with the applicable CASRs for their operations.	Construction	Operation impact area
AS5	Safety of Aircraft Movements	Obstacle lighting and marking of the transmission lines is not considered to be required outside of the lateral limits of certified airports' OLS. Whilst not currently a requirement, this will need to be confirmed by CASA. The provision of markers on transmission lines and towers within 3 nautical miles of an uncertified aerodrome and the Singleton Military Area should be discussed with the appropriate stakeholders during detailed design. Obstacle lighting and marking of the transmission lines in the vicinity of HLS is to be considered where requested by nearby landowners.	Detailed design	Operation impact area
AS6	Obstacle lighting	Temporary construction cranes greater than 60 m in height will have obstacle lighting fitted near the top of the crane.	Construction	All locations
~~AS7~~	~~Safety of Aircraft Movements~~	~~Consult with the HVGC to finalise the aviation risk assessment for Warkworth Aerodrome and issuing the outcomes to the HVGC and CASA~~	~~Detailed Design~~	~~Project impact area within proximity to the Warkworth Aerodrome~~
AS7	Safety of Aircraft Movements	Provide reasonable funding, subject to consultation with HVGC and landholder agreement, to support the establishment and maintenance of an emergency landing site east of the Warkworth Aerodrome, as described within the Warkworth Airfield Risk Assessment (May 2026).	Detailed Design Construction	Agreed site within Hunter Valley Operations

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
AS8	Safety of Aircraft Movements	Provide funding to support the HVGC to update relevant safety procedures and material by agreement with HVGC, as described in the Warkworth Airfield Risk Assessment (May 2026).	Detailed Design Construction	Warkworth Aerodrome
Other matters				
AQ1	Air quality – general	A construction air quality management plan will be prepared by a suitably qualified and experienced person and will include appropriate measures to mitigate the risk of air quality impacts from the project during construction.	Detailed design Construction	Project impact area and impacted receivers
AQ2	Dust generation – general	Management measures to prevent or minimise dust generation and impacts on the local community and environment will include but not be limited to: • appropriate communications will be developed before construction and earthwork activities start to notify the potentially impacted residences of the project (including the duration and types of works) and relevant contact details for complaints reporting • a complaints register will be maintained through construction which will include any complaints related to dust • any exceptional incidents that cause dust and/or air emissions, either on or off site, and the action taken to resolve the situation will be recorded in the register • shade cloth barriers with site fences around sensitive receiver locations close to potentially dusty activities,	Construction	• Bayswater South switching station • Olney switching station • Construction support sites and laydown areas • Transmission line (including access tracks)

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		such as excavation and material stockpiles, will be used where practicable • proper maintenance of all equipment engines will be carried out • engines will not be left running at idle where possible • a water cart or sprays will be deployed to keep exposed areas and soil stockpiles moist, where necessary and practical • working practices will be modified by limiting activity during periods of adverse weather (hot, dry and windy conditions) and when dust is seen leaving the site • the extent of clearing of vegetation and topsoil will be limited to the designated footprint required for construction and appropriate staging of any clearing will be implemented • earthworks and exposed areas will be revegetated (where required) to stabilise surfaces as soon as practicable • imported construction materials such as sands and aggregates will be appropriately managed to maintain adequate moisture levels. This will include, but is not limited to, applying water to stockpiles, covering stockpiles and/or storing materials in bunded areas, where practical • vehicle loads entering and leaving the project impact area with potentially dusty loads will be covered to prevent escapes of materials during transport		

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		• water-assisted dust sweepers will be used to remove, as necessary, any material tracked out of the project impact area onto public roads • on-site access roads will be inspected for integrity and necessary repairs to the surface will be instigated where necessary as soon as reasonably practicable • all inspections of construction routes and any subsequent action will be recorded in a site register.		
AQ3	Dust generation specific to helicopter and drone usage	Management measures to prevent or minimise dust generation and impacts on the local community and environment from helicopter and drone activities will include but not be limited to: • vegetation will be maintained (or exposed areas will be revegetated) with groundcover (i.e. grass) in the immediate area surrounding helicopter pads • helicopter activities will be monitored by site personnel to implement additional management measures when required • water-assisted dust sweepers will be used to remove, as necessary, any material deposited onto helicopter pads • watering will be deployed to ensure exposed areas are kept moist, where required.	Construction	Construction support sites (Pikes Gully Road, Gouldsville Road and Freemans Drive)
AQ4	Dust generation specific to concrete batching plants	Management measures to prevent or minimise dust generation and impacts on the local community and environment from concrete batching plants will include but not be limited to the following:	Construction	Construction support sites and laydown areas (with concrete batching plants)

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		- trucks transporting aggregates and sand loads will be covered - raw aggregates and sands will be stored appropriately in storage bays or bins and materials will not exceed the height of the bays - raw materials will be kept adequately moist for both storage and transfer (e.g. via front end loader) - cement silos and hoppers will be fitted with dust filters - cement silos will be fitted with emergency pressure alerts and emergency cut-off protection systems - transfer of cement from storage to batching will occur via closed loop system (e.g. steel augers).		
AQ5	Dust generation near vineyards	Management measures to prevent or minimise dust generation and impacts on vineyards from adjacent road upgrades and construction vehicle movements will include but not be limited to the following: - Prior to commencement of construction and road upgrade works, appropriate communications will be developed to notify the potentially impacted properties of the project (duration, types of works, etc.) and relevant contact details for environmental complaints reporting. - A complaints register will be maintained through the construction and road upgrade works phase which will include any complaints related to dust. - Any exceptional incidents that cause dust and/or air emissions, either on or off site, and the action taken	Construction	Road upgrade locations and construction vehicle routes adjacent to vineyards

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		to resolve the situation will be recorded in the register. • Shade cloth barriers with site fencing around vineyard fence borders close to potentially dusty activities, such as unpaved access roads and road upgrade sections, will be used where practicable. • Engines will not be left running at idle where possible. • A water cart or sprays will be deployed to ensure that exposed areas are kept moist, where necessary and practical.		
WM1	Waste management	A waste management and resource recovery plan will be prepared and will include appropriate measures to manage waste generation, reuse, recycling and disposal during construction of the project.	Detailed design	All locations
WM2	Waste facilities	The recycling and disposal facilities to be used during construction and operation of the project will be determined based on availability/capacity, waste licensed to be accepted and confirmed waste classifications. Consultation will be carried out with local councils including Muswellbrook, Singleton, Cessnock, Lake Macquarie, Central Coast and Newcastle in relation to the disposal of project waste at licensed facilities.	Detailed design Construction	All locations
WM3	General waste management	The following general waste management actions will be implemented throughout the construction and operation of the project:	Construction Operation	All locations

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
		- the waste hierarchy principles of avoid/reduce, reuse, or recycle with disposal as the last resort will be applied - waste will be assessed, classified, managed and disposed of in line with the <i>NSW EPA Waste Classification Guidelines</i> (2014) and the relevant requirements of the <i>Protection of the Environment Operations (Waste) Regulation 2014</i> - waste streams will be segregated to avoid cross contamination of materials and to maximise reuse and recycling opportunities - waste and surplus spoil will be removed and transported to an appropriately licensed waste disposal or transfer facility or other facilities lawfully able to accept materials - wastewater from construction work will be collected and transported to a licensed premise that can lawfully accept the waste.		
WM4	General waste management	The waste management measures outlined in Table 22.13 and Table 22.15 of the EIS will be implemented.	Construction Operation	All locations
E1	Local employment opportunities	Local worker participation will be promoted via the preparation of a local workforce development plan, a local industry participation plan and an Australian industry participation plan.	Detailed design Construction Operation	All locations

Reference	Impact	Mitigation measure	Timing	Relevant location(s)
E2	Local business opportunities	Consultation will be carried out with local councils, economic development organisations and local chambers of commerce to: • inform local business of the goods and services required for the project, the service provision opportunities and compliance requirements of business to be able to secure contracts • encourage local businesses to meet the requirements of the project for supply contracts • develop relevant networks to assist qualified local and regional businesses to tender for the provision of goods and services to support the project.	Detailed design Construction	All locations
Cumulative				
CI1	Occurrence of cumulative impacts	Consultation with construction contractors, proponents, councils and affected landowners as required to coordinate construction staging/timing with the aim of minimising and managing potential cumulative impacts. This will include: • identifying the potential for cumulative impacts associated with concurrent construction programs (e.g. shared access routes, work sites, resources) • developing mitigation measures to mitigate cumulative impacts as they arise.	Detailed design Construction	All locations

