APPENDIX F

Construction Environmental Management Plan outline

NARRABRI TO NORTH STAR—PHASE 2 ENVIRONMENTAL IMPACT STATEMENT

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TABLE F1-1 CEMP OUTLINE

Item/sub-plan	What would the plan address?	Issue	Management measures to be included in the CEMP and implemented during construction
1 General	The Construction Environmental Management Plan (CEMP) would outline the construction conditions and temporary environmental protection measures to manage the impact of construction activities. It would be consistent with the mitigation and management measures documented in this EIS, conditions of approval, the conditions of any licenses or permits issued by government authorities, and ARTC's environmental management system. The CEMP would address: ▸ biodiversity, including flora and fauna, and biosecurity ▸ cultural heritage ▸ soil and water ▸ waste and contamination ▸ air quality ▸ construction noise and vibration.	Site induction	All employees, contractors and subcontractors would receive an environmental induction, which would include: ▸ relevant conditions included in the Minister's Conditions of Approval ▸ all proposal-specific, and standard, noise and vibration mitigation measures ▸ relevant conditions of licences/approvals/determinations, etc. ▸ permissible hours of work ▸ any limitations on high noise-generating activities ▸ location of nearest sensitive receivers ▸ heritage requirements ▸ biodiversity requirements ▸ biosecurity requirements ▸ management and storage of hazardous materials ▸ construction employee areas ▸ designated loading/unloading areas and procedures ▸ construction traffic routes and traffic management ▸ site opening/closing times (including deliveries) ▸ requirements for interaction with the public ▸ environmental incident procedures.
		Roles and responsibilities	▸ The CEMP would identify all members of the Inland Rail and construction team, including roles and responsibilities relevant to implementation of the CEMP. ▸ Contact details would be provided, including contacts in the case of emergencies or incidents as well as out-of-hours contacts.

Item/sub-plan	What would the plan address?	Issue	Management measures to be included in the CEMP and implemented during construction
		Reporting and communication	▸ The CEMP would outline reporting requirements for different levels of environment incidents, as well as the required procedure for receipt of public complaints, emergency and incident management, non-compliance management and corrective and preventative actions. ▸ Any additional training requirements would be identified (in addition to the site induction). ▸ Reporting requirements would be included, including for the control of environmental records.
		Monitoring and auditing	▸ The CEMP would identify monitoring, auditing and inspection requirements, and determine the framework for the management of key environmental issues for construction.
		Environmental control maps	▸ The location of sensitive areas (e.g. heritage items and trees/vegetation to be retained) would be clearly identified on environmental control maps, which would be supplied to construction managers and workers.
		Working hours and out of recommended standard working hours protocol	▸ Permissible working hours and activities would be defined. ▸ A protocol for works undertaken outside recommended standard construction working hours would be prepared in accordance with the conditions of approval.
		Property impacts	▸ Temporarily affected land for construction purposes would be restored to an agreed condition and returned to affected landowners as soon as practically possible.

2 Soil and water	A Soil and Water Management Plan (SWMP) would be prepared, and detail how potential impacts on soils, erosion, sedimentation, watercourses and water quality (surface and groundwater) would be mitigated and managed during construction.
	The plan would consider site-specific conditions including dispersive soils and potential treatment options during construction. The plan would provide for incident management in relation to potential water quality contamination incidents.
	It would include procedures to manage the impact of the proposal on flooding and would take into account the requirements of relevant guidelines.
	An Erosion and Sediment Control Plan (ESCP) would also be prepared and implemented as part of the SWMP, in accordance with *Managing Urban Stormwater Soils and Construction (Blue Book)* (Landcom, 2004).
		Flood impact mitigation	▸ Following development of the construction methodology, critical stages of the works would be identified and tested in the flood model to identify potential construction-phase flooding impacts. The tests would simulate the following in the model for a number of construction phase scenarios as required:
			  ▸ key stages of temporary embankment opening during demolition reconstruction that could pass additional flow downstream
			  ▸ location and level of construction facilities (such as compounds, access tracks and stockpiles) that could obstruct and divert flows
			  ▸ location and level of temporary works in waterways and overland flow paths during bridge and culvert construction that could obstruct and divert flows.
			▸ The outcomes of the modelling would be used to inform the construction phase Flood Emergency Response Plan.

Item/sub-plan	What would the plan address?	Issue	Management measures to be included in the CEMP and implemented during construction
	The ESCP would cover: ▸ water quality and soil/land conservation objectives for the proposal ▸ temporary erosion and sediment control measures (including progressive erosion and sediment control plans that allow for staging of erosion and sediment controls as construction progresses) ▸ rainfall monitoring requirements across the proposal area workplace health and safety requirements relating to management of contamination ▸ management of problem soils (e.g. acid sulfate soils (ASS) and erosive, dispersive, reactive, acidic, sodic or alkaline soils) ▸ stockpiling and management/segregation of topsoil where it contains native plants, seedbank or weed material ▸ vehicle, machinery and imported fill hygiene protocols and documentation ▸ measures to prevent/minimise mud and dirt being tracked onto public roadways by trucks and any equipment leaving the site ▸ requirements for training inspections, corrective actions, notifications and classification of environmental incidents, record keeping, monitoring and performance objectives for handover on completion of construction ▸ any other requirements necessary to comply with conditions of approval, subsequent approvals or regulatory requirements. The plan would include a detailed list of measures that would be implemented during construction to minimise the potential for soil and contamination impacts, including: ▸ allocation of general site practices and responsibilities ▸ material management practices ▸ stockpiling and topsoil management, including prompt stabilisation of spoil mounds (e.g. through mixing of gypsum) ▸ surface water and erosion control practices that take into account site-specific soil types (e.g. dispersive soils).		▸ Flood model results would be used to identify areas free from flooding in a 10% AEP event and construction compounds would be located in these areas where possible. ▸ Where locating construction compounds within the floodplain is unavoidable, flood model results would be used to identify areas where flood depth and velocity are low to ensure that facilities are located in areas of lowest flood risk. ▸ The siting of temporary construction facilities compounds, stockpiles, mobile fuel storage, laydown areas, temporary access roads and staff parking would not occur on the floodplain (where possible) and would be in accordance with the proposal conditions of approval and sited to minimise the extent of disturbance. ▸ Site shutdown procedures would be developed for work sites and updated regularly as construction progresses and sites change. Site shutdown procedures would be implemented prior to forecast inclement weather and planned site shutdowns in excess of 48 hours.
		Erosion of exposed soils and sediment management	▸ The SWMP and ESCP would be signed off by a Suitably Qualified Person (e.g. CPESC) in accordance with regulatory requirements. ▸ Sediment and erosion control devices would be installed to minimise mobilisation and transport of sediment in accordance with *Managing Urban Stormwater: Soils and Construction*. ▸ Maintenance and checking of the erosion and sedimentation controls would be undertaken on a daily basis and any subsequent records retained. Sediment would be cleared from behind barriers/sand bags immediately, as required, and all controls would be managed to ensure they work effectively at all times. ▸ The area of exposed surfaces would be minimised. Disturbed areas would be stabilised progressively to ensure that no areas remain unstable for any extended length of time. ▸ Soil and sediment that accumulates in erosion and sediment control structures would be reused where practicable during site reinstatement, unless it is contaminated or otherwise inappropriate for reuse. ▸ Topsoil would be stripped progressively in areas designated for construction and stockpiled separately onsite for use in rehabilitation/stabilisation works. ▸ Work would cease where practicable during heavy rainfall events when there is a risk of sediment loss offsite or ground disturbance due to waterlogged conditions. ▸ Equipment, plant and materials would be placed in designated lay-down areas where they are least likely to cause erosion.

Item/sub-plan	What would the plan address?	Issue	Management measures to be included in the CEMP and implemented during construction
			▸ Erosion control devices would be removed as part of the final site clean up. This would include removing any sediment in drainage lines that has been trapped by erosion control devices, and restoring disturbed areas. ▸ Exposed surfaces would be stabilised, and final landscaping implemented, as soon as practicable.

		Water quality monitoring and management	▸ The SWMP would align with best practice for erosion and sediment control, as per the Blue Book. For ongoing monitoring and maintenance of water quality, the SWMP would include a Surface Water Quality Monitoring Plan (SWQMP), which would continue post construction until the works area is adequately stabilised. The Surface Water Quality Monitoring Plan would identify:
			  ▸ monitoring locations at discharge points and selected watercourses where works are being undertaken
			  ▸ monitoring parameters
			  ▸ frequency and duration of monitoring.
			▸ The SWQMP would include the relevant water quality objectives (WQOs), parameters and criteria from Technical Papers 5A and 5B. It would be developed in consultation with the Department of Planning, Industry and Environment (DPIE), and the NSW Environment Protection Authority (EPA).
			▸ Specifically, the SWQMP would require:
			  ▸ baseline water quality monitoring pre-construction, on three separate occasions over three weeks (i.e. three x weekly water quality samples to be taken pre-construction), at each of the locations sampled at the initial water quality assessment in March 2020:
			  – Gwydir River upstream and downstream
			  – Mehi River upstream and downstream
			  – Skinners Creek upstream and downstream
			  – unnamed waterway (tributary of Gwydir River) upstream and downstream
			  – wetland (downstream of unnamed waterway) upstream and downstream

Item/sub-plan	What would the plan address?	Issue	Management measures to be included in the CEMP and implemented during construction
			▸ monthly water quality monitoring, in addition to monitoring after rain or flood events, at the locations sampled in March 2020 ▸ the water quality monitoring would test and record the same parameters as the March 2020 program, which were: – Ph, electrical conductivity (EC), temperature, dissolved oxygen and turbidity – additional laboratory samples for heavy metals, hydrocarbons, total dissolved solids, total suspended solids, and various nutrients detailed in Chapter 13 ▸ training, inspections, corrective actions, notification and classification of environmental incidents, record keeping, monitoring and performance objectives for handover on completion of construction. ▸ During construction, results of the surface water quality monitoring would be compared to the NSW WQOs identified in Chapter 13. The aim of the monitoring would be to demonstrate that trigger values are not exceeded and/or construction of the proposal is not having an adverse impact on water quality where the trigger values are already exceeded in the pre-construction baseline condition. Where an exceedance occurs during construction, or in the stabilisation phase post construction, it would trigger an investigation into the cause of the increase of the pollutant in the waterway and further action or mitigation measures to address water quality issues that may be caused by runoff from disturbed or pre-stabilised areas of the rail corridor. ▸ Water quality mitigation measures would be installed during construction, including erosion and sediment controls (as per ESCP) and the installation of silt curtains in rivers during works in or adjacent to rivers. ▸ A surface water monitoring framework would be developed and implemented to monitor water quality at discharge points and selected watercourses where works are being undertaken. The framework would provide for seasonal variability and include the relevant WQOs, parameters and criteria identified. ▸ Inspection and maintenance of erosion and sediment controls would be carried out throughout the works to ensure they are operating effectively. ▸ Rainfall monitoring would be undertaken across the proposal site. ▸ Management protocols for problem soils (e.g. erosive, dispersive, reactive, acidic, sodic, alkaline soils) would be implemented. ▸ Vehicle, machinery and imported fill hygiene protocols (with appropriate documentation) would be implemented.

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			▸ Any discharge of construction water (e.g. from sediment basins and excavation dewatering, etc.) to the drainage systems or receiving waters would comply with the trigger values so that the proposal does not have an adverse impact on water quality. ▸ Where possible, bridge girders and culverts would be pre-cast offsite and installed along the proposal site as the works progress, to minimise the risk of contamination from concrete works and reduce the duration of construction works near and in waterways. ▸ Specific measures and procedures for works within waterways, such as the use of silt barriers and temporary creek diversions, would be implemented, where necessary. ▸ Construction planning for in-stream works for bridge construction would include procedures for forecasting rainfall, and removal of plant and machinery from the waterway, in advance of high flows and floods. ▸ In-stream works involving piling and pier construction would be contained within temporary barriers to prevent river flows entering open excavations and works areas. Temporary silt curtains and containment would also be installed to contain any silt mobilised during disturbance activities within the river and creek beds. ▸ Opportunities to re-use/recycle construction water are identified and implemented, where feasible, during construction.
		Stockpile management	▸ Stockpiles would be managed by implementing sediment and erosion control devices in accordance with *Managing Urban Stormwater, Soils and Construction*. ▸ Stockpiling of materials onsite would be managed to limit amounts to only that required for the task. Delivery of smaller quantities of materials would be done to make managing the site easier. Stockpiles of loose material would be protected from erosion due to rain and wind. Soil binders would be used where practicable. ▸ All site workers would be instructed on the need to prevent materials from washing or blowing into the stormwater system. ▸ No topsoil stockpiles may exceed 2.5 metres (m) in height. ▸ All excess material would be removed from the site when practical to do so and at the completion of work. ▸ Testing would be undertaken to identify and safely stockpile contaminated materials if found.

Item/sub-plan	What would the plan address?	Issue	Management measures to be included in the CEMP and implemented during construction
		Spill/incident management	▸ A site-specific Emergency Spill Response Plan would be developed and include spill management measures in accordance with the relevant EPA guidelines. The plan would address measures to be implemented in the event of a spill, including initial response and containment, notification of emergency services and relevant authorities (including an ARTC Environment Manager and/or EPA officers). ▸ Impervious and bunded areas would be established for any unplanned onsite maintenance of construction plant and equipment. No major plant and equipment maintenance would occur onsite. ▸ No refuelling would be undertaken within 50 m of a waterway. Specific refuelling areas would be set up onsite with bunding to ensure no spills or leaks of oils or fuels into waterways. Stationary plant (e.g. cranes) would be bunded in-situ and double bunding would be carried out during any refuelling process for the plant. ▸ All potentially contaminating, contaminated and hazardous substances would be stored in secured, bunded and impervious locations. Ensure that storage locations are isolated from surface water and outside of the extent of the 5% AEP design flood wherever practicable. ▸ Regular inspection of construction plant and equipment would be undertaken for leaks and to maintain or remove from site, as required, to prevent soil and surface water contamination. ▸ Construction plant and equipment would be refuelled using dedicated refuelling apparatus only. ▸ Adequately stocked spill kits would be available and accessible during all refuelling and all personnel involved in refuelling activities would be trained in the use of spill kits. ▸ Any spills of fuels, lubricants, chemicals and other liquids would be cleaned up as soon as reasonably practicable. ▸ Any potentially contaminated materials would be appropriately contained, tested and stored prior to disposal at an appropriately licensed waste facility.

Item/sub-plan	What would the plan address?	Issue	Management measures to be included in the CEMP and implemented during construction
		Groundwater	▸ A Groundwater Mitigation and Management Plan (GWMMP) would be prepared as a sub plan, as part of the CEMP. The GWMMP would comply with the proposal approval conditions and be implemented to monitor the effectiveness of mitigation and management measures applied during the construction phase of the proposal. The GWMMP would, at a minimum: ▸ be based on baseline studies developed for the proposal (this report) ▸ include procedures for the documentation and reporting of results ▸ include requirements for training, inspections, corrective actions, notification and classification of environmental incidents, record keeping, monitoring and performance objectives for handover on completion of construction. ▸ In the event that groundwater is required for construction water supply, then all water take would be appropriately licensed. ▸ Monitoring would be undertaken during extraction to ensure volumes stipulated by licence requirements are not exceeded. ▸ The quality of groundwater obtained from the proposed bore field bores would be assessed for the suitability of its intended use. Where required, treatment systems would be designed to ensure water quality does not exceed the relevant water quality criteria from the *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (ANZG, 2018). ▸ Any existing groundwater bores that are destroyed during construction would be replaced subject to discussion with the registered owner. ▸ No groundwater discharge would be reintroduced to the groundwater system without appropriate testing and conformance to the relevant water quality control criteria.

Item/sub-plan	What would the plan address?	Issue	Management measures to be included in the CEMP and implemented during construction
3 Contamination and hazardous materials	A contaminated land and hazardous materials management plan (CLHMMP) would be prepared and implemented as part of the CEMP. The plan would include but not be limited to: ▸ results from all contaminated land investigations ▸ the methodology to manage excavation and spoil management with known contaminated sites ▸ requirements for the capture and management of any surface runoff contaminated by exposure to the contaminated land ▸ measures to ensure the safety of site personnel, environment and local communities during construction ▸ procedures for incident management and managing unexpected contamination finds (an unexpected finds protocol) ▸ procedures to be followed in the event of an unexpected find or contamination incident. Construction hazard and risk issues associated with the use and storage of hazardous materials would be addressed through risk management measures developed in accordance with relevant Department of Planning and Environment guidelines, Australian and ISO standards. The plan would take into account the requirements of relevant legislation and guidelines.	Contamination	▸ A contaminated land investigation of the N2NS Phase 2 rail corridor would be undertaken by a suitably qualified person in accordance with requirements of National Environment Protection Measures (NEPM) (2013) and the methodology captured in the CEMP. ▸ If contaminated areas are encountered during construction, appropriate control measures would be implemented to manage the immediate risks of contamination. All other work that may impact on the contaminated area would cease until the nature and extent of the contamination has been confirmed and any necessary site-specific controls or further actions identified in consultation with the ARTC Environment Manager and/or EPA. ▸ All requirements set out in the ARTC *Earthworks Materials Management Framework (ETC-08-03 Rev 1.3)* would be complied with, including meeting the criteria for earthworks material selection and imported fill.
		Hazardous materials	▸ Appropriate register and records of chemicals, hydrocarbons and hazardous substances and materials onsite would be kept up to date as required by relevant legislation, regulations and proposal approval conditions. This would not only abide with relevant environmental legislation but also relevant workplace health and safety legislation. Where appropriate, this would include a relevant risk assessment prior to the substance coming, and being used, onsite, plus a Safety Data Sheet (SDS) Register. ▸ All liquid chemicals, oils, fuels and liquid wastes would be stored in a sealed and bunded storage area as per the proposal approval conditions and any relevant and applicable legislation, regulations or Australian Standards. ▸ Acids and bases to be stored in compliant corrosive resistant storage, in accordance with *AS3780-2008—the storage and handling of corrosive substances*. ▸ Incompatible classes of dangerous goods would be sufficiently segregated during storage. ▸ Hazardous materials and dangerous goods would be stored, handled and transported in accordance with relevant regulatory requirements and relevant Australian Standards, including SEPP 33 thresholds (or relevant planning polices). Storage levels would be maintained below the SEPP 33 thresholds.

Item/sub-plan	What would the plan address?	Issue	Management measures to be included in the CEMP and implemented during construction
			▸ A hazardous substances and dangerous goods risk management strategy would be developed to manage the potential for risks in situations where the minimum distance from sensitive receivers cannot be achieved, or the quantity of hazardous materials exceed relevant planning policy or regulatory threshold levels. ▸ Construction chemicals stored and handled would be managed in accordance with the *Work Health and Safety Act 2011* (NSW) and Regulation, the relevant Australian Standards and the requirements of chemical safety data sheets. Safety data sheet information would be obtained from the supplier of these chemicals and stored in an easily accessible location. ▸ All bunding would be designed and operated as per the relevant proposal approval conditions, legislation, regulations and Australian Standard, where applicable. This would include appropriate design, controls and procedures to eliminate, minimise and manage the water/liquid potentially present in the bund.
		Incident management	▸ A site-specific Emergency Spill Response Plan (ESRP) would be developed, and include spill management measures in accordance with the relevant EPA guidelines. The plan would address measures to be implemented in the event of a spill, including initial response and containment, notification of emergency services and relevant authorities (including ARTC Environment Manager and/ or EPA officers). ▸ ARTC's existing spill response procedures would be reviewed to determine applicability and suitability during operation. The adopted procedure would include measures to minimise the potential for impacts on the local community and the environment. ▸ Spill kits would be clearly signed and maintained, and located near work zones, chemical, oil and fuel storage locations or within vehicles. An appropriate risk assessment would be completed to ensure that all high-risk locations for spills have an appropriate spill kit in the vicinity. It would be ensured that the spill kit at the different locations is the appropriate type for the substance that may be spilt. (i.e. hydrocarbon, general or Hazchem spill kit). ▸ Training in the use of spill kits would be given to all personnel involved in the storage, distribution or use of hazardous materials.
			▸ Incidents would be managed in accordance with the conditions of approval for the proposal. ▸ ARTC would routinely maintain all plant and equipment within the rail corridor to minimise any leaks of fuels and oils. During any maintenance work where soils are exposed, sediment and erosion control devices would be installed in accordance with *Managing Urban Stormwater: Soils and Construction*.

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		Unexpected finds	▸ An 'unexpected finds protocol' would be prepared and included in the CEMP to assist with the identification, reporting, assessment, management, health and safety implications, remediation, and/or disposal (at an appropriately licensed facility) of any potentially contaminated soil and/or water. This would include specifying appropriate reporting requirements in accordance with the *Guidelines to the Duty to Report Contamination under the Contaminated Land Management Act 1997* (EPA, 2015).
			▸ In the event that indicators of contamination are encountered during construction (such as odours or visually contaminated materials), work in the affected area would cease immediately, and the procedures detailed in the unexpected finds protocol would be implemented. Unexpected soil contamination could include:
			  ▸ unexpected staining or odours
			  ▸ potential asbestos-containing materials
			  ▸ underground storage tanks, buried drums or machinery, etc.
			▸ The 'unexpected finds protocol' would include the following general approach:
			  ▸ site workers would make the area safe, stop work and notify the construction supervisor, who would quarantine/fence the area, notify staff onsite and the project manager
			  ▸ the project manager or their representative would notify an appropriately qualified environmental consultant who would carry out an assessment of the nature and extent of the unexpected contamination
			  ▸ remediation would be undertaken as required and as advised by the environmental consultant
			  ▸ works may only recommence at the site after approval has been obtained by the environmental consultant and the project manager
			  ▸ validation of the remediation would be carried out to assess the success of the remediation works.
			▸ Awareness training would be provided for all onsite staff to assist in the identification of potentially contaminated material.

		General contamination management	▸ Machinery would be checked daily to ensure that no oil, fuel or other liquids are leaking. ▸ Refuelling of plant and equipment would be undertaken within a designated refuelling point.

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4 Traffic, transport and access	A Traffic Management Plan (TMP) would be prepared in consultation with the Construction Contractor, Transport for NSW (TfNSW), local governments and an accredited road safety auditor. The plan would identify the impacts that construction traffic is likely to have on the transport infrastructure and detail ameliorative measures required to mitigate all identified impacts of the proposal.
	Specifically, the TMP would include:
	▸ fatigue management plan for drivers (workforce and construction vehicle)
	▸ confirmation of speed limits of the haul routes and roads under assessment
	▸ management of increased turning movements at intersections used during the construction phase
	▸ consultation with the relevant stakeholders to inform them of increased heavy vehicle use on:
	  ▸ school bus routes
	  ▸ stock routes
	  ▸ public roads
	▸ management of diversionary routes during road closures.
	Appropriate Construction Traffic, Transport and Access Management Plans would be developed as part of the TMP, including:
	▸ temporary signage required
	▸ designation of haulage routes and construction vehicle/staff parking
	▸ temporary diversions for motorists, cyclists, pedestrians and horse riders
	▸ permanent closures and diversions
	▸ community engagement and consultation requirements.
		Construction site traffic	▸ Traffic and access would be managed in accordance with Austroads *Guide to Traffic Management* (Austroads, 2020) and in consultation with TfNSW and local councils.
			▸ Road safety measures would be implemented, taking into consideration: speed restrictions; construction worker driver fatigue; in-vehicle communications; signage; demarcations; maintenance; safety checks; interaction with public transport; transport of hazardous and dangerous goods; and emergency response and disaster management.
			▸ Measures to manage traffic flows around the area affected by construction would be provided, including required regulatory and directional signposting, line marking, variable message signs, and all other necessary traffic control devices.
			▸ Traffic-calming devices to be installed along road segments with surrounding land uses containing vulnerable road users (e.g. schools) were deemed necessary in consultation with local road authorities and relevant stakeholders.
			▸ The plan would specify routes to be used by heavy construction-related vehicles to minimise impacts on sensitive land uses and the local community.
			▸ Requirements for permits for Oversize Overmass (OSOM), where vehicles do not comply with a mass, dimension or operating requirements, would be determined and permits obtained.
			▸ Construction vehicles would park within construction compounds where practicable.
			▸ The timing of deliveries accessing the site would be programmed to ensure there is sufficient space within the proposal site to accommodate deliveries.
			▸ The queuing and idling of construction vehicles would be minimised.
			▸ Designated queuing and idling areas would be determined near the work site to minimise disruption to the local community.

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			▸ Adequate sight lines would be provided to allow for safe entry and exit from the construction sites. ▸ Consideration would be given to limiting construction traffic on school bus routes during pick-up and set-down times on school days. Alternatively, appropriate school bus infrastructure would be installed. ▸ Access to all private properties adjacent to the proposal site would be maintained during construction, unless otherwise agreed with relevant property owners. ▸ Contractors, including transport/deliveries contractors, would be provided with a copy of the Traffic, Transport and Access Management Sub-plan to ensure disruptions to the local community are minimised. ▸ Liaison would be undertaken with Council, TfNSW, and emergency services at an early stage to establish requirements and measures to be adopted to maintain emergency vehicle movements.
		Access	▸ Where alternative access arrangements need to be made for landowners, these would be developed in consultation with affected property owners/occupants, and Local Land Services (LLS) for travelling stock reserves (TSRs). Access would be restricted to stock, as well as non-construction related vehicles and people, to the construction area through fencing and other measures. ▸ Livestock fencing would be provided in agricultural areas (as required) to minimise the risk of livestock–train collisions. The preferred fencing arrangements would be confirmed in consultation with landowners. ▸ Where travelling stock routes (TSRs) may be impacted by the construction works, consultation would take place with LLS regarding increased heavy vehicle movements along the stock route during the construction phase. ARTC would not have direct contact with stock handlers. Construction staff would be informed of the location of livestock along the highway. ▸ Relevant emergency services should be notified in advance prior to the movement of all hazardous/dangerous or oversize construction material and equipment. ▸ Access for emergency vehicles would be maintained along key emergency access routes throughout the construction period, with suitable alternative access arrangements provided where required. ▸ Relevant emergency services should be notified in advance prior to the movement of all hazardous/dangerous or oversize construction material and equipment. ▸ Secondary alternative construction route activities would be determined as part of the plan, in the event that the primary route is blocked off by an emergency/accident.

Item/sub-plan	What would the plan address?	Issue	Management measures to be included in the CEMP and implemented during construction
		Pedestrian and cyclists	▸ The plan would include measures to maximise safety and access for pedestrians and cyclists, including details of alternative access arrangements. ▸ Adequate road signage would be provided to inform pedestrians and cyclists of the work, timing and alternative access arrangements. ▸ Appropriate controls would be established where vehicles are required to cross footpaths to access construction sites. This may include manual supervision, physical barriers or temporary traffic signals as required.
		Consultation	▸ Ongoing consultation with relevant local governments, police, emergency services and affected property owners/occupiers to inform of proposal status and likely traffic disruptions and temporary road closures. ▸ Ongoing consultation with TfNSW, local governments LLS would be undertaken to inform of proposal status and likely traffic disruptions/road closures, to ensure proposed access arrangements are suitable and to review TMP effectiveness.
		Level crossings	▸ The operation of the level crossings that have been subject to changes as part of the proposal would be reviewed after the proposal commences operation to confirm that the level of protection continues to be appropriate and that the infrastructure is appropriate for the traffic conditions.

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5 Noise and vibration	A Construction Noise and Vibration Management Plan (CNVMP) would be prepared and implemented in accordance with the requirements of the Interim Construction Noise Guideline (ICNG) and Construction Noise and Vibration Management Framework (CNVMF).
	The Inland Rail NSW Construction Noise and Vibration Management Framework would be implemented, and the proposal would be constructed, with the aim of achieving the construction noise management levels and vibration criteria identified by the noise and vibration assessment.
	The CNVMP would take into consideration all reasonable and feasible measures for reducing the source noise levels of construction equipment by construction planning and equipment selection, where practicable, and comply with the requirements of relevant procedures and guidelines.
	The plan would also include reference to the working hours protocol and the complaints management procedures specified in the communication and complaints management plan.
		CNVMP	The CNVMP would outline measures to reduce the noise impact from construction activities including:
			▸ Noise monitoring: monitoring of noise during construction would be conducted in the event of a complaint at a nominated representative location (typically the location of the complainant or the nearest representative receiver where more than one receiver has been identified) in line with AS1055. Monitoring would be in the form of either unattended or operator-attended surveys (i.e. for specific periods of construction noise). Noise monitoring would be undertaken in response to legitimate noise or vibration complaints to assess compliance of construction activities against adopted criteria.
			▸ Dilapidation surveys: Property condition surveys would be completed prior to any vibration-intensive work being carried out at or within the minimum distances set out in Section 5 of the Construction Noise and Vibration Impact Assessment (Technical Paper 10, Volume 4). Where a receiver is determined to be structurally unsound, a reassessment of the minimum working distances would be required. Minimum working distances would be confirmed prior to carrying out any vibration intensive work on site.
			▸ Vibration monitoring: to avoid structural impacts as a result of vibration or direct contact with structures, the proposed works would be undertaken in accordance with the safe work distances and attended vibration monitoring or vibration trials would be undertaken where these distances are approached. Vibration resulting from construction and received at any structure outside the proposal site would be managed in accordance with:
			  ▸ for structural damage vibration—DIN4150
			  ▸ for human exposure to vibration—AVTG.
			▸ Where vibration levels are predicted to exceed the screening criteria, a more detailed assessment of the structure and vibration monitoring would be carried out in accordance with the CNVMF, to ensure vibration levels remain below appropriate limits for that structure.

		Construction hours and scheduling	▸ No construction noise generating activities would be undertaken in any area south of the Gwydirfield Road Level Crossing (Chainage 669,900) between 6:00 am and 7:00 am.

Item/sub-plan	What would the plan address?	Issue	Management measures to be included in the CEMP and implemented during construction

		Equipment and plant	In addition to ARTC standard noise and vibration mitigation measures and construction controls detailed in *AS 2436:2010— Guide to noise and vibration control on construction, demolition and maintenance sites*, the following measures would be considered:
			▸ substitute dump trucks, where feasible and reasonable, for quieter plant items such as 'truck and trailer' style trucks. This would reduce overall scenario noise levels by 3 dB or more
			▸ install residential class mufflers on all dump trucks to be used
			▸ use reversing 'squawker' alarms instead of conventional reversing alarms
			▸ install localised screens for stationary plants
			▸ use stationary plant items or work vehicles to create in situ noise screens along the corridor
			▸ for vibratory rollers:
			  ▸ use other forms of compaction, such as a hand operated vibratory plate compactor, nearest to receivers where there is potential for cosmetic damage
			  ▸ reduce the vibration amplitude setting for the drum of the roller use a single drum roller only
			  ▸ increase pass-by speed of the roller to reduce energy input into the ground near each receiver
			  ▸ replace large excavators with smaller excavators or use less intensive excavation measures, such as bobcats and backhoes, when construction works are conducted within the minimum working distances.

		Traffic flow and deliveries	▸ For construction sites located near sensitive receivers, traffic flow, parking and loading/unloading areas would be planned so as to minimise reversing movements within the site. ▸ Loading and unloading of materials/deliveries would occur as far as possible from sensitive receivers and preferably during standard construction hours. ▸ Site access points and roads would be selected to minimise impacts on sensitive receivers.

Item/sub-plan	What would the plan address?	Issue	Management measures to be included in the CEMP and implemented during construction
		Measuring and monitoring	▸ Attended noise and vibration measurements would be undertaken at the commencement of vibration-generating activities located in close proximity to sensitive receivers to confirm that vibration levels are within the acceptable range to prevent cosmetic building damage. ▸ Additional vibration and noise monitoring may be required in response to complaints. ▸ Location- and activity-specific construction noise and vibration impact statements would be prepared based on a more detailed understanding of the construction methods, including the size and type of construction equipment, duration and timing of works, and detailed reviews of local receivers as required. The statements would confirm predicted impacts at relevant receivers to assist with the selection of feasible and reasonable management measures. The statements would also confirm noise and vibration auditing and monitoring requirements.
	Construction vibration	Dilapidation surveys	Building condition surveys (dilapidation surveys) would be completed prior to construction where buildings or structures are expected to exceed the structural damage vibration limits given by DIN 4150.3 or are within the minimum vibration working distances for cosmetic damage. Building condition/dilapidation surveys would be undertaken at identified sensitive receivers, including heritage buildings (such as the Moree Hotel). Validation of these results would be undertaken during the operational phase. In addition to ARTC standard noise and vibration mitigation measures and construction controls detailed in *AS 2436:2010—Guide to noise and vibration control on construction, demolition and maintenance sites*, the following measures would be considered for vibratory rollers: ▸ use other forms of compaction, such as a hand-operated vibratory plate compactor nearest to receivers, where there is potential for cosmetic damage ▸ reduce the vibration amplitude setting for the drum of the roller ▸ use a single drum roller only ▸ increase pass-by speed of the roller to reduce energy input into the ground near each receiver.
			▸ replace large excavators with smaller excavators or use less intensive excavation measures, such as bobcats and backhoes, when construction works are conducted within the minimum working distances.

Item/sub-plan	What would the plan address?	Issue	Management measures to be included in the CEMP and implemented during construction
	Operational noise and vibration	Noise and vibration monitoring and management	▸ Operational noise and vibration compliance monitoring would be undertaken at representative locations to compare actual noise performance against that predicted by the noise and vibration assessment. Any results of monitoring would be included in an operational noise and vibration compliance report, prepared in accordance with the conditions of approval. Compliance monitoring requirements would be defined as part of the operational noise and vibration review. ▸ The preferred infrastructure would be operated with the aim of achieving the operational noise and vibration criteria identified by the noise and vibration assessment, the requirements of the conditions of approval, and the relevant EPL. Feasible and reasonable mitigation measures would be identified where exceedances of operational noise and vibration criteria are confirmed. Measures would be identified in accordance with the outcome of the operational noise and vibration review and the Inland Rail Noise and Vibration Strategy. These options include: ▸ the introduction of rail dampers ▸ the introduction of noise barriers, where considered practical and feasible, to achieve compliance ▸ consideration of at-property treatments once all other mitigation options have been exhausted. Where at-property noise treatments are identified as the preferred mitigation option, these would be developed in consultation with individual property owners.

Item/sub-plan	What would the plan address?	Issue	Management measures to be included in the CEMP and implemented during construction

6 Heritage (Aboriginal and non-Aboriginal)	A heritage management subplan would be developed as part of the CEMP, which complies with relevant regulatory requirements and state or Commonwealth guidelines, and incorporates mitigations and undertakings from this EIS. This plan would include appropriate criteria, directives and processes on:
	▸ site registry with approved management requirements
	▸ requirements and protocols for heritage clearances
	▸ unexpected finds procedure
	▸ relocation methodology of salvaged material (where applicable)
	▸ requirements for inspections and corrective actions during construction and other activities in the vicinity of heritage items
	▸ heritage management actions to be undertaken by suitably qualified persons
	▸ requirements for training, inspections, corrective actions, notification and classification of incidents, record keeping, monitoring and performance objectives for handover on completion of construction
	▸ any other requirements necessary to comply with conditions of approval, subsequent approvals or regulatory requirements.
	The plan would be prepared in consultation with relevant agencies and Aboriginal groups for management of Aboriginal heritage, listed non-Aboriginal heritage items and archaeological areas, and any previously unidentified items/areas of potential heritage significance identified during construction.
	It would incorporate the results of archaeological subsurface testing and an unexpected finds procedure.
	The unexpected finds procedure would define requirements relating to potential remains, in accordance with relevant guidelines.
		General—built and non-Aboriginal heritage	▸ All identified items within and in the immediate vicinity of the proposal site would be marked on environmental control maps, site plans, fenced off where appropriate, and avoided.
			▸ Landscape design and the rehabilitation of the landscape would incorporate interpretation and native plants, as defined during detailed design.
			▸ A heritage induction would be carried out prior to works commencing, and continued throughout the works program, to ensure all relevant construction staff, contractors and subcontractors are made aware of their statutory obligations.
			▸ In order to minimise and control any risks to heritage fabric or items as a result of vibration impacts, the following mitigation measures would be implemented:
			  ▸ dilapidation study to be undertaken for heritage items within 50 m of the proposal site prior to works commencing
			  ▸ a vibrations assessment be carried out for items within 50 m of the proposal site as per the:
			  – British Standard BS 7385: Part 2: Evaluation and Measurement for Vibrations in Buildings—Part 2 Guide to Damage Levels from Ground-Borne Vibration
			  – German Standard DIN 4150, Part 3: Structural Vibration in Buildings: Effects on Structures.
			▸ Vibration assessments would take place prior to works commencing, during the construction program and once the proposal is operational.
			▸ If the operational noise and vibration review indicates that vibration levels are predicted to exceed the screening criteria at sensitive receivers, a more detailed assessment of the structure would be carried out.
			▸ If vibration monitors are attached to the heritage items, they would not be attached with permanent fixings. They would be removable without causing damage. Beeswax may be a suitable attachment method.
			▸ Preconstruction vibration assessments would be undertaken at the Moree Hotel.

			▸ Where vibration causes damage to any heritage fabric, works would cease, and the construction methodology would be reviewed in consultation with a heritage consultant. A Temporary Protection Plan would be prepared prior to commencement of works. ▸ Where the proposed works would result in the removal of significant heritage fabric, such as the removal of Mehi River Bridge and Camurra, Gwydir River underbridge a salvage strategy would be prepared.

Item/sub-plan	What would the plan address?	Issue	Management measures to be included in the CEMP and implemented during construction
		Aboriginal heritage	▸ The plan would be prepared in consultation with Registered Aboriginal Parties (RAPs); would incorporate the recommendations of the Aboriginal Cultural Heritage Assessment Report (ACHAR) of the proposal; would consider the mitigation measures provided in Chapter 15; and would take into account the outcomes of any further investigations following detailed design. ▸ It has been assessed that the proposal site has low potential to contain locally significant archaeological remains associated with Aboriginal camping at Steel Bridge Camp at Mehi River Bridge. Due to the low potential for significant archaeological remains, excavations associated with the proposed works would be managed under an Unexpected Finds Procedure only. ▸ All culturally modified (scar) trees would be avoided and protected with fencing. ▸ Detailed design and construction planning would avoid direct impacts on the identified items/sites of Aboriginal heritage significance, where practicable. ▸ The location of construction compounds and associated access routes would be reviewed to ensure, as far as practicable, they are not located in areas of medium or high archaeological potential. Should they need to be located in any areas with high potential, additional archaeological investigations would be undertaken to clear the area. ▸ If potential Aboriginal items, objects or human remains are uncovered, works within the immediate area of the item would cease and the unexpected finds procedure would be implemented.

Item/sub-plan	What would the plan address?	Issue	Management measures to be included in the CEMP and implemented during construction

		Unexpected finds	▸ An unexpected finds procedure would be developed and included in the CEMP to provide a consistent method for managing any unexpected heritage items (both Aboriginal and non-Aboriginal) discovered during construction, including potential heritage items or objects, and human skeletal remains.
			▸ The procedure would define responsibilities, tasks, reporting requirements, and relevant guidelines and requirements. It would include the following:
			  ▸ if previously unidentified Aboriginal or non-Aboriginal heritage/archaeological items, relics, burial sites or potential human skeletal remains are uncovered during construction works, all works in the vicinity of the find shall cease and ARTC would be notified immediately. An appropriate buffer area would be established around the find
			  ▸ appropriate advice would be sought from a suitably qualified heritage consultant/archaeologist (and in consultation with the relevant division of the Department of Planning and Environment, as required)
			  ▸ works in the vicinity of the find would not re-commence until clearance has been received from the heritage consultant/archaeologist and ARTC
			  ▸ procedures and notification requirements for potential human remains in accordance with relevant guidelines.

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7 Visual amenity	The Visual Amenity Sub-plan would provide measures to minimise the potential impacts of the proposal during construction.	General worksite management	▸ An urban design and landscape plan would be prepared as part of the CEMP to provide mitigation and management measures for visual impacts, including (where relevant): ▸ screening laydown and work areas, and other ancillary sites (such as temporary workforce accommodation), to reduce visual impacts ▸ any existing ground surface or vegetation that has been disturbed in order to replace any existing track would be reinstated to match the adjoining landscape surface in order to maintain the current visual scene ▸ work sites would be maintained in a clean and tidy condition so far as reasonably practicable ▸ temporary hoardings, barriers, traffic management and signage would be removed when no longer required ▸ on completion of construction, all work sites, and other land occupied temporarily, would be rehabilitated in accordance with the rehabilitation strategy and any agreement conditions entered into with the relevant landowner ▸ the height of stockpiles would be minimised to the greatest extent possible to reduce their visual impact ▸ if required, spill mounds would be shaped to reduce their angular profile and ensure that they are integrated within the landscape. Sharp transition angles in the surface profile would be avoided and rounded profiles would be used to provide a more natural form. Grass cover would be established over the surface area in accordance with the rehabilitation strategy. ▸ Reinstatement, stabilisation and rehabilitation of disturbed areas would be undertaken progressively, consistent with the reinstatement (or equivalent) and rehabilitation plan, and any relevant and applicable individual property management agreements.
		Lighting	▸ No night-time construction works are planned. If, however this becomes a requirement, attenuation measures would be assessed and implemented, such as screening of sensitive receivers or limiting work hours. ▸ Light pollution from signalled crossings would be adequately screened from sensitive receivers. Temporary and permanent lighting would be designed and sited to comply with: ▸ AS 4292-1997 Control of the obtrusive effects of outdoor lighting ▸ Dark Sky Planning Guideline: Protecting the observing conditions at Siding Spring (Department of Planning and Environment, 2016).

Item/sub-plan	What would the plan address?	Issue	Management measures to be included in the CEMP and implemented during construction
8 **Social impact management**	A Social Impact Management Plan (SIMP) would be prepared as part of the CEMP. A Communication Plan would also be developed to engage with the community and individual landowners to build understanding and ensure preparedness for potential impacts. The strategy would incorporate communication protocols developed in the overall communications and engagement strategy as part of the overall EIS. The Communication Plan would provide guidance for the management of communication and consultation during the construction period, including objectives of consultation, stakeholders, contact mechanisms and protocols. It would be consistent with the consultation plan developed by ARTC, as described in Chapter 4. The plan would also include implementation and maintenance of a complaints register, and complaints handling and escalation procedures, consistent with ARTC requirements.	Communication and complaints	▸ Regular communications would be developed tailored to each stage of the construction program that focuses on awareness and preparedness for upcoming impacts, and would include: ▸ schedule updates and any upcoming milestones or activities that may increase local impacts ▸ changes to the local road network ▸ information on local employment ▸ information on how to provide feedback and complaints and communication details ▸ strategies to reach vulnerable communities. ▸ Contact details for a proposal response line and email address would be provided for ongoing stakeholder contact throughout the construction period. ▸ Staging of works would be undertaken to minimise disruption, in consultation with relevant stakeholder groups, to minimise impacts to community activities and functions. ▸ Relevant stakeholders would be notified regarding service disruptions in accordance with the Communication Management Sub-plan. ▸ A proposal-specific Workforce Management Plan would be prepared that sets out: ▸ participation goals and targets, including Indigenous, women and youth participation, with consideration of the proportion of the Indigenous population and workforce participation rates ▸ local skills gaps and potential workforce skills requirements, with apprenticeship and training participation targets. ▸ Workforce management protocols and strategies, including induction framework, code of conduct, drugs and alcohol policy, and worker support pathways. A Workforce Housing and Accommodation Plan would be implemented and would include: ▸ proposed workforce housing options ▸ management measures to ensure sufficient supply of short-term accommodation so as to not impact local supply for tourism, seasonal workforce and highway traveller demand ▸ plans for supporting the safe movement of workers to and from the work site daily ▸ consultation with Moree Tourism and local short-term accommodation providers to ensure the construction program is not having a material impact on availability.

Item/sub-plan	What would the plan address?	Issue	Management measures to be included in the CEMP and implemented during construction
			▸ Monitoring the local rental market to identify any changes in supply. A Community Health and Wellbeing Plan would also be developed and would include: ▸ strategies to promote community wellbeing ▸ local support mechanisms ▸ communications and engagement activities to directly support health and wellbeing.
9 Biodiversity management	The Flora and Fauna Management Plan (FFMP) would detail how construction impacts on aquatic and terrestrial flora and fauna would be mitigated, managed and monitored. The sub-plan would include measures to minimise the potential for biodiversity impacts, and would include but not be limited to: ▸ locations and requirements for pre-clearing surveys ▸ pre-clearing procedure and clearing protocol ▸ dedicated management actions for the Five-clawed Worm Skink thar will be informed by the Species Management Plan under development by ARTC with DPE ▸ dedicated management actions for the Braid Fern in the form of a protective buffer between the development footprint and the remaining suitable habitat for the Braid Fern, and other activities as recommended by DPE ▸ establishing protocols for the staged clearing of vegetation and safe tree felling and log removal to reduce the risk of fauna mortality ▸ survey for species in potential habitat to identify any additional populations ▸ where practicable, protection of native vegetation to be retained through mapping in sensitive area plans, and physical fencing through the use of star pickets with high visibility flagging/bunting and environmental exclusion zone signage ▸ best practice removal and disposal of vegetation, including separation and stockpiling of declared weeds, incorporation of recovered habitat features into revegetation, and identification of mulch stockpile locations and structure to	Vegetation management	▸ Pre-clearing surveys would be undertaken prior to clearing. The surveys and inspections, and any subsequent relocation of species, would be undertaken in accordance with the Flora and Fauna Management Plan (FFMP) in the CEMP. ▸ Pre-clearing surveys should identify potential fauna habitat, including habitat features such as trees containing hollows and/or nests, logs, bushrock and burrows. ▸ Specific surveys would include: ▸ surveys for roosting microbats and birds in structures, including telegraph poles and buildings, that are proposed to be removed ▸ searches for nest trees ▸ identification of hollow-bearing trees and logs requiring fauna management during removal ▸ surveys for koalas, which may include trained detection dogs or other appropriate survey techniques ▸ aquatic fauna salvage in watercourses or residual pools within 50 m of the construction footprint, and in areas that would be enclosed by silt curtains (e.g. piling locations). ▸ In areas to clear that are adjacent to areas to be retained, appropriate techniques must be used to prevent unauthorised disturbance. ▸ No stockpiling or storage within dripline of any mature trees. ▸ Topsoil stockpiles would be a maximum of 2.5 m in height to avoid heat sterilisation of seed bank.

Item/sub-plan	What would the plan address?	Issue	Management measures to be included in the CEMP and implemented during construction
	avoid tannin leaching ▸ staged removal of hollow-bearing trees and other habitat features such as fallen logs with attendance by a suitably trained fauna handler though the implementation of the clearing protocol ▸ weed management throughout the lifespan of the proposal to ensure that no increase to weed load occurs as a result of the works ▸ measures to avoid and minimise clearing of hollow-bearing trees, where practicable ▸ a waterway crossing design ▸ measures relating to the provision and management of nest boxes, including reuse of hollows and monitoring protocols ▸ an unexpected finds protocol ▸ measures to manage biosecurity risks in accordance with the *Biosecurity Act 2015* ▸ measures to reduce the risk of aquatic fauna mortality or injury ▸ stop works arrangements in the immediate area of the threatened species ▸ protocols and procedures for the use of suitably qualified, licensed and experienced fauna handlers/spotter catchers ▸ notification and communication protocol	Management of trees to be retained	▸ Clearing extents/site boundary/limit of works would be consistent with proposal extents defined in the Minister's Conditions of Approval and limited to that required to undertake the works. ▸ The clearing extents/site boundary/limit of works would be clearly defined with flagging or marking tape, signage or other suitable means to delineate no-go areas. This delineation and marking process would be incorporated and would align with the proposal flagging/marking tape process and specifications, to ensure that it aligns with the greater processes and does not conflict or contradict any of their demarcation. Proposal site boundaries are to be instated prior to any construction works commencing. ▸ The siting of temporary construction facilities compounds, stockpiles, mobile fuel storage, laydown areas, temporary access roads and staff parking would be in accordance with the proposal conditions of approval and sited to minimise the extent of disturbance. ▸ Construction areas including compounds, stockpiles, fuel storage areas, laydown areas and staff parking would be located and established outside the tree protection zone as defined in *AS4970-2009 Protection of trees on development sites* (Standards Australia, 2009). ▸ Trees to be retained would be protected prior to the commencement of construction in accordance with *AS4970-2009 Protection of trees on development sites* (Standards Australia, 2009).

Item/sub-plan	What would the plan address?	Issue	Management measures to be included in the CEMP and implemented during construction
	▸ adaptive management strategy.	Pre-clearance surveys—woody native vegetation	▸ Pre-clearance surveys would be undertaken by a qualified ecologist with relevant NSW licences, within areas of native vegetation that are to be cleared. Pre-clearance surveys would involve the following: ▸ the demarcation of areas approved for clearing to reduce risk of accidental clearing/disturbance of surrounding native vegetation ▸ likely habitat resources and habitat trees would be identified and marked. Habitat trees are those containing hollows, cracks or fissures and spouts, active nests, dreys or other signs of recent fauna usage. Other habitat features to be identified include fallen timber/hollow logs and burrows. Habitat features should be recorded as follows: – all habitat features to be clearly marked with >1 m spray painted in a highly visual colour (i.e. pink) 'H' on all sides of the feature – all features to be mapped using GPS or equivalent portable GIS software – each feature to be flagged with pink flagging tape, with unique identifying numbers written on tape – areas of potential Five-clawed Worm-skink habitat to be mapped – prepare report including detailed maps of habitat features, and locations to be incorporated into sensitive area plans. ▸ the potential presence of threatened flora and fauna species, endangered populations and threatened ecological communities (TECs) would be identified ▸ the identification of species or habitat features that are suitable for translocation or salvage ▸ in areas of koala habitat, visual inspection of trees for koalas prior to clearing. ▸ An ecologist would supervise the subsequent clearing of areas where damage to any trees 3 m, or greater, in height would occur; where arboreal fauna has been identified in, or adjacent to, the clearing front; where known and potential habitat trees, log piles, burrows, stags and nests may occur; and in areas identified as containing threatened fauna species, habitat and mapped Plant Community Type (PCT)/TECs.

Item/sub-plan	What would the plan address?	Issue	Management measures to be included in the CEMP and implemented during construction
		Pre-clearance surveys—bridges and culverts (micro-bats)	▸ Pre-clearance surveys would be implemented one day prior to the disturbance of culverts, with the potential to provide roosting habitat for micro-bats, and would involve: ▸ recording: – roosting species (if identifiable) – count/estimate of the number of roosting individuals – location and time of relocation (if applicable) or other actions taken to discourage the roosting of micro-bats. ▸ If roosting bats are identified, the bats would be left undisturbed until dusk. At dusk, roosting bats can be captured and released at a location to be agreed during preclearance surveys. Once bats have left roost, roost habitat to exclude re-entry. Measures such as using shade cloth, geofabric or expanding foam may be suitable to exclude bats. ▸ Survey report to be prepared detailing species, number, and relocation and/or other actions undertaken to discourage occupancy.
		Fauna habitat clearing: Five-clawed Work-skink	▸ Dedicated management actions for the Five-clawed Worm Skink to be informed by the Species Management Plan which is under development by ARTC with DPE.

Item/sub-plan	What would the plan address?	Issue	Management measures to be included in the CEMP and implemented during construction

		Tree-felling	▸ Tree clearing would be completed as close to the completion of pre-clearance surveys as practicable, so as to minimise chances of missing newly created habitat (such as nests or possum dreys).
			▸ Where the pre-clearing survey was completed more than 48 hours before the commencement of clearing, a re-inspection of the work area will be undertaken by the ecologist/licensed
			▸ Where sub-optimal or low-condition habitat is to be cleared, confirm any potential feature locations with clearing contractor
			▸ Any tree clearing procedure would include:
			  ▸ all habitat trees would be vigorously shaken with heavy machinery the day prior to clearing
			  ▸ on the day of habitat tree felling, the following would be undertaken:
			  – all habitat trees would be subject to a visual inspection for threatened species
			  – known and potential habitat trees to be felled with minimal impact—this will include use of arborists to section and lower hollow sections from trees, or use of excavators with grabs to avoid uncontrolled felling of trees. All reasonable attempts would be made to reduce the impact of felling on all fauna species
			  – the lowering of hollow-bearing trees would be done as gently as possible with heavy machinery
			  – if a native fauna species is identified in a habitat tree on the day of felling, the supervising ecologist or appropriately qualified fauna handler would advise the most appropriate method to minimise potential harm
			  – uninjured animals would be released on the day of capture into nearby suitable secure habitat and would not be held for extended periods of time
			  – injured animals would be taken to the nearest veterinary clinic or wildlife carer as soon as possible for assessment and treatment. If severely injured, fauna are to be euthanised onsite by a suitably experienced ecologist in accordance with OEH Code of Practice for Injured, Sick and Orphaned Protected Fauna.

Item/sub-plan	What would the plan address?	Issue	Management measures to be included in the CEMP and implemented during construction
			▸ Following felling, habitat trees would be inspected for remaining or injured fauna species and to ensure that no hollows are blocked against the ground. This may require the tree to be rolled to ensure adequate access. ▸ All hollows, fissures, logs and rocks to be checked by ecologist/spotter catcher post-felling or impacts, and any fauna present must be caught and safely housed in a well-ventilated area. Habitat features to be moved to allow all hollows to be inspected. ▸ Where practicable, hollows are to be inspected by ecologists using a torch and/or borescope within deeper fissures. A crowbar is to be used to crack open sections of dead limbs and check under bark. ▸ Records are to be kept of the number of hollows, number and species of individuals captured, and outcome of capture to incorporate into monthly environmental reporting. ▸ All felled habitat trees would remain in place for a least one night to allow any fauna still present to move on. ▸ Hollows from cleared hollow bearing trees would be salvaged and reused where possible. Chainsaw hollows and/or nest boxes would be provided to mitigate hollow bearing tree removal. ▸ All clearing would be undertaken under the supervision of a suitably qualified spotter catcher. Habitat features to be cleared in the presence of a trained ecologist or licensed wildlife handler. ▸ Scheduling of clearing activities would avoid breeding seasons, as far as reasonably practical. Clearing activities would avoid winter months to avoid risk of injury to hibernating or torpid reptiles, as far as reasonably practical. Where this is not practical and where breeding sites are identified within the corridor during pre-clearance surveys, a suitably qualified person would provide mitigation measures for exclusion zones/relocation requirements relevant to the specific species identified. Ideally, program clearing for late summer/early autumn. ▸ All practical measures would be taken to avoid removal of hollow-bearing trees during breeding and hibernation season (June to January) to mitigate impacts.

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		Fauna	▸ Vegetation maintenance on the habitat side of the fauna exclusion fencing associated with fauna passages would be undertaken to ensure that species cannot use vegetation to climb onto the exclusion fencing. ▸ Fauna fencing and adjacent vegetation clearance zones would be inspected and maintained during operation to retain the fauna fencing integrity.
		Fauna injury and mortality	▸ Speed limits would be implemented on access and haul routes to reduce the impact of vehicle strike mortality on native fauna. ▸ Requirements for pre-clearing surveys, including terrestrial and aquatic habitats, breeding habitats (including burrows and hollow bearing trees/logs, existing culverts and structures) would be implemented. ▸ Staged and sequential clearing protocols would be implemented. ▸ Animal handling protocols, including relocation and emergency care would be implemented. ▸ Site induction and regular toolbox talks to be held outlining information relating to flora and fauna. ▸ At the commencement of the proposal, pre-starts or kick off meetings to be conducted with relevant personnel by ecologist/environmental advisor prior to clearing.

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		Aquatic ecology	▸ Compounds and stockpile sites would be located an appropriate distance from riparian vegetation to avoid indirect impacts on aquatic habitat. ▸ Works within the riparian zone would minimise vegetation disturbance as far as practical. Where riparian vegetation is removed, revegetation of disturbed riparian areas would be undertaken using local native species and would include native in-stream macrophytes suited to the ephemeral nature of the watercourses, where applicable. ▸ Where it is not possible to work in the dry, a sediment or silt screen would be installed around the entire work area, attached to the same bank upstream and downstream of the work site so that it does not impede fish passage. Sediment or silt screens would be inspected daily and maintained to prevent the escape of suspended sediments. ▸ Temporary fencing or bunting is to be erected along marked riparian zones and drainage lines to protect significant environmental features. ▸ Sediment that has accumulated upstream would be managed to avoid sediment mobilisation. ▸ Any large debris (snags) would be salvaged and relocated upstream or downstream and aligned so that they point downstream, so that water is deflected towards the centre of the stream. ▸ Regular inspection and maintenance of instream structures would be undertaken to ensure their functionality is maintained and to minimise occurrence of accidental blockage of fish passage. ▸ Maintenance activities within or adjacent to watercourses would be conducted in accordance with relevant NSW policies and guidelines. ▸ In the event of a spill incident during construction, any impacted aquatic environments would be assessed for the presence of fauna. If necessary, salvage and recovery efforts would be undertaken.

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		Weed management	▸ A Biosecurity (or Weed and Pest) Management Sub-plan would be developed as part of the CEMP, which complies with the proposal conditions of approval, relevant regulatory requirements and guidelines. This would include: ▸ requirements for pre-clearing surveys, including weeds, pest animal presence or risk of presence—map existing extent and severity of weed infestation and to determine weed management requirements ▸ pest animal management, including cane toad mitigation ▸ site hygiene and waste management to deter pest animals ▸ weed surveillance and treatment during construction and rehabilitation activities ▸ pesticide and herbicide use, documentation and limitations on use, i.e. not used in sensitive environmental areas, drainage lines that flow to waterways and aquatic habitats, broadscale use does not result in an increased erosion and sediment risk) ▸ vehicle, machinery and imported fill hygiene protocols and documentation ▸ erosion and sediment control risk associated with broadscale weed removal or treatment ▸ any outbreak of priority and/or weeds of national environmental significance within, or immediately adjacent to, construction areas as a result of construction activity would be managed in accordance with the relevant regulatory requirements. ▸ Any herbicides would be applied such that impacts on surrounding agricultural properties are avoided. ▸ Suitability of cleared vegetation for mulching/erosion protection would be assessed on a site-by-site basis. ▸ Any vegetated material containing, or with the potential to contain, weed seed material would not be used for onsite mulching or erosion protection. ▸ Any mulch generated as part of the proposal would be re-used within appropriate timeframes and manners as specified in the ESCP and the Reinstatement and Rehabilitation Plan.

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		Biosecurity	▸ Priority weeds would be managed in accordance with the *Biosecurity Act 2015*. Weeds of national environmental significance would be managed in accordance with the *Weeds of National Significance Weed Management Guide* (Cooperative Research Centre for Australian Weed Management, 2003). ▸ Vegetation would be managed in accordance with the general biosecurity duty to prevent, eliminate or minimise any cross contamination and/or spreading of known weeds. ▸ The effectiveness of weed hygiene measures would be monitored as a component of the environmental monitoring procedure for the proposal.

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		Rehabilitation	▸ A Reinstatement and Rehabilitation Plan would be developed for the proposal, as a component of the CEMP. The Reinstatement and Rehabilitation Plan would include clear objectives for rehabilitation of native vegetation in temporary disturbances areas and would be supported by the urban design and landscape plan. These plans would be based on the Inland Rail Landscape and Rehabilitation Strategy, the Inland Rail Landscape and Rehabilitation Framework and property-specific reinstatement commitments. At a minimum, the reinstatement and rehabilitation plan would establish the following: ▸ timeframes for rehabilitation and/or reinstatement/stabilisation works to be achieved ▸ details of the actions and responsibilities to progressively rehabilitate, regenerate, and/or revegetate areas, consistent with the agreed objectives ▸ include rehabilitation requirements such as: – milling and removal of bitumen pavement – removal of any decommissioned culverts – tyning and ripping of base and sub-base material – application of soil ameliorants – topsoiling and/or compost blanket – stabilisation and rehabilitation (e.g. planting and or seeding). ▸ consideration for maintenance or performance issues of rehabilitation, e.g. vegetation that does not grow and obscure signals or impact the longevity of rail infrastructure ▸ procedures, timeframes, measurable performance objectives and responsibilities for monitoring the success of rehabilitation and/or reinstatement/stabilisation areas ▸ where temporary construction facilities are required, land would be returned to a stable condition that complies with the conditions of applicable landowner agreements and regulatory approvals.

Item/sub-plan	What would the plan address?	Issue	Management measures to be included in the CEMP and implemented during construction

			▸ The Reinstatement and Rehabilitation Plan would include the following specific measures to guide rehabilitation of land disturbed during construction of the proposal through revegetation:
			  ▸ pallets of locally endemic species, targeted to the structure and plant community type of the original landscape, would be used as part of rehabilitation
			  ▸ plantings would include complex mid-stratum to increase habitat for woodland birds and support small faunal movement
			  ▸ rehabilitation would be targeted around any fauna furniture or rail corridor crossing structures—dense mid-stratum of vegetation and connectivity with larger patches to be enhanced
			  ▸ rehabilitation would be used to enhance fauna habitat connectivity along movement corridors
			  ▸ felled timber and recovered habitat features would be incorporated in rehabilitation to enhance small mammal, reptile and invertebrate habitat
			▸ installation of nest boxes or assisted hollow augmentation would be considered.

Item/sub-plan	What would the plan address?	Issue	Management measures to be included in the CEMP and implemented during construction

10 Air quality and dust	An Air Quality and Dust Management Sub-plan would be prepared and implemented as part of the CEMP. It would include measures to minimise the potential for air quality impacts on the local community and environment. The sub-plan would address all aspects of construction, including:
	▸ spoil handling
	▸ machinery operating procedures
	▸ soil treatments (lime)
	▸ stockpile management
	▸ haulage
	▸ dust suppression
	▸ dust monitoring.
		Dust suppression-construction works	▸ Preconstruction baseline air quality monitoring would be undertaken for three months prior to construction, in accordance with the mitigation requirements specified in the EIS.
			▸ Where sensitive receivers are located within 1,500 m of construction works, or visible dust is generated, additional dust suppression measures (including water carts or sealing haulage routes) would be implemented.
			▸ Dust monitoring would be conducted at sensitive receiver locations and would move along the corridor with progression of construction works. Any exceedances of assessment criteria would be investigated:
			  ▸ to enable prompt identification and mitigation of activities producing excessive dust levels, monitoring and reporting for a shorter term averaging period would occur. For amenity issues, a 1-hour monitoring period would be implemented and for an assessment against the standards a 24-hour average would be undertaken
			  ▸ to establish the cause of any measured exceedances of assessment criteria, particularly during instances of region-wide dust events, a monitoring station at a location not expected to be impacted by construction activities would be used for the purpose of establishing local background concentrations. If a monitoring station is not already available, the contractor would install one.
			▸ Disturbed areas and exposed surfaces would be stabilised and protected as soon as reasonably practicable.
			▸ Dust generation would be visually monitored (visible plumes) throughout construction and visual inspections at the boundary of the disturbance footprint would be undertaken in areas in proximity to sensitive receivers, to inform where corrective actions are required.
			▸ Ground-disturbing activities should be avoided during windy conditions. When this is not practical, additional management measures would be implemented, such as enhanced watering of access roads and works areas, to minimise the potential increase in dust generation.
			▸ Additional dust suppression controls would be implemented prior to the onset of adverse weather, such as covering of stockpiles and additional watering of access roads.
			▸ Treatments would be incorporated in earthworks and landscape design of railway batters and other exposed surfaces.

Item/sub-plan	What would the plan address?	Issue	Management measures to be included in the CEMP and implemented during construction
		Dust suppression-vehicle movements	▸ Temporary access tracks would be defined and designed to minimise dust generation, e.g. appropriate surface treatments for the predicted construction traffic movements, installation of rumble grids, concrete pads or other physical measures to reduce trackout. ▸ Vehicle movements would be limited to designated entries and exits, haulage routes, and parking areas. ▸ Materials transported to and from the site would be covered to reduce dust generation in transit. ▸ Vehicles entering/existing the site would be visually inspected and additional controls implemented if corrective actions are required.
		Vehicle emissions	▸ All plant and machinery would be fitted with emission control devices complying with relevant Australian Standards. ▸ Machinery would be turned off when not in use and not left to idle for prolonged periods. ▸ Refuelling activities would be located and operated in accordance with a risk assessment, to minimise odour and air quality issues. ▸ The location of fuel tank storage locations, particularly where the separation distance to a sensitive receiver is less than 50 m, would be reviewed and refined. ▸ All construction plant, vehicles and machinery would be maintained in accordance with the manufacturer's recommendations.
		Communication	▸ Advance warning would be provided to sensitive receivers in relation to any significant dust-generating activities undertaken in close proximity to sensitive receptors.

Item/sub-plan	What would the plan address?	Issue	Management measures to be included in the CEMP and implemented during construction

11 GHG emissions and sustainability	A Sustainability Management Plan would be implemented as a sub-plan to the CEMP. *The Inland Rail Sustainability Strategy* (ARTC, 2019) and *Environment and Sustainability Policy* (ARTC, 2018) outline sustainability objectives, targets and commitments for the proposal, which include minimisation of GHG emissions. These commitments include the implementation of a Sustainability Management Plan, and the pursuit of a Program 'Excellent' rating against version 1.2 of the Infrastructure Sustainability Council of Australia's (ISCA) rating scheme. The Sustainability Management Plan would guide the design, construction and operation of the proposal, including management measures to reduce GHG emissions from the proposal.	GHG emissions	▸ Targets to reduce GHG emissions during construction would be included in the proposal's Sustainability Management Plan, in line with Inland Rail's Sustainability Policy, see Chapter 23 for more details.
			▸ As part of the ISCA IS rating, a GHG assessment would be undertaken based on the detailed design for the proposal and the final proposal when built would be carried out.
			▸ As per the *National Greenhouse and Energy Reporting Act 2007* (Cth), GHG emissions would be monitored and data reported to the Australian Government Clean Energy Regulator.
			▸ Vegetation removal would be minimised, where practicable, as detailed in the Flora and Fauna Management Plan.
			▸ Construction would be planned to minimise the construction program, avoid double handling of materials and minimise haulage distances, thereby minimising the use of fuel.
			▸ The idling time of haul trucks and mobile equipment should be kept to a minimum.
			▸ Energy efficiency design aspects would be incorporated into site offices wherever possible to reduce energy demand. Examples could include energy efficient lighting systems, natural ventilation, insulation and solar PV systems.
			▸ The procurement of energy efficient equipment for the site would be investigated, e.g. floodlighting, front end loaders and trucks, etc. Consider the procurement of equipment that uses lower GHG-intensive fuel, e.g. gas, ethanol.
			▸ Recycled content in sleepers and rail would be considered, where possible.
			▸ The procurement of materials, goods and services would be considered if they:
			  ▸ are from local suppliers
			  ▸ make use of recycled materials or materials with a low embodied energy content
			  ▸ are energy efficient or have low embodied energy minimise the generation of waste.
			▸ Temporary solar PV arrays or other renewable opportunities to provide electricity for construction activities should be investigated.
			▸ The sourcing of electricity and fuels with low GHG intensity, where practical, should be considered, e.g. biodiesel/ethanol mix for construction vehicles and equipment.

Item/sub-plan	What would the plan address?	Issue	Management measures to be included in the CEMP and implemented during construction
		ISCA	▸ The Sustainability Management Plan would be developed to guide the construction and operation of the proposal, and would: ▸ establish the roles, responsibilities and resourcing requirements for the embedding of sustainability throughout the design, procurement and construction of the proposal ▸ document the process for the identification, assessment and implementation of sustainability initiatives and opportunities, particularly those associated with the efficient use of energy, water and transport ▸ document the process to be used to manage the assessment, monitoring and review of sustainability against achieving the requirements of an 'Excellent' level of performance as measured against the requirements of version 1.2 of the IS Rating Scheme ▸ outline the documentation and reporting requirements necessary to demonstrate how sustainability has been incorporated into the proposal during design, construction and operation. ▸ The Sustainability Management Plan would outline the various sustainability initiatives implemented on the proposal and their associated Infrastructure Sustainability credits. This would support formal verification against version 1.2 of the Infrastructure Sustainability Council of Australia's (ISCA) Infrastructure Sustainability (IS) Rating Scheme for the 'As-Built' (construction) phase.

Item/sub-plan	What would the plan address?	Issue	Management measures to be included in the CEMP and implemented during construction
		Sustainability measures	▸ A broad range of sustainability initiatives would be required during the construction phase in order to achieve an overall 'Excellent' rating. An 'Excellent' rating indicates that the proposal is achieving Australian best practice in terms of sustainability. Key impact mitigation measures outlined in Chapter 23: Sustainability and Chapter 27: Approach to environmental management associated with the construction phase include: ▸ cut-and-fill balancing and minimisation of transport requirements for import/disposal of spoil: – maximisation of the use of onsite cut during construction, including refinements to horizontal and vertical alignments. This would reduce the quantity of offsite fill required – consideration of fill batter geometry to encourage cut-and-fill balancing – locally sourced materials during construction – sourcing materials with reduced embodied carbon and environmental impact where possible – earthworks materials assessment, including: topsoil stripping, unsuitable materials, material reuse, bulking factors, excitability and mass haul has been undertaken to reduce the net import of materials, export of waste and reduced transportation distances. ▸ topsoil stripping and preservation for re-use within proposal and or local area would be considered ▸ the possible re-use of work sites and haul roads associated with projects being pursued within the region or neighbouring regions would be considered ▸ opportunities for haulage and delivery via the rail network would be considered ▸ design specifications and treatment methodologies would be investigated to optimise the re-use of onsite or nearby material ▸ the possible re-use of recycled water and surplus water supply from landowners would be considered

Item/sub-plan	What would the plan address?	Issue	Management measures to be included in the CEMP and implemented during construction
			▸ the use of stand-alone solar power systems for provision of power at the site offices would be considered ▸ continuous improvement, sharing knowledge and lessons learnt from the innovations that have been approved on other Inland Rail projects would be incorporated ▸ adverse impacts to receiving water quality (surface water and groundwater) during construction would be minimised ▸ landscaping and environmental offsets would be implemented to mitigate vegetation clearing.

Item/sub-plan	What would the plan address?	Issue	Management measures to be included in the CEMP and implemented during construction

12 Spoil and waste	The waste management plan would detail how waste would be managed during construction to minimise the potential for significant impacts.
	It would include disposal requirements, measures to reduce, re-use or recycle wastes where possible. It would set targets for waste diversion, demonstrate how targets can be achieved, and outline how waste diversion would be tracked and reported.
	The plan would be prepared in accordance with the *Waste Classification Guidelines* (EPA, 2014).
	The waste management plan would comply with the conditions of approval and relevant regulatory requirements, detailing waste-management information, specifically including:
	▸ general protocols and performance objectives for keeping the worksite clean and tidy
	▸ processes for documenting waste volumes, types and how these would be compared to waste targets
	▸ contingency measures for managing unexpected volumes of waste or other exceptional circumstances
	▸ requirements for secure temporary storage, collection frequency and disposal/recycling requirements
	▸ procedures and reporting/documentation requirements for ensuring waste transporters and receivers are appropriately licensed according to the type of waste
	▸ requirements for training, inspections, audits, corrective actions, notification and classification of environmental incidents, record keeping, monitoring and performance objectives for handover on completion of construction.
	A spoil management strategy would be developed to define the preferred approach to managing spoil. The strategy would include:
	▸ confirming spoil quantities
	▸ undertaking appropriate investigations and surveys, including geotechnical investigations
	▸ consideration of the approvals and land application of waste exemptions required, associated lead time and any associated sampling and reporting obligations
		Waste management	▸ Resource management hierarchy principles would be followed:
			  ▸ avoid—maximise efficiency and avoid unnecessary consumption through avoiding waste-generating products and behaviours
			  ▸ reduce/treat—maximise efficiency and avoid unnecessary consumption through reducing the quantities of waste-generating materials and behaviours required to be undertaken within the proposal
			  ▸ re-use—re-use, recycling, and reprocessing consistent with the most efficient use of the recovered resources
			  ▸ dispose—some types of waste, such as hazardous chemicals or asbestos, cannot be safely recycled and direct treatment or disposal is the most appropriate management option.
			▸ Waste material, including soil and spoil to be taken offsite, would be classified and managed in accordance with the *Waste Classification Guidelines* and would be disposed of in accordance with the *Protection of the Environment Operations Act 1997* (NSW) (POEO Act).
			▸ All cut material of appropriate suitability (as per organisational specifications) should be stockpiled separately and reused onsite where possible.
			▸ Construction materials should be purchased in bulk, where possible, to minimise packaging waste.
			▸ Appropriate waste bins, facilitating segregation of waste, would be located at key site compounds to facilitate segregation and prevent cross contamination.
			▸ Waste chemical containers, product and used spill kit materials, would be disposed of in accordance with relevant legislation.
			▸ Concrete washout would be undertaken within a signposted, designated and bunded area, and would be collected and disposed of at a licensed facility.
			▸ All waste documentation would be collated and maintained on file in accordance with these guidelines.
			▸ Waste material would not to be left onsite once the works have been completed.
			▸ Working areas would be maintained, kept free of rubbish and cleaned up at the end of each working day.
			▸ Any waste material identified as being contaminated would be managed in accordance with the *Contaminated Land Management Act 1997* (NSW) and other relevant legislation and guidelines.

Item/sub-plan	What would the plan address?	Issue	Management measures to be included in the CEMP and implemented during construction
	▸ consultation with landowners that have borrow pits located on their property ▸ defining the preferred option for reusing and/or disposing of any spoil not able to be reused at borrow pits. The outcomes of the strategy would inform the construction waste management plan.		▸ Any hazardous or dangerous waste (e.g. asbestos, chemicals, oils) would be correctly stored and managed onsite, and, if necessary, disposed of by a licensed contractor or facility and in accordance with the relevant state occupation health and safety legislative and regulatory obligations. This includes wastes generated as a result of demolition. ▸ The removal, handling and disposal of any asbestos-containing materials would be undertaken by an appropriately licensed contractor and in accordance with: ▸ Code of Practice for the Safe Removal of Asbestos 2005 ▸ Code of Practice for the Management and Control of Asbestos in Workplaces 2005.
13 Health and safety	A Workforce Safety Plan that references the ARTC Safety Management System would be prepared and would outline any specific actions to ensure the safety of workers across the proposal area.	Workplace health and safety	▸ Hazards and risks associated with construction activities would be identified prior to construction. ▸ A process for regularly reviewing work practices/procedures would be implemented throughout construction to identify, report and respond to any new environmental hazards/risks. ▸ Site-specific workplace health and safety plans, and safe work method statements, would be developed and implemented in accordance with work health and safety requirements. ▸ The Workforce Safety Plan would be in addition to other sub-plans relating to the storage of hazardous materials, the management of spills and traffic. ▸ A proposal-specific Health and Community Wellbeing Plan would also be prepared in consultation with local stakeholders (i.e. Council, landowners, community groups, local service providers) to identify actions to manage and monitor community health and wellbeing.
14 Emergency response	An Emergency Response Sub-plan would be prepared to address protocols and procedures to be followed during emergency situations (including bushfires, fires, explosions, flooding and inundation).	Emergency response	The plan would include: ▸ evacuation procedures ▸ details of traffic management measures to be implemented during emergencies ▸ design and management measures to address the potential environmental impacts of an emergency situation ▸ training programs to ensure that all staff are familiar with the plan.
		Bushfire	High fire-risk activities, such as hot works including flash-butt welding, would be carried out in accordance with ARTC's *Fire Prevention Management Procedure* (ARTC, 2007) and *Total Fire Bans Procedure* (ARTC, 2019). These procedures would be followed to establish processes to manage hot work/high fire-risk activities, including observation of relevant Queensland Fire and Emergency Service directives, checking the extent of worksite vegetation prior to hot work, and ensuring appropriate firefighting equipment and trained personnel are available.

F2 CEMP structure

TABLE F2-2 CEMP STRUCTURE

Primary document	Tier 1: sub plans	Supporting plans / procedures / strategies
CEMP	Soil and Water Management Plan (SWMP)	Erosion and Sediment Control Management Plan (ESCMP)
		Surface Water Quality Monitoring Plan
	Flood Emergency Response Plan	–
	Groundwater Mitigation and Management Plan (GWMMP)	–
	Contaminated Land and Hazardous Materials Management Plan (CLHMMP)	–
	Emergency Spill Response Plan	–
	Traffic Management Plan (TMP)	Construction Traffic, Transport and Access Management Plans
		Road Dilapidation Report
		Road Safety Audit
	Construction Noise and Vibration Management Plan (CNVMP)	
	Heritage Management Plan	Dilapidation Study
		Vibration assessment
	Visual Amenity Plan	Urban Design and Landscape Plan
	Reinstatement (or equivalent) and Rehabilitation Plan	–
	Social Impact Management Plan (SIMP)	Communication Plan
		Workforce Management Plan
		Workforce Housing and Accommodation Plan
		Community Health and Wellbeing Plan
	Flora and Fauna Management Plan (FFMP)	Biosecurity Management Plan
		Microbat Management Procedure
		Tree Felling Procedure
		Habitat Relocation and Salvage Procedure
		Dewatering Procedure for Standing Pools
		Animal Handling Protocols
	Air Quality and Dust Management Plan	–
	Waste Management Plan	Spoil Management Strategy
	Workforce Safety Plan	–
	Emergency Response Plan	–
	Sustainability Management Plan	Local Material Sourcing Strategy