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Appendix B Updated mitigation measures

Appendix B Updated mitigation measures

Table B-1 details the mitigation measures that would be implemented to avoid or minimise potential impacts from the amended project. Mitigation measures to avoid or minimise potential biodiversity impacts are provided in Appendix B.1 (Updated biodiversity mitigation measures).

To illustrate the changes to mitigation measures between the EIS and the amended project, text that has been removed is shown in ~~**strike through**~~ and new text is show in **bold green coloured** text.

Table B-1 Summary of proposed mitigation measures

Reference	Impact	Mitigation measure	Timing	Relevant location
Aboriginal heritage				
AH1	Impact to Aboriginal sites	The Aboriginal community consultation process for this project will continue until completion of construction.	Detailed design and construction	All locations
AH2	Impact to Aboriginal sites	The finalisation of the project design and construction methodology, and associated final disturbance areas, will be developed to avoid harm to sites of moderate or above Aboriginal heritage significance as far as ~~**practical**~~ **practicable**. The objective is to further reduce potential impacts through **considered placement of** transmission line structure location**s** and design refinement of proposed infrastructure and **the associated** construction methodology. Avoidance and minimisation of harm to sites and **potential archaeological deposits (**PADs**)** will be prioritised.	Detailed design	All locations
AH3	Impact to Aboriginal sites in unassessed areas of the project footprint	Additional assessment will occur in accordance with the *Code of Practice for Archaeological Investigations of Aboriginal Objects in NSW* (2010a) for areas where ground disturbing activities are required in locations outside of the previously assessed area. Where required, additional heritage surveys will be carried out with the **Registered Aboriginal Parties (**RAPs**)** prior to ground disturbing activities occurring in any such areas ~~**(including areas where only visual inspection has been undertaken)**~~. If no Aboriginal objects are found or if Aboriginal objects are found and they would not be impacted, then a letter report will be prepared by an archaeologist that documents the findings and gives clearance to proceed.	Detailed design **and construction**	All locations ~~**(outside of the previously assessed area)**~~

Reference	Impact	Mitigation measure	Timing	Relevant location
		Where Aboriginal objects, scarred trees or areas of potential archaeological deposits (PADs) are located in unassessed areas and would be directly impacted, ~~addendum~~ report/s ~~to~~ ~~*Technical Report 2 – Aboriginal Cultural Heritage Assessment Report*~~ will be prepared. The report/s will: • detail findings of the survey activities • detail where test excavation is required • outline any additional mitigation strategies beyond those required • be presented to the RAPs for comment. Final reports will be provided to RAPs and to Heritage NSW for their information prior to the commencement of ground disturbing activities in these locations.		
AH4	Impact to Aboriginal sites of cultural value	Identified Aboriginal sites of cultural value, will be avoided by the project where feasible. Further consideration of the potential to avoid direct or indirect impacts on the identified Aboriginal sites of cultural value will be carried out during detailed design.	Detailed design	Aboriginal sites of cultural value
~~AH5~~	~~Impact to Aboriginal sites – PADs~~	~~An archaeological subsurface test excavation program will be carried out in parts of any PADs where project activities would have direct impact and a test excavation program has not already been completed in the area of impact. Direct impacts include grading of tracks and construction work sites, excavation for transmission line structure construction and tree removal that includes the root ball.~~	~~Detailed design~~	~~PAD areas not already tested~~
~~AH6~~ AH5	Impacts ~~to~~ from construction of transmission line structures, new waterway crossings, worker accommodation facilities and construction compounds in areas of high and moderate Aboriginal archaeological sensitivity (subsurface archaeological sensitivity model)	Where detailed design confirms there would be direct impacts from the construction of transmission line structures, new waterway crossings, worker accommodation facilities and construction compounds in areas with high and moderate archaeological sensitivity that have not been previously subject to test excavations, prior to impact a desktop assessment and site inspection will be completed to determine the level of previous impact from past ground disturbing activities and to determine if the area contains a potential archaeological deposit (PAD). If it is determined that the area contains a PAD and has undergone low previous impact then an archaeological subsurface test excavation program will be carried out in the area of direct impact. ~~Direct impacts include grading of tracks and construction areas, excavation for transmission line structure construction and tree removal that includes the root ball.~~	Detailed design and construction	Areas of high and moderate sensitivity not already tested where project activities would have direct impact

Reference	Impact	Mitigation measure	Timing	Relevant location
~~AH7~~	~~Impacts to areas of moderate Aboriginal archaeological sensitivity~~	~~A field and desktop assessment will be completed in areas assessed as having moderate archaeological sensitivity where detailed design has confirmed project activities would have direct impact and a test excavation program has not already been completed in the area of impact. This is to determine the level of previous impact from past ground disturbing activities. If it is determined that the area has undergone low previous impact then an archaeological subsurface test excavation program will be carried out. Direct impacts include grading of tracks and construction areas, excavation for transmission line structure construction and tree removal that includes the root ball.~~	~~Detailed design~~	~~Areas of moderate sensitivity not already tested where project activities would have direct impact~~
AH6	Impacts from the construction of new or upgraded access tracks in areas of high and moderate Aboriginal archaeological sensitivity (model for predicting surface artefact scatters)	Following any stripping and grading works and prior to placement of any fill or road base material for construction of the access track, a site walkover will be completed and any surface artefacts will be recorded and moved off of the track. The artefact locations will be recorded as sites and then entered on the AHIMS database. The recording will include a record of their original location. Artefacts may be grouped into sites and the date provided to AHIMS accordingly.	Construction	Areas of high and moderate sensitivity not already tested where project activities would have direct impact
AH7	Tree removal that includes the root ball in areas of high and moderate Aboriginal archaeological sensitivity (model for predicting surface artefact scatters)	Following the root ball removal in areas assessed as having high and moderate sensitivity, the area will be inspected and any surface artefacts will be recorded and moved away from the area of impact. The artefact locations will be recorded as sites and then entered on the AHIMS database.	Construction	Areas of high and moderate sensitivity not already tested where tree root ball removal would be undertaken

Reference	Impact	Mitigation measure	Timing	Relevant location
AH8	Impact to Aboriginal sites – Modified/**scarred** trees	Harm to modified trees ~~**(including those of cultural significance)**~~ **and trees of cultural significance** will be avoided where possible through design development and construction planning. Modified trees will only be removed to directly facilitate construction of permanent infrastructure and/or to meet Vegetation Clearance Requirements for the transmission line. If the removal of a scarred tree (a type of modified tree)**, or a tree of cultural significance, that has been assessed to be an Aboriginal object** cannot be avoided, the tree will be subject to 3D scanning. ~~**Reports will be provided to RAPs and Heritage NSW. Following this, the scarred trunk will be salvaged.**~~ **Prior to any impacts to modified or scarred trees, or a tree of cultural significance, consultation will be undertaken with the Registered Aboriginal Parties (RAPs) on salvaging the scarred tree trunk.**	Detailed design	Modified/**scarred** trees
AH9	Impact to Aboriginal sites – Isolated Finds, Artefact scatters and **potential archaeological deposits** (PADs) **(moderate or high archaeological significance)**	All portions of artefact scatters and isolated finds **of moderate or high archaeological significance** that will be directly impacted will require surface collection ~~**and salvage**~~ **and/or movement** prior to construction commencement in those areas. ~~**Additionally, based on the outcomes of the test excavations, salvage excavations will occur in accordance with the Code of Practice.**~~ **Where test excavations identify archaeological deposits of moderate or high archaeological significance which cannot be avoided, salvage excavations will occur.**	Detailed design **and construction**	Directly impacted sites and PADs
AH10	Indirect impact to adjacent heritage items	The locations of known Aboriginal heritage sites within and adjacent to the project footprint and the relevant protocols to avoid and manage any potential harm to the items will be communicated through the Heritage Management Plan to all relevant construction workers prior to construction commencing in that area.	Detailed design and construction	Transmission line
AH11	Impact to Aboriginal sites	Cultural heritage awareness training will be carried out for all construction workers working on the project prior to the construction workers participating in construction activities. The training shall cover sites of heritage significance within and adjacent to project work sites and protocols that must be complied with to minimise and manage potential impacts to those sites.	Construction	All locations
AH12	Unexpected finds	If at any time during construction, any ~~**items of potential Aboriginal heritage archaeological significance**~~ **unanticipated Aboriginal objects (which are inconsistent with approved heritage impacts in T*echnical Report 2 – Revised Aboriginal Cultural Heritage Assessment Report*)**, or human remains are discovered, they will be managed in accordance with an unexpected finds protocol that is aligned with the protocol in Attachment 6 of *Technical Report 2 – **Revised** Aboriginal Cultural Heritage Assessment Report*.	Construction	All locations

Reference	Impact	Mitigation measure	Timing	Relevant location
AH13	~~Retrieved~~ Salvaged archaeological material	The long-term management of ~~Retrieved~~ salvaged archaeological materials will be ~~stored in appropriate facilities confirmed~~ determined in consultation with the Registered Aboriginal Parties (RAPs).	Construction	As relevant
AH14	Post construction impacts to heritage items by maintenance activities	Sites of heritage significance that would remain in-situ within the transmission line easement, at substation locations and along access tracks will be mapped and recorded within GIS systems managed by Transgrid to reduce the potential for inadvertent impacts which may occur during maintenance activities.	Operation	Transmission line, substations and access tracks
AH15	**Impacts from the upgrade of existing access track through Derringullen Creek Women's Site**	**If impacts to the Derringullen Creek Women's Site cannot be avoided during further detailed design and construction planning, further consultation with the relevant Registered Aboriginal Party (RAP) will be undertaken to seek guidance around minimising and managing the extent of impacts.**	**Detailed design and construction**	**Derringullen Creek Women's Site**
Non-Aboriginal heritage				
NAH1	Unexpected finds	If at any time during construction, any items of potential historic heritage archaeological significance, or human remains are discovered, they will be managed in accordance with an unexpected finds protocol that is aligned with the protocol in *Technical Report 3 – Historic Heritage Impact Assessment Report*.	Construction	All locations
NAH2	Impact to unsurveyed areas	Additional assessment will occur in areas where ground disturbing activities are required in locations outside of the previously surveyed heritage survey area. Additional heritage surveys will be carried out prior to ground disturbing activities occurring in any such areas (including areas ~~which were previously inaccessible and/or~~ where only visual inspection has been undertaken). ~~Whether or not~~ If no historic items are found or if historic items are found and they would not be impacted, then a letter report will be prepared by a heritage specialist ~~for all additional surveyed areas~~ that documents the findings and gives clearance to proceed. Where historic items are located and would be impacted, a ~~draft survey addendum report(s) to this~~ report will be prepared for the survey areas. The report(s) will: • detail findings of the survey activities • detail where test excavation is required • outline any additional mitigation strategies beyond those required in Appendix B (Updated mitigation measures) of the Amendment Report. Final reports will be provided to Heritage NSW for their information prior to the commencement of ground disturbing activities in these locations.	Detailed design	All locations (outside of the previously surveyed heritage survey area)

Reference	Impact	Mitigation measure	Timing	Relevant location
NAH3	Post construction impacts to heritage items	Features/items of heritage significance that would remain in-situ within the transmission line easement and along access tracks will be mapped and recorded within GIS systems managed by Transgrid to reduce the potential for inadvertent impacts to occur during maintenance activities.	Operation	All permanent work
Land use and property				
LP1	Direct land use impacts	The location of infrastructure, work sites and access tracks (temporary and permanent) will be confirmed in consultation with landowners. Where permanent tracks are required, a single access track will be designed to serve both temporary and permanent purposes, where possible.	Detailed design and construction	All locations
LP2	Property impacts	A property management plan will be developed for directly impacted properties in consultation with landowners and stakeholders. The property management plans will outline the protocols that will be implemented to address landowner concerns during construction. This may include: • the process for rectification of any damage to property infrastructure caused by construction • the process for **restoration or** rehabilitation and stabilisation of disturbed areas following the completion of construction • measures to minimise disruption to agricultural practices during construction • any fencing and gate requirements • specific biosecurity protocols.	Detailed design and construction	All locations
LP3	Agricultural impacts	Alternative technologies which could enable weed control close to the transmission lines will be considered.	Detailed design and construction	All locations
LP4	Biosecurity	Biosecurity controls will be implemented to minimise the risk of off-site transport or spread of disease, pests or weeds. Controls will be in accordance with **a Biosecurity Management Plan developed as part of the Biodiversity Management Plan to be implemented during construction, and** Transgrid's *Biosecurity Procedure and Biosecurity Environmental Guidance Note* **to be implemented during operation,** and **will** include development of specific controls if high biosecurity risks are identified. Appropriate measures will be implemented with respect to foot and mouth disease to control any risk of introduction via the project. The specific controls applicable to a property will be identified in consultation with the affected landowner. The effectiveness of these controls will be monitored in a manner and time interval consistent with the level of risk on each property. In the event of new infestations of notifiable weeds as a result of construction activities, the relevant control authority will be notified as per *Biosecurity Act 2015* (NSW) and Biosecurity Regulation 2017.	Construction and operation	All locations

Reference	Impact	Mitigation measure	Timing	Relevant location
LP5	Access impacts	Management of access on private landowner properties required for access to infrastructure for maintenance, including opening and closing of gates, will be done in accordance with landowner requirements.	Operation	Transmission line
LP6	GPS impacts	If adverse effects on agricultural precision farming (using GPS) is reported within 12 months of operation, practical rectification measures (including signal boosting equipment or antenna enhancement) will be considered. This will be carried out in consultation with the relevant landowners.	Operation	Transmission line
LP7	**Stringing transmission line across Pejar Dam**	**Should boats be used to string transmission lines across Pejar Dam, they will be:** • **operated in a manner that minimises wash and bank erosion** • **appropriately maintained, and include spill containment kits** • **clean and free of visible debris and biological material before entering the water.** **Should drones or helicopters be used to string transmission lines across Pejar Dam, consultation will be undertaken with Goulburn Mulwaree Council to determine if further mitigation measures are required.**	**Detailed design and construction**	**Pejar Dam**
LP8	**Consultation regarding aerial farming**	**Consultation will be undertaken with relevant landowners who utilise aerial farming operations to identify appropriate mitigation arrangements (where feasible) such as the installation of aerial warning markers on the transmission lines.**	**Construction and operation**	**Transmission line**
LP9	**Impacts to utilities and services**	**The location of all services and utilities within the construction area will be confirmed during detailed design, and any required protection or relocation will be designed in consultation with utility providers.**	**Detailed design**	**All locations**
Economic				
EC1	Local employment	A Local Industry Participation Plan, an Australian Industry Participation Plan, a Workforce and Workforce Development Plan and an Aboriginal Participation Plan will be prepared and implemented.	Detailed design and construction	All locations
EC2	Potential business impacts	Liaison will occur with local councils, interest groups, economic development organisations, local chambers of commerce and State government to: • notify local businesses of the goods and services required by the project, service provision opportunities and compliance requirements of businesses to secure contracts • encourage and support local business in meeting the requirements of the project for supply contracts • assist qualified local businesses to tender for provision of goods and services to support the construction of the project, where possible.	Detailed design and construction	All locations

Reference	Impact	Mitigation measure	Timing	Relevant location
Social				
~~**SO1**~~	~~**Accommodating temporary construction workers**~~	~~**Prepare and implement a Worker Accommodation Strategy for the construction workers during the construction period.**~~	~~**Detailed design and construction**~~	~~**All locations**~~
SO2	Impacts on local services and social cohesion from introduction of temporary workers	Information will be provided to the construction workers that includes: • information on community services and recreation facilities, events and tourism activities • details on how to access health services including dedicated telehealth services organised by Transgrid • a company contact if help is needed • Code of Conduct to minimise the incidence of risk drinking and drug behaviours.	Detailed design	All locations
SO3	Impacts on emergency services	Emergency services will be regularly updated on work plans and access routes in the event of an emergency.	Construction	All locations
SO4	Opportunities for long-term ~~investment~~ **community benefit**	Any opportunities for appropriate long-term use for the worker accommodation facilities **(or component parts thereof)** will be identified in consultation with councils **and the relevant landowner/s**.	Detailed design **and construction**	Worker accommodation ~~**facility**~~ **facilities**
SO5	**Impacts on local services from introduction of temporary workers**	**Each worker accommodation facility will include appropriate food and catering facilities, fitness and recreational facilities, parking spaces and first aid facilities.**	**Detailed design and construction**	**Worker accommodation facilities**
Landscape character and visual impact				
LV1	Vegetation retention	Opportunities for the retention and protection of existing trees within the disturbance area ~~**would**~~ **will** be identified during detailed construction planning. Identified trees of high conservation significance ~~**would**~~ **will** be retained and protected where practicable.	Detailed design	All locations
LV2	Vegetation retention	Temporary and permanent access **tracks** ~~**would**~~ **will** be designed to minimise vegetation removal, changes to landform, and visual impacts where practicable.	Detailed design	All locations

Reference	Impact	Mitigation measure	Timing	Relevant location
LV3	Construction lighting	Lighting at construction compounds and worker accommodation ~~facility would~~ facilities will be designed and operated in accordance with *AS 4282 2019 Control of the obtrusive effects of outdoor lighting*.	Detailed design and construction	Construction compounds and worker accommodation ~~facility~~ facilities
LV4	Vegetation protection	The Tree Protection Zone of retained trees within or immediately adjacent to the disturbance area ~~would~~ will be managed in accordance with *AS 4970-2009 Protection of Trees on Development Sites* where practicable to minimise the impact of the works on the long-term health of these trees.	Detailed design	All locations
LV5	Visual changes near residences	For residences where the project is predicted to have a moderate to high visual impact, opportunities for screening vegetation ~~would~~ will be investigated. Appropriate visual screening or other options (for example planting of vegetation) ~~would~~ will be confirmed in consultation with the affected landowner and implemented where practicable. Vegetative screening would be maintained by the landowner.	Detailed design, construction and operation	Transmission line
LV6	Operational lighting	Lighting at the substations ~~would~~ will be designed and operated in accordance with *AS/NZS 4282:2019 Control of the obtrusive effects of outdoor lighting*.	Operation	Substations
LV7	**Dulling of transmission line structures**	**Transmission line structures will have a pre-dulled steel finish to minimise the potential for glare and reflection.**	**Detailed design and operation**	**All transmission line structures**
LV8	**Visual changes near residences**	**Transgrid will continue to work with landowners and neighbours to avoid, minimise and mitigate impacts, as well as advocate strongly for a consistent, fair, NSW Government policy on visual impacts to neighbouring properties.**	**Detailed design, construction and operation**	**Transmission line**
Noise and vibration				
NV1	Construction noise	Where receivers are predicted to be noise affected and near construction compounds or fixed work ~~areas~~ sites with long durations (ie several months), path control, such as hoarding or earth bunds will be investigated. Practical measures will be implemented where required. Positioning of site structures will also be considered to act as barriers between noisy work and receivers where practical.	Detailed design and construction	• ~~Wagga 330 kV substation compound (C01)~~ • ~~Memorial Avenue compound (C14)~~ • ~~Bowmans Lane compound (C15)~~

Reference	Impact	Mitigation measure	Timing	Relevant location
				• ~~Tumbarumba accommodation facility (AC1)~~ Construction compounds and worker accommodation facilities
NV2	Construction noise	An out-of-hours work protocol that details how the project will identify, assess and approve out-of-hours work outside standard construction hours that are likely to generate noise levels that exceed the relevant noise management levels at sensitive receivers 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 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). The out-of-hours work protocol will not apply to the operation of the worker accommodation ~~facility~~ facilities.	Detailed design and construction	All locations
NV3	Construction noise and vibration	~~If blasting is required, a~~ A Blast Management Plan will be developed to minimise the potential for airblast overpressure and vibration impacts. Maximum instantaneous charge calculations will be ~~carried out~~ undertaken for specific ~~sites where blasting is required~~ locations within the potential controlled blasting areas. Individual blast designs will be based on meeting the criteria rather than restrictions on maximum instantaneous charge. All ~~blasts~~ controlled blasting, including initial controlled trial ~~blasts~~ blasting will be monitored to obtain data which can be used to confirm site constants and compliance with controlled blasting criteria. Landowner notification and consultation requirements will be identified in the Blast Management Plan.	Detailed design and construction	All locations

Reference	Impact	Mitigation measure	Timing	Relevant location
NV4	Construction noise	Where construction is likely to result in exceedances of **noise monitoring levels (**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 • 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 out-of-hours where noise impacts are predicted • turn off machinery when not in use • confirm equipment is maintained in accordance with manufacture**r**'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 ***Construction Noise and Vibration Guideline*** **(Transport for NSW, 2023) (**CNVG**)** additional mitigation measures such as notifications, verification, and respite where appropriate.	Construction	All locations
NV5	Construction noise	Monitoring will be carried out for noise intensive activities that have the potential to cause noise exceedances at sensitive receivers, to confirm that actual levels are consistent with the predictions and that appropriate mitigation measures have been implemented.	Construction	All locations

Reference	Impact	Mitigation measure	Timing	Relevant location
NV6	Construction noise	All construction vehicle movements will adhere to the following measures: • out-of-hours 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 roads/flight paths will be located as far as possible 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	All locations
NV7	Construction 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 • 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.	Construction	All locations
NV8	Operational substation noise	The design and layout of the proposed Gugaa 500 kV substation will comply with the ***Noise Policy for Industry*** **(NSW EPA, 2017) (**NPfI**)** criteria. The design will consider the following measures to mitigate potential noise impacts: • positioning of transformer barriers • selection of equipment with consideration of sound power levels • acoustic modelling of noise levels at surrounding receivers from all noise-generating substation equipment.	Detailed design and operation	Proposed Gugaa 500 kV substation

Reference	Impact	Mitigation measure	Timing	Relevant location
NV9	Operational transmission line noise	~~**Receivers potentially noise affected by operational transmission line noise will be reviewed once the final project transmission line route, conductor arrangement and any property acquisitions are known.**~~ **A detailed operational noise assessment will be undertaken based on the final project transmission line route, conductor arrangement and confirmation of any property acquisitions, to confirm potentially noise affected receivers.** For each residence where potential operational noise levels are predicted to exceed project trigger levels, noise monitoring to confirm actual operational noise levels ~~**would**~~ **will** be carried out: • at representative locations within six months of the commencement of operation; and • at the request of the landowner of the residence at any time within two (2) years after the commencement of operation. The noise monitoring will occur during weather/atmospheric conditions conducive to generating the corona effect. For residences where the monitoring identifies corona discharge noise levels above 35 dB(A) LAeq, 15min at the reasonably most affected point of the residence, 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 within 12 months.	Detailed design and operation	Transmission lines
NV10	**Construction aircraft noise**	**Management measures will be implemented to minimise aircraft noise at sensitive receivers where practicable and appropriate. Measures will include (but are not limited to):** • **Carrying out consultation to notify nearby sensitive receivers of upcoming work involving aircraft. This will include scheduled use of helipads within construction compounds and combined worker accommodation facilities and construction compounds, flight paths outside of the project footprint and stringing or other work within the transmission line corridor. Notification will include scheduled dates, locations, indicative hours and a description of the proposed work.** • **Prioritising use of potential helipad locations at the construction compounds and combined worker accommodation facilities and construction compounds with the maximum distance offset from sensitive receivers.** • **Varying flight paths between helipads and the transmission line corridor to avoid repeated helicopter noise at sensitive receivers.** • **Operating aircraft in accordance with Airservices Australia (ASA) *Environmental Principles and Procedures for Minimising the Impact of Aircraft Noise* (2002) and the *Helicopter Association International (HAI) Fly Neighbourly Guide*.**	**Construction**	**All locations**

Reference	Impact	Mitigation measure	Timing	Relevant location
Soils, geology and contamination				
SC1	Salinity	Prior to ground disturbance within areas mapped as moderate to high risk saline soils, an inspection will be undertaken for the presence of saline soils. Areas of known or suspected salinity 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, 2008c) and the *Salinity Training Manual* (DPI, 2014) to manage salinity impacts. Erosion controls will be implemented in accordance with ~~**The *Blue Book***~~ ***Managing Urban Stormwater – Soils and Construction, Volume 1*** (Landcom 2004)**, and Volumes 2A (DECC, 2008a) and 2C (DECC, 2008b), commonly referred to as the 'Blue Book'.** Prior to construction, materials will be selected to withstand acidic or high saline soil and groundwater environment (where applicable). During construction, existing areas of waterlogging and poor drainage will be avoided, where possible, when building access tracks and permanent structures.	Detailed design and construction	All locations
SC2	Soil contamination	Disturbance to **areas of environmental concern (**AECs**)** identified as having a moderate risk or greater will be avoided or minimised where practicable during construction. Where disturbance cannot be avoided, potential impacts will be minimised during finalisation of the design and construction methodology, where practicable. AECs identified as having a moderate risk that will be disturbed will be further assessed prior to construction. The investigations will be undertaken in accordance with the assessment of site contamination NEPM 2013. Any remediation required for the project will be undertaken based on a site-specific Remedial Action Plan. The Remedial Action Plan will define remedial goals and objectives, performance criteria for remedial effort and remediation methodology. A validation report will be prepared after remedial effort and be in accordance with the NSW EPA *Guidelines for Consultants Reporting on Contaminated Land* (NSW EPA, 2020).	Detailed design and construction	All locations
SC3	Acid sulfate soils and rocks	Prior to ground disturbance in areas of potential acid sulfate soil or rock occurrence, testing will be carried out to determine the presence of actual and/or potential acid sulfate soils or rocks. If acid sulfate soils or rocks are encountered, they will be managed in accordance with the *Acid Sulfate Soil Manual* (ASSMAC, 1998).	Detailed design and construction	All locations

Reference	Impact	Mitigation measure	Timing	Relevant location
SC4	Soil contamination – chemical spills and runoffs	All chemicals, fuels or other hazardous substances will be stored in accordance with the supplier's instructions and relevant legislation, Australian Standards and applicable guidelines. Environmental spill kits containing spill response materials suitable for the work being undertaken will be available with extras available to be carried in vehicles. A spill response procedure will be developed and implemented. All staff will be trained in emergency spill procedures.	Construction and operation	All locations
SC5	Naturally Occurring Asbestos	**Detailed design will consider the risk of encountering naturally occurring asbestos (NOA) within the project footprint. Consideration may include movement of footings to areas with less risk of NOA, footing design changes or minimising rock blasting and ripping where practicable.** An Asbestos Management Plan will be prepared in accordance with the NSW Government Code of Practice *How to Manage and Control Asbestos in the Workplace* (SafeWork, 2020). The Asbestos Management Plan will include the following measures: • management or isolation of areas mapped as medium to high risk of NOA, where direct disturbance of NOA is confirmed to be required for project construction works • placement of suitable signage around the work areas • list of appropriate personal protective equipment, including Respiratory Protective Equipment • implementation of dust suppression controls including wetting surfaces, covering disturbed surfaces and the use of sealed air-conditioned vehicles to minimise potential asbestos impacts to workers • decontamination of the workers' coveralls, personal protective equipment, equipment and work site • procedures for the disposal of NOA material or waste, if required • implementation of air monitoring using pumps and sample filter grid cowls for asbestos fibres and dusts if it is suspected that exposure to NOA dust during work might exceed safe levels of airborne asbestos. The air monitoring pumps, and reporting, must be undertaken by a licensed asbestos assessor.	Detailed design and construction	All locations
SC6	Soil contamination	The contractor will undertake compliance monitoring, keep a record of waste volumes and waste types and keep a stockpiles register where excavations and stripping of surface soil contamination occurs. The contractor will keep all records during construction for waste disposal and for the importation of materials such as engineering fill and excavated natural materials (ENM) or virgin excavated natural materials (VENM) soils. Engineering fill materials for use on site will be validated to confirm they meet the classification of VENM or ENM prior to being transported to site.	Construction	All locations

Reference	Impact	Mitigation measure	Timing	Relevant location
SC7	Unexpected contamination	The discovery of any unexpected contamination during construction will be managed in accordance with an Unexpected Contaminants Finds Protocol which will be prepared prior to construction.	Construction	All locations
Surface water and groundwater				
SW1	Water quality, erosion risk – erosion and sedimentation	An **Erosion and Sediment Control Plan (**ESCP**)** will be developed and implemented in consultation with a Certified Professional in Erosion and Sediment Control during construction for activities and areas that are considered higher risk. The plan 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), and Volumes 2A (DECC, 2008a) and 2C (DECC, 2008b), commonly referred to as the 'Blue Book' • *Best Practice Erosion and Sediment Control* (IESCA, 2008) • Transgrid's Environmental Guidance Notes • *Guidelines for controlled activities* (Riparian corridors (DPE, 2022d) and *Watercourse crossings* (DPE, 2022e)).	Construction	All locations
SW2	Water quality and geomorphology	~~**Design**~~ **Consideration** of scour protection will be included for any infrastructure that is within a waterway ~~**channel**~~. The design will incorporate features that minimise impact on flow conditions and natural functioning of the waterway, where ~~**possible**~~ **feasible and reasonable**. For work within or near waterways consider and adhere to the following guidelines • ~~**Guidelines for controlled activities (Riparian corridors (DPE, 2022c) and Watercourse crossings (DPE, 2022b))**~~ • ***Guidelines for Controlled Activity - In-stream works* (DPE, 2022f)** • ***Guidelines for Controlled Activity - Watercourse crossings* (DPE, 2022e)** • *Why Do Fish Need to Cross the Road? Fish Passage Requirements for Waterway Crossings* (DPI, 2003) • *Policy and Guidelines for Fish Habitat Conservation and Management* (DPI, 2013).	Detailed design and construction	Waterways

Reference	Impact	Mitigation measure	Timing	Relevant location
SW3	Surface and groundwater quality - monitoring	Water quality monitoring will be implemented to establish baseline water quality conditions in waterways of high sensitivity that may be impacted by nearby construction and to detect any 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 locations will include: • at a minimum two monitoring locations (one located upstream and one downstream of the transmission line crossing) for waterways with a Strahler 4th **stream** order or higher within the Sydney Drinking Water Catchment where construction activities within 200 metres of the waterway will be carried out and could result in impacts • monitoring for total dissolved solids, total suspended solids, total nitrogen, and total phosphorus.	Detailed design and construction	All locations
SW4	Water supply	Water supply ~~**options and**~~ 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 Licences(s) (WAL(s)) and Water Supply Works approval(s).**	Detailed design and construction	All locations
SW5	Groundwater flow paths, levels and users	Alternative construction methodologies will be investigated and implemented as required to minimise impacts to **groundwater dependent ecosystems (**GDEs**)** and registered groundwater bores, if identified to be directly impacted during detailed design. Make good provisions will need to be made to the groundwater user(s) for bores that will be affected **in line with the minimal impact criteria listed within the NSW Aquifer Interference Policy**. **Where groundwater dewatering is required, the following will be conducted:** • **dewatering assessment (including dewatering volume estimates)** • **dewatering procedures will be included in the Soil and Water Management Plan (SWMP) in line with the minimal impact criteria listed within the NSW Aquifer Interference Policy, relevant water sharing plans (WSPs) and licencing requirements where relevant** • **Water Supply Works Approval (where needed)** • **Water Access Licence (WAL) (if dewatering volumes exceed 3 ML/year).**	Detailed design and construction	All locations

Reference	Impact	Mitigation measure	Timing	Relevant location
SW6	**Surface water and groundwater**	**Where controlled blasting is required, a suitably qualified blasting specialist will be engaged to carry out a detailed blasting assessment and trial blasts (if required) to determine blasting design and site-specific parameters.** **The blasting assessment should identify measures to limit vibrations to the recommended "safe" levels (defined in *AS 2187.2-2006 Explosives - Storage and use*), limit rock mass damage, avoid "over-blasting" and consider and mitigate potential impacts to:** • **groundwater dependent ecosystems** • **groundwater users** • **surface water bodies**.	**Detailed design and construction**	**Controlled blasting locations**
Hydrology and flooding				
HF1	Drainage design and stormwater management	Suitable on-site drainage design and stormwater management strategies and plans will be implemented to limit adverse flood impacts on surrounding properties during construction.	Detailed design and construction	All construction compounds **and combined worker accommodation facilities and construction compounds**
HF2	Impact of earthworks to establish new access tracks on flooding	The detailed design will consider the potential impacts on flooding associated with earthworks for new access tracks and the need for cross drainage culverts or bridge structures. The cross drainage infrastructure will be sized appropriately to minimise adverse flood impacts**.**	Detailed design	Access tracks
HF3	Impact on flooding at **all construction compounds and combined worker accommodation facilities and construction compounds** ~~**the Snowy Mountains Highway construction compound (C02)**~~	**Where possible,** overland flow **paths** up to the 5% AEP event **for construction compounds and 2% AEP for combined worker accommodation facilities and construction compounds** ~~**across the southern extent of the Snowy Mountains Highway compound (C02) is**~~ **are** to remain unobstructed from bulk filling, site infrastructure and/or stockpiling. Selective placement of sensitive or vulnerable infrastructure (eg electrical equipment, buildings, machinery, stockpiles, pedestrianised areas etc) will be considered in flood prone areas. **Where bulk filling of flood prone land is required, a flood impact assessment is required to demonstrate the impact of proposed works with consideration of mitigation measures to minimise any downstream impacts.**	Detailed design	**All construction compounds and combined worker accommodation facilities and construction compounds** ~~**Snowy Mountains Highway compound (C02)**~~

Reference	Impact	Mitigation measure	Timing	Relevant location
HF4	Impact on flooding and drainage at construction compounds**, combined worker accommodation facilities and construction compounds** and Bannaby 500 kV substation	**Where possible,** existing drainage and overland flowpaths will be maintained at ~~**the Maragle substation compound (C05), Gregadoo Road compound (C06)**~~ **construction compounds, combined worker accommodation facilities and construction compounds** and Bannaby 500 kV substation. Where filling is required, suitable drainage design and stormwater management strategies and plans will be implemented to limit adverse flood impacts on surrounding properties. Selective placement of sensitive or vulnerable infrastructure (eg electrical equipment, buildings, machinery, stockpiles, pedestrianised areas etc) will be allocated to areas away from drainage lines. On site detention will be incorporated where increases in site stormwater discharges exceed predevelopment flows**,** and will be designed in accordance with ~~**the Blue Book**~~ ***Managing Urban Stormwater – Soils and Construction, Volume 1*** (Landcom, 2004)**, and *Volumes 2A* (DECC, 2008a) and *2C* (DECC, 2008b), commonly referred to as the 'Blue Book'**.	Detailed design and construction	Maragle substation compound (C05), ~~**and**~~ **Amended** Gregadoo Road compound (C06)**,** ~~**and**~~ Bannaby 500 kV substation**, Amended Bannaby 500 kV substation compound (C12), Gadara Road compound (C19), Adjungbilly accommodation facility and compound (AC04), Yass accommodation facility and compound (AC05), Crookwell accommodation facility and compound (AC06), Ardrossan Headquarters Road compound (C17), Ellerslie Road compound (C21).**
HF5	Impact on flooding and drainage at Gugaa 500 kV substation	Suitably sized cut-off drains and cross drainage culverts will be designed and constructed to maintain existing flood behaviour around and downstream of the **proposed Gugaa 500 kV** substation footprint**, unless otherwise approved by NSW Department of Planning, Housing and Infrastructure**.	Detailed design and construction	Proposed Gugaa 500 kV substation

Reference	Impact	Mitigation measure	Timing	Relevant location
Hazards and risks				
HR1	Protection zones and landscaping	**Asset protection zones (**APZs**)** will be managed in accordance with *Planning for Bush Fire Protection: A guide for councils, planners, fire authorities and developers requirements* (NSW RFS, 2019) (PBP), and associated criteria.	Detailed design, construction and operation	Substations and project buildings within construction compounds and the temporary **worker** accommodation ~~**facility**~~ **facilities**
HR2	Easement management	Vegetation within the proposed transmission line easement will be managed in accordance with Transgrid's existing vegetation management standards consistent with the clearance requirements principle identified in *AS/NZS7000:2016 Overhead Line Design*.	Detailed design, construction and operation	Transmission line easements
~~**HR3**~~	~~**Ancillary buildings**~~	~~**The final location of the telecommunications hut will need to be assessed with a visual inspection to confirm potential bushfire risk.**~~	~~**Detailed design**~~	~~**Telecommunications hut**~~
HR4	Access	Access to substations and project buildings within the bushfire survey area will be established in accordance with: • *Planning for Bushfire Protection 2019* requirements (NSW RFS, 2019) criteria • Access requirements will be in accordance with *NSW Fire Trail Standards* (NSW RFS, 2016) and *Fire Trail Construction and Design Maintenance Manual* (Soil Conservation Science, 2017).	Construction and operation	Access tracks to substations and project buildings within bushfire survey areas
HR5	Bush Fire Emergency Management and Evacuation Plan (BFEMEP)	The project will be designed and constructed in accordance with a **Bush Fire Emergency Management and Evacuation Plan (**BFEMEP**)**. The BFEMEP will be prepared by a suitably qualified person and will include: • Bushfire Emergency Evacuation Plan • Bush Fire Risk Management Plan (BRMP) protocols during construction, considering activities during days with fire danger rating 'high' or greater • bushfire response and notification measures to report fires at the earliest opportunity • bushfire mitigation measures including maintaining **asset protection zones (**APZs**)** and mechanisms for the handling and use of any dangerous goods • bushfire risk induction and training for personnel, including risks and management measures associated with construction equipment and activities • fire reporting, emergency areas, on-site refuges, and evacuation procedures and is to be consistent with *Development Planning: A guide to developing a bush fire emergency management and evacuation plan* (NSW RFS, 2014). The BFEMEP will be consistent with relevant Australian standard and development plans and guides.	Detailed design**, and** construction ~~**and operation**~~	All locations

Reference	Impact	Mitigation measure	Timing	Relevant location
		For the Special Fire Protection Purpose (SFPP), the BFEMEP will include planning for the early relocation of occupants in the event of a potential bushfire or other emergency situation. A copy of the BFEMEP will be provided to the Local Emergency Management Committee for its information prior to occupation of the development.		
HR6	Aviation safety	The detailed design of the transmission line structures with coordinates and elevations will be provided to relevant stakeholders (including Airservices Australia, Department of Defence**, Aerial Application Association of Australia, Forestry Corporation of NSW** and ALA owners along the transmission line route). The notification will be made as early as possible.	Detailed design	All locations
HR7	Aviation safety	Consultation with **Civil Aviation Safety Authority (**CASA**)** will be undertaken to confirm whether obstacle lighting and marking of the transmission line structures are required. The provision of markers on **transmission lines** ~~**cables**~~ and **transmission line** structures ~~**within three nautical miles (5.6 kilometres) of the final transmission line route**~~ will be considered with the appropriate stakeholders.	Detailed design and construction	Transmission line route between Wagga 330 kV substation and Gugaa 500 kV substation
HR8	Aviation safety	Approval to operate construction cranes that infringe the **obstacle limitation surface (**OLS**)** for Wagga Wagga Airport will be obtained in advance of the proposed activity **at the transmission line between Wagga 330 kV substation and Gugga 500 kV substation**. Wagga Wagga Airport management **and Aerial Application Association of Australia** will be provided with details of the crane operations at least seven days prior to their commencement via the Notice to Airmen (NOTAM) procedure. **Details of potential stringing of transmission lines with helicopters and/or drones will be provided to Airservices Australia prior to commencement of stringing activities.**	Construction	~~**Transmission line route between Wagga 330 kV substation and Gugaa 500 kV substation**~~ **Transmission line**
HR9	Chemicals, fuels and hazardous substances	All chemicals, fuels or other hazardous substances will be stored in accordance with the supplier's instructions and relevant legislation, Australian Standards and applicable guidelines. The capacity of any bunded area will be at least 130 per cent of the largest chemical volume contained within the bunded area. The location of the bunded enclosure/s will be shown on the site plans.	Construction and operation	All locations
HR10	Dangerous goods and hazardous materials	Dangerous goods and hazardous substances will be transported in accordance with relevant legislation and codes, including the *Dangerous Goods (Road and Rail Transport) Act 2008*, 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	All locations
HR11	Emergency response	The Wagga 330 kV substation and Bannaby 500 kV substation Emergency Response Manuals will be updated to include the modifications and required revised emergency response procedures.	Detailed design and operation	Wagga 330 kV substation and Bannaby 500 kV substation

Reference	Impact	Mitigation measure	Timing	Relevant location
HR12	Emergency response	An Emergency Response Manual will be prepared for the proposed Gugaa 500 kV substation and will include emergency response procedures.	Detailed design and operation	Proposed Gugaa 500 kV substation
HR13	Electric and magnetic fields	The detailed design for the transmission line and substations will be developed to comply with the following criteria: • Magnetic fields: 2,000 milligauss being the ICNIRP guideline 'Reference Level' • Electric fields: 9.1 kV per metre, ensuring compliance with the ICNIRP guideline 'Basic Restriction'.	Detailed design	Transmission line and substations
HR14	**Electric and magnetic fields**	**Within 12 months of the commencement of operation, an EMF compliance report will be produced to ensure compliance with the following EMF design criteria:** • **Magnetic fields: 2,000 milligauss being the ICNIRP guideline 'Reference Level'** • **Electric fields: 9.1 kV per metre, ensuring compliance with the ICNIRP guideline 'Basic Restriction'.**	**Operation**	**All locations**
HR15	**Bushfire**	**A minimum of 20,000 litre static water supply for firefighting purpose will be provided for each construction compound and worker accommodation facility where no reticulated water is available in accordance with *Planning for Bush Fire Protection: A guide for councils, planners, fire authorities and developers* (NSW RFS, 2019).**	**Construction**	**Construction compounds and worker accommodation facilities**
Traffic, transport and access				
TT1	Road safety – design	Access tracks, access connections and road upgrades required to facilitate the movement of project related traffic will be designed **and constructed in a fit for purpose manner for construction. Where required, intersection works with public roads will be designed and constructed** according to relevant Austroads guides **or the relevant asset owners' standards**.	Detailed design	Access tracks and roads
TT2	Impact to road network during OSOM deliveries	Prior to commencement of transportation activities, the validity of the previously undertaken haulage route studies will be confirmed in consideration of final haulage route conditions and applicable route restrictions for the period during which transportation of such components is planned. **Any relevant permits and approvals will be sought from National Heavy Vehicle Regulator, the relevant road and rail authorities, NSW police, and utility owners and providers.**	Detailed design	Transportation route
TT3	General construction impacts	Traffic controls will be aligned with *Traffic Control at Work Sites – Technical Manual Version 6.1* (**Transport for NSW (**TfNSW**)**, 2022). Traffic controls will be confirmed in consultation with the relevant road authority.	Detailed design and construction	All locations

Reference	Impact	Mitigation measure	Timing	Relevant location
TT4	Road maintenance	Prior to construction, road ~~**dilapidation surveys**~~ **condition assessments** will be carried out for all local roads to be used during construction. The surveys will assess the current condition of the road surface **and will be documented in a road condition report, with a copy being provided to the relevant road authority**. ~~**At the completion of project construction, a subsequent road condition assessment will be prepared to assess the damage to roads accessed by project related traffic.**~~ **Road condition assessments will be undertaken during and following construction to assess the damage to roads accessed by project-related traffic.** Damage caused by the project will be rectified **or compensated for, during or after construction,** in consultation with the relevant road authority.	Detailed design and construction	Access routes
TT5	Impact on rail operation	All project activities in rail corridors will be undertaken in accordance with the permission granted by the appropriate rail authority. Stringing of transmission line over rail tracks will be scheduled during rail maintenance periods or in a duration which permits sufficient gap between scheduled freight or passenger services to undertake the work.	Construction and operation	All locations
TT6	Temporary lane/road closure	Road closures will be undertaken with the approval of the appropriate road authority and under the relevant road occupancy licence to be obtained prior to construction. Where feasible, road closures will be planned outside of the traffic peak to minimise the impact on the road network.	Construction	All locations
TT7	Road safety – driver related	A Code of Conduct applicable to all construction workers will be developed and implemented which will define acceptable driver behaviour. The purpose of the Code of Conduct is to promote road safety and ensure that the impacts of construction-related vehicle movements on local roads and the local community are minimised. The Code of Conduct will be developed as part of a wider suite of documents under work health and safety requirements.	Construction	Roads providing access to project
TT8	Community and stakeholder consultation	Community and stakeholder communication strategies will be established and implemented to notify the affected communities, visitors, emergency services and relevant road and rail authorities in advance of any disruptions to traffic, anticipated delays, disruptions to property access and changes to travel routes. The strategies will be developed including details on communication channels, frequency of communication and response measures in relaying information to the community and stakeholders.	Detailed design and construction	All locations

Reference	Impact	Mitigation measure	Timing	Relevant location
Air quality				
AQ1	Dust emissions	The following measures will be considered and implemented where practicable and appropriate to manage dust: • use water sprays or surfactants as required for dust suppression • provide adequate water supply on site for dust suppression • locate dust generating activities away from receptors • protect stockpiled materials from wind erosion to minimise dust generation and position stockpiles as far as practicable away from any nearby receptors • implement measures to minimise the tracking of dust generating material onto paved roads • cover the loads of potential dust producing materials • minimise the extent of ground disturbance as far as practicable • stabilise disturbed areas as soon as practicable • plan and schedule vegetation clearance and grubbing activities to minimise areas of open and exposed soil. The effectiveness of the installed controls will be monitored, and additional controls implemented as required to address any performance issues identified.	Construction	All locations
AQ2	Vehicles and machinery emissions	All vehicles and machinery will be maintained in accordance with manufacturer's specifications.	Construction	All locations
AQ3	Vehicle movements	Dust generation from project-related traffic movements on unsealed roads and access tracks (routes) in proximity to sensitive receivers will be visually monitored. Where dust from project-related traffic movements is impacting or has the potential to impact the sensitive receivers, measures to minimise dust emissions and potential associated amenity impacts will be implemented where practicable and appropriate.	Construction	All locations

Reference	Impact	Mitigation measure	Timing	Relevant location
AQ4	Operation of concrete batching plant(s)	Measures will be implemented at concrete batching plants to minimise emissions to air as far as possible, and will be regularly inspected with additional controls implemented as required. **Concrete batching plants that will produce greater than 5,000 tonnes per year will be located 100 m (or more) from sensitive receptors.** Measures to minimise emissions to air may include **(where relevant)**: • all aggregate and sand will be stored appropriately in storage bins or bays to minimise dust generation, and material will not exceed the height of the bay • cement silos and hoppers will be fitted with dust filters • all inspection points and hatches will be fully sealed • all dry raw materials to be transferred into the bowl of an agitator via front end loaders by maintaining adequate moisture levels and/or an enclosed conveyor • the cement silo will be fitted with emergency pressure alert and automatic cut off overfill protection • transfer of cement from storage to batching will occur via sealed steel augers • **regular** ~~**regularly inspect**~~ monitoring of dust emissions and apply additional controls as required. **Where recommended separation distances cannot be achieved, alternative controls to minimise potential impacts will be investigated and implemented.**	Construction	Concrete batching plant(s)
AQ5	Crushing/screening activities	To minimise dust emissions during crushing/screening activities, the following measures (as a minimum) will be considered and implemented where practicable and appropriate: • **locate plant 500 m (or more) from sensitive receptors** • ~~**fit**~~ screen covers will be fitted to the crushing/screening equipment • control dust emissions from screening activities using water sprinklers, where required and appropriate • inspect the water sprinklers on a regular basis and maintain as required to ensure operational efficiency • where practicable, install wind breaks in appropriate locations adjacent to the dust generating equipment and processes • prior to screening, dampen the rocks during dry weather conditions. The effectiveness of the implemented controls will be monitored, and additional controls implemented as required to address any performance issues identified. **Where recommended separation distances cannot be achieved, alternative controls to minimise potential impacts will be investigated and implemented.**	Construction	Crushing/screening plant(s)

Reference	Impact	Mitigation measure	Timing	Relevant location
AQ6	**Diesel generators**	**To minimise the impact of emissions from the use of diesel generators on sensitive receptors, the following measures (as a minimum) will be considered and implemented where practicable and appropriate:** **• Locate the equipment so it is away from the prevailing wind direction and maximise the distance to the nearest sensitive receiver** **• Connect to existing electricity network rather than using diesel generators where possible.** **• If connection to existing electricity network is not possible, where practical and appropriate implement the following recommended separation distances:** **- Greater than 10 MW in aggregate: 1,000 metres from sensitive receptor locations** **- Greater than or equal to 100 kW but less than 10 MW in aggregate: 500 metres from sensitive receptor locations** **Where recommended separation distances cannot be achieved, alternative controls to minimise potential impacts will be investigated and implemented.**	**Construction**	**Diesel generators at compounds and worker accommodation facilities**
AQ7	**Helipads**	**To minimise the impact of air emissions from the use of helipads on sensitive receptors, the following measures (as a minimum) will be considered and implemented where practicable and appropriate:** **• Locate helipad as far as practical from sensitive receptors** **• Minimise dust generation at take-off and landing sites and sites being used for transmission line structure assembly (particularly those used frequently) by the implementation of dust control measures including:** **- provision of water carts to apply water or other dust suppressants as and when required on work areas close to potential sensitive receptors** **- visual monitoring of dust generation** **- community liaison and mechanisms for registering and resolving complaints.**	**Construction**	**Helipads at compounds and worker accommodation facilities**
Climate change and greenhouse gas				
CC1	GHG emissions	The use of **sulfur hexafluoride (**SF_6**) gas** will be minimised where possible, including through the investigation of alternatives.	Detailed design and operation	Substations
CC2	GHG emissions	Options that will be considered during **Infrastructure Sustainability Council (**ISC**)** rating design review include energy efficient and passive design features for substation and worker accommodation facility buildings including air conditioning, lighting, low-flow fittings and solar power.	Detailed design	Substations and worker accommodation ~~**facility**~~ **facilities**

Reference	Impact	Mitigation measure	Timing	Relevant location
CC3	GHG emissions	Options to minimise transport distances between construction compounds, accommodation facilities and work sites will be considered, for example utilising vehicle pooling / mini-buses and sourcing equipment and materials locally where practicable.	Detailed design	All locations
CC4	GHG emissions	GHG emissions and associated activity data will be tracked and recorded to assist in identifying key emission sources and appropriate targeting of mitigation measures, as well as to provide learnings for other projects and demonstration of **Infrastructure Sustainability (**IS**)** Rating compliance.	Construction and operation	All locations
CC5	GHG emissions	**Sulfur hexafluoride (**SF_6**) gas** emissions will be minimised through **existing Transgrid** leakage detection monitoring programs, maintenance and end of life dismantling procedures.	Operation	Substations
Waste				
W1	Resource management	The resource management hierarchy principles established under the ***Waste Avoidance and Resource Recovery Act 2007*** **(**WARR**)** Act of avoid, reduce, reuse, or recycle with disposal as the last resort will be applied to further development, construction and operation of the project.	Detailed design, construction and operation	All locations
W2	Stockpiling of wastes	Stockpiled wastes, where required, will be: • appropriately segregated to avoid mixing and contamination • appropriately signposted • appropriately stored in accordance with *Managing Urban Stormwater – Soils and Construction* (Landcom, 2004) • less than three metres in height with an appropriate height to length batter ratio • located as far away as reasonably practicable from sensitive receivers, ecological areas and waterways.	Construction	All locations
W3	Storage and transport of waste	All waste will be assessed, classified, managed, and disposed of in accordance with the *Waste Classification Guidelines* (NSW EPA, 2014). Waste will be appropriately transported, stored and handled according to their waste classification and in a manner that prevents pollution of the surrounding environment. All waste related documentation such as waste classifications, transfer and disposal documentary evidence will be held by the proponent for a minimum of seven years from the date the waste is generated.	Construction and operation	All locations
W4	General waste management	The reuse of spoil and soils sourced from construction will be considered under an NSW EPA approved resource recovery order where the materials are sourced from within the project footprint and suitable from both a contamination and geotechnical perspective. Where a NSW EPA Resource Recovery Order exists for waste generated by the project, the opportunity to reuse that waste will be considered prior to disposal. The orders will need to be reviewed during construction and operation for validity and applicability.	Construction and operation	All locations

Reference	Impact	Mitigation measure	Timing	Relevant location
W5	Hazardous waste	Hazardous waste will be managed by appropriately qualified and licensed contractors, in accordance with the requirements of the *Environmentally Hazardous Chemicals Act 1985* and the EPA waste disposal guidelines.	Construction and operation	All locations
Cumulative impacts				
CI1	Occurrence of cumulative impacts	Coordination and engagement with proponents and/or construction contractors of relevant future projects will occur during detailed design and construction to confirm the potential cumulative impacts and timing of activities that have potential cumulative impacts. Coordination and engagement will include: • providing regular construction program updates • identifying potential conflict points with other relevant future projects, eg proximity of work sites, or shared construction access routes and traffic management requirements • developing mitigation strategies in order to manage conflicts that may arise.	Detailed design and construction	All locations
CI2	Occurrence of cumulative impacts	Engagement with the Department of Defence and Transport for NSW will be carried out during detailed design and construction to confirm the potential for cumulative impacts from the RAAF Base Wagga Redevelopment, **Kapooka Military Area Redevelopment** and work associated with the *Tumut to Hume Highway (Snowy Mountains Highway and Gocup Road) Corridor Strat*egy (Transport for NSW, 2016). Mitigation strategies will be developed if potential cumulative impacts are identified.	Detailed design and construction	All locations

Appendix B.1 Updated biodiversity mitigation measures

Appendix B.1 will be provided separately with *Technical Report 1 – Revised Biodiversity Development Assessment Report*.