APPENDIX F

Utilities management framework

ILLABO TO STOCKINBINGAL ENVIRONMENTAL IMPACT STATEMENT

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F.1 Introduction

Construction work for the proposal would require the relocation or adjustment of utilities due to conflicts with the location of infrastructure. Utilities would also require protection from potential impacts during construction of the proposal, including potential contact with underground utilities during excavation, or collision of plant and equipment with aboveground services.

If utilities are not managed adequately, by adjusting, relocating, or protecting them prior to construction, there would be the potential for rupture or breakage of connections. This could lead to service disruptions and/or pose a hazard in the form of electrocution, release of sewage from a wastewater main, or fire if a gas main is impacted.

Preliminary investigations and consultation have identified that a number of utilities—owned by Telstra, Optus, Essential Energy, Goldenfields Water, APA and NBN—would need to be relocated, adjusted or protected. Generally affected utilities as part of construction are:

- high and low voltage electrical power lines
- water mains and pipelines
- sewer mains and pipelines
- overhead telecommunications
- buried telecommunications
- buried high-pressure gas pipelines.

These utility relocations and adjustments would generally be contained within the proposal site and have therefore been considered as part of the environmental impact assessment undertaken in the EIS; however, consultation with utility providers is ongoing and confirmation of the final treatment solution would occur during detailed design. Therefore, there may be instances were a utility needs to be relocated outside of the proposal site. To identify potential impacts associated with these works, a risk-based approach has been adopted and is contained within this utilities management framework (UMF).

This document provides an overview of the type and location of utilities potentially affected by construction and operation of the proposal and the principles and practices that would apply to the management of utilities during the construction of the proposal. It includes a list of active utilities located within and/or crossing the proposal site with the potential to be affected by construction of the proposal, and outlines the approach to management of these utilities at a strategic level.

Generally, low-impact activities, such as utilities relocation and adjustments, are considered outside the definition of construction for the purposes of planning approval; unless, for example, the potential exists for impact to heritage items or threatened species, in which case the activity would be addressed as a construction matter in the construction environmental management plan (CEMP). Should the proposal be approved, it is anticipated that conditions of approval for the proposal would require preparation of a CEMP, requiring details of the required utilities-related activities (i.e. relocation, adjustment and protection works) during the construction phase.

This utilities management framework (UMF) provides a mechanism for identifying, assessing and minimising impacts to the public because of the required utility relocations, adjustments or protection.

F.2 Utilities overview

The location of utilities, within or crossing the proposed rail corridor, has been determined by the design team to the current stage of the proposed design. The location was confirmed based on Dial Before You Dig plans, third-party data and field investigations involving utility cable location. A summary of the number of utilities that either cross the rail corridor, or are located within the rail corridor, is provided in Table F-1.

TABLE F-1: PROPOSAL UTILITY OVERVIEW

Service type	Number of crossings	Asset owner
Gas	2	APA
Electricity	12	Essential Energy
Communications	12	Telstra, Optus, NBN
Water/Wastewater	2	Goldenfields Water

F.3 Approach to utilities management

To ensure a consistent approach across all proposal activities, the following steps would be undertaken to determine the utilities management requirements for the proposal:

- confirm utilities requiring relocation or protection works
- confirm preferred approach and design refinement
- detailed assessment
- ongoing consultation with asset owners and relevant stakeholders
- construction management.

These stages are described in further detail in the sections below.

F.3.1 Confirm utilities with the potential to be impacted

Utility locations were initially determined from Dial Before You Dig data sources and other third-party supplied data. Additional survey data, comprising non-destructive methods, was also gathered to more accurately determine the alignment and level of services within, or crossing, the rail corridor.

Utilities identified in this manner were mapped using a web-based GIS program. This mapping was overlain with the proposed rail corridor, which was established as 20 metres (m) either side of the proposed rail centreline.

Major utilities within the rail corridor were identified as potentially requiring protection, adjustment or relocation works, and further information regarding these utilities was then obtained, including owner and type. Through project development and detailed design, further assessment is required to confirm those major utilities that require relocation or protection works where they are in conflict with the proposal.

F.3.2 Confirm preferred approach

The design team has determined a proposed treatment for those utilities within the rail corridor with the potential to be impacted by the proposal. This proposed treatment will be further refined in consultation with the utility owners as the design progresses. As noted above, no initial assessment has been undertaken of those utilities located outside the rail corridor but within the proposal site. Survey pickup of utilities located in several properties could not be completed due to access restrictions. Assumptions around the likely locations of these utilities were made based on aerial photography, Dial Before You Dig information and visual inspection from accessible areas.

However, one or more of the following would likely need to be undertaken for utilities located within the proposal site:

- diverting the utility around the proposal site
- adjusting the utility, including, for example, raising of overhead power lines to meet minimum clearance requirements or replacement of electricity poles
- relocating the utility either vertically or horizontally
- wrapping and supporting the utility to provide mechanical protection
- providing physical protection where the utility is not directly impacted by works but has the potential to be impacted either due to construction vibration or accidental impact. This could include:
  - demarcating the location of the utility, either through fencing or marking, to minimise the potential for accidental damage
  - providing a barrier between the location of the utility and the works location such as a piled wall or steel plates
- modifying construction methods to avoid impacting nearby utilities, such as using hand excavation or compaction tools.

F.3.3 Detailed assessment

Designs would be further developed in consultation with the utility owners. Work plan packages would be issued to each utility owner and would include typical utility relocation sketches as well as information regarding the following:

- proposal name
- proposal location
- utility owner details
- the proposed utility protection/relocation methods that would be used.

Following receipt of this package, the utility owner would confirm whether the proposed treatment approach is acceptable or whether further refinement is required to meet the relevant utility owner's specification.

F.3.4 Ongoing consultation with asset owners and relevant stakeholders

To manage integration with utility owners, ARTC has established an enabling works team to manage utility interfaces.

Ongoing consultation with all relevant utility owners and other stakeholders, including the Junee Shire Council, Temora Shire Council and Cootamundra-Gundagai Regional Council would be undertaken as the design progresses, through the enabling works team. ARTC would ensure a point of contact is obtained for Telstra, Optus, Essential Energy, Goldenfields Water, APA and NBN.

Construction works with the potential to directly or indirectly impact utilities would be coordinated with the relevant utility owners. This would include consideration of any proposed utility upgrades and access requirements, to ensure that access to utilities within the proposal site is maintained, where required.

F.4 Environmental assessment and approval

Adjustments and relocations within the proposal site would be undertaken in accordance with a work method statement provided in the CEMP. For relocations outside the proposal site, the need for additional assessment and approval would be determined in line with the approach to design refinements for the proposal, described in Chapter 6—Alternatives and proposal options.

F.4.1 Overview and context

As noted in section F.2, a number of utilities are present in the proposal site and would need to be adjusted, relocated and/or protected to enable construction. In addition, there is the potential for unidentified underground utilities to be present within the proposal site. If utilities are not adequately managed prior to construction, the potential rupture of underground utilities during excavation or collision of plant and equipment with aboveground services could pose risks to public safety. Rupture or contact with services during works could also result in releases and/or short-term outages, as could the relocation of utilities and services.

Potential impacts on utilities

Construction would have the potential to impact on utilities as a result of works along the length of the proposal site but primarily in the vicinity of the town of Stockinbingal and when crossing roads and existing rail corridors.

In most cases, utility impacts would be minimised by protecting utilities in place or, where required, constructing a replacement utility ahead of re-connection, thus minimising the duration of outages. Connection activities would be undertaken during planned periods of disruption, which would be notified in advance to affected communities; however, there is also the possibility of accidental damage or incidents if utilities are uncovered in locations not previously identified, leading to unplanned disruptions. Such disruptions can result in impacts to the operation of utility networks.

All works would be undertaken in accordance with the requirements of the relevant asset owners, which would be determined following consultation.

Utilities relocation/adjustment

The preliminary investigations have only identified utilities within the proposed rail corridor that would likely be impacted by the proposal. There are likely to be other utilities that have not been identified yet that would require relocation or adjustment outside of the rail corridor; however, the majority of utilities that would require relocation or adjustment are likely to be relocated within the proposal site. Therefore, the works associated with relocating these utilities would be consistent with the typical construction activities identified and assessed in the EIS.

There is potential that some utilities that have not yet been identified would require relocation outside of the proposal site. In addition, depending on the utility and the utility owner's requirements, it may not always be possible to divert the utility at the point of intersection with the proposal, requiring consideration of impacts upstream and downstream of the proposal site. These impacts would be considered on a case-by-case basis, using the risk-based approach discussed in section F.4.2.

F.4.2 Risk-based environmental assessment

A risk-based approach would be used to assess the potential impacts associated with utility works. This approach would consider the type and location of the proposed utility works and the potential impacts associated with the utility works, and then assign a risk rating to the works, which would guide the mitigation and management measures to be applied. Typical environmental impacts that could result from utility works are identified in Table F-2. This list is not exhaustive and should be used as a guide only for likely matters to consider.

TABLE F-2: POTENTIAL ENVIRONMENTAL IMPACTS ASSOCIATED WITH UTILITY WORKS

Aspect	Potential impacts
Traffic, transport and access	▸ Construction traffic impacts, including temporary delays to local and regional traffic ▸ Impacts to emergency services through delays in access due to works ▸ Impacts on access to private properties during construction ▸ Impacts to rural roads through closure and/or deviations during construction.
Biodiversity	▸ Clearing of native vegetation resulting in loss of fauna habitat, habitat fragmentation and loss of connectivity ▸ Impacts to tree protection zones where works are in proximity to trees ▸ Increased potential for the occurrence and spread of pest plants and animals from movement of vehicles, machinery and material ▸ Indirect impacts due to increased dust, sedimentation and erosion, noise and light ▸ Fauna mortality from vehicle strikes.
Noise and vibration	▸ Noise impacts on local residents and sensitive receivers from construction activities ▸ Noise impacts on local residents and sensitive receivers from construction traffic ▸ Vibration impacts due to utility removal/installation techniques (e.g. horizontal directional drilling or trenching).
Air quality	▸ Generation of dust during construction (from exposed soil/stockpiles, excavation, and vehicle movements) ▸ Emissions from vehicles or plant during construction.
Soils and water quality	▸ Impacts associated with the disturbance of potentially contaminated soils or acid sulphate soils (ASS) during construction ▸ Increased erosion and sedimentation due to excavation activities and vehicle movement ▸ Contamination due to spills and leaks during construction.
Aboriginal heritage	▸ Potential disturbance to identified items/sites of Aboriginal heritage significance ▸ Potential disturbance to identified areas of potential archaeological deposits ▸ Unexpected finds during utility relocation/adjustment works.
Non-Aboriginal heritage	▸ Potential intrusion within heritage curtilage ▸ Potential indirect impacts to heritage buildings/fabric from vibration.
Landscape and visual	▸ Adverse impacts on landscape character during construction, due to erection of fencing, barricades and lighting ▸ Light impacts from out-of-hours work during construction ▸ Rehabilitation of land following the utility works ▸ Adverse visual impacts during operation due to the presence of, or changes to, utility infrastructure.
Land use and property	▸ Temporary impacts on land use during construction ▸ Potential changes to, or requirements for, easement arrangements for utilities ▸ Impacts on agricultural practices during construction activities as a result of changes to access, noise, and air pollution ▸ Impacts on businesses, land users and landowners/occupiers, due to outages during works.
Health and safety	▸ Impacts associated with abrasive blasting including the potential contamination of soil/water and exposure to asbestos ▸ Potential for fire or injury to personnel due to welding.

This risk-based approach is underpinned by the principles of the Australian and New Zealand standard (AS / NZS) *ISO 31000:2009 Risk Management—Principles and Guidelines* (Standards Australia, 2009). The definitions of consequences and likelihood that would be applied are provided in Table F-3 and Table F-4, respectively. The risk rating would then be determined by combining the consequence and likelihood to identify the level of risk, as shown in Table F-1.

TABLE F-3: CONSEQUENCES OF OCCURRENCE

Consequence level	Definition
Extreme	▸ Multiple but localised fatalities occur ▸ More than 5 days track closure ▸ More than 5% of program budget (i.e. > $500 million in $10 billion) ▸ More than 10% of project budget (e.g. > $10 million in $100 million) ▸ Widespread long-term or permanent environmental damage—remediation required ▸ Prosecution of the company and/or its office holders ▸ Corporate loss of shareholder and/or customer support (tangible business impact >3 years) ▸ Influences schedule >10% of program approved schedule period ▸ Influences schedule >20% of project approved schedule period.
Major	▸ Single fatality occurs ▸ More than 48 hours to 5 days track closure ▸ More than 1.5% to 5% of program budget (i.e. >$150 million to $500 million in $10 billion) ▸ More than 2.5% to 10% of project budget (e.g. $2.5 million to $10 million in $100 million) ▸ Considerable environmental damage requiring remediation ▸ Prohibition notice or fine(s) ▸ Strategic intervention required (more than 18 months to 3 years) ▸ Influences schedule more than 5% to 10% of program approved schedule period ▸ Influences schedule more than 10% to 20% of project approved schedule period.
Moderate	▸ Serious injury occurs ▸ More than 24 hours to 48 hours track closure ▸ More than 0.5% to 1.5% of program budget (i.e. more than $50 million to $150 million in $10 billion) ▸ More than 0.5% to 2.5% of project budget (e.g. more than $500,000 to $2.5 million in $100 million) ▸ Localised/clustered environmental damage—requiring remediation ▸ Improvement notice or threatened action ▸ Tactical (business unit/divisional) intervention required (more than 3 months to 18 months) ▸ Influences schedule more than 2.5% to 5% of program approved schedule period ▸ Influences schedule more than 5% to 10% of project approved schedule period.
Minor	▸ Lost time injury results OR medical treatment required ▸ More than 6 hours to 24 hours track closure ▸ More than 0.05% to 0.5% of program budget (e.g. > $5 million to $50 million in $10 billion) ▸ More than 0.1% to 0.5% of project budget (e.g. > $100,000-$500,000 in $100 million) ▸ Isolated environmental damage—minimal ARTC remediation required ▸ Notice to produce information ▸ Management intervention required (more than 7 days to 3 months) ▸ Influences schedule more than 1% to 2.5% of program approved schedule period ▸ Influences schedule more than 2% to 5% of project approved schedule period.
Not significant	▸ No medical treatment required ▸ Up to 6 hours track closure ▸ Up to 0.05% of program budget (e.g. to $4 million in $10 billion) ▸ Up to 0.1% of project budget (e.g. to $100,000 in $100 million) ▸ Contained environmental damage—fully recoverable (no cost or ARTC action required) ▸ Minimal or no regulatory involvement ▸ Isolated event able to be resolved (up to 7 days) ▸ Influences schedule up to 1% of program approved schedule period ▸ Influences schedule up to 2% of project approved schedule period.

TABLE F-4: LIKELIHOOD AND PROBABILITY OF OCCURRENCE

Likelihood	Description	Frequency of occurrence	Percentile
Almost certain	Expected to occur in most circumstances	Once per month	> 90%
Likely	Probably occur in most circumstances	Between once a month and once a year	60%–90%
Possible	Might occur at some time	Between once a year and once in five years	30% ≤ 60%
Unlikely	Could occur at some time	Between once in five years and once in 20 years	10% ≤ 30%
Rare	May occur in exceptional circumstances	Once in more than 20 years	< 10%

	Consequence				
Likelihood	**Not significant**	**Minor**	**Moderate**	**Major**	**Extreme**
Almost certain	Medium	Medium	High	Very high	Very high
Likely	Low	Medium	High	Very high	Very high
Possible	Low	Low	Medium	High	High
Unlikely	Low	Low	Low	Medium	Medium
Rare	Low	Low	Low	Low	Medium

FIGURE F-1: ENVIRONMENTAL RISK ASSESSMENT MATRIX

The risk approach would follow the below steps:

- **Step 1**—Identify the activities required to undertake the utility works, including the following:
  - the location
  - the proposed plant and equipment
  - whether additional construction compounds are required
  - whether changes in access are required
  - the duration/hours of works and the need for night-time works.
- **Step 2**—With reference to the potential environmental impacts listed in Table F-2 and the activities identified during Step 1, undertake a risk assessment using the consequence, likelihood and risk ratings shown in Table F-3, Table F-4 and Figure F-1.
- **Step 3**—Based on the overall risk rating identified in Step 2, apply relevant mitigation measures as per those identified in Table F-5 to reduce the risk.

F.5 Construction management

Construction, including utility works, would be managed in accordance with the requirements of ARTC's Construction Environmental Management Framework and the CEMP for the proposal (Appendix E). The CEMP and associated issue-specific sub plans would include the mitigation measures identified in the EIS, the relevant conditions of approval and any construction management measures required to manage construction-related impacts, including those associated with utility works.

Notwithstanding this, typical construction management measures that could be adapted to specific utilities work are provided in Table F-5.

TABLE F-5: EXAMPLE MANAGEMENT MEASURES

Environmental aspect	Potential impacts
Traffic, transport and access	▸ A road condition survey would be undertaken on any roads with the potential to deteriorate as a result of the proposal, before and after construction. Defects arising from construction access would be rectified. ▸ Maintenance works to re-instate road surfaces would be undertaken as soon as practicable following trenching works. ▸ Potentially affected property owners and residents would be contacted before the commencement of works. Residents would be notified via door knocks, newsletters or letter box drops providing information on the proposed works, working hours and a contact name and number should any complaints wish to be registered. ▸ Property access would be maintained at all times unless otherwise agreed with affected property owners. Where changes to access arrangements are necessary, owners and tenants would be advised and consulted in regard to alternative access. ▸ Open trenches would be filled or covered using road plates at the end of each day to minimise impacts on vehicular access to properties. ▸ The requirements of the Roads Act 1993 (NSW) would be followed at all times prior to and during all work (i.e. notice requirements, consultation and consent/concurrence requirements for work within public and classified roads). ▸ Trenching across roads would be undertaken progressively to ensure that one trafficable lane remains open at all times. ▸ Vehicle use will be restricted to designated access tracks as per the Traffic Management Plan under the CEMP. ▸ Appropriate speed limits for construction traffic on unsealed roads and access tracks would be implemented to minimise dust generation. ▸ Temporary hoardings, barriers, traffic management and signage would be removed when they are no longer required during the construction phase.
Biodiversity	▸ Where vegetation clearing is required, pre-clearing surveys would be undertaken prior to construction. The surveys and inspections, and any subsequent relocation of species, would be undertaken in accordance with the biodiversity management sub-plan in the CEMP. The extent of clearing would be 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 align with the project flagging/marking tape process and specifications, to ensure that it aligns with the greater project processes and does not conflict or contradict any of their demarcation. ▸ Clearing of mature and hollow-bearing trees would be avoided, where possible. ▸ If excavations are unattended, or are required to remain open for a period of time, barricading would be placed around the excavation to prevent the ingress of fauna. Steel plates may be used to cover smaller excavations. Escape ramps would be provided for fauna in larger excavations. ▸ Open trenches would be checked each morning, prior to the commencement of construction, to salvage any fauna that have fallen in and move them to a safe (and appropriate) nearby location. ▸ Fauna, including injured fauna that may have fallen in trenches, would be handled by an appropriately experienced wildlife carer or licensed ecologist. ▸ Habitat features (e.g. hollow logs, branches and woody debris) would be salvaged and relocated, where possible. ▸ Priority weeds would be managed in accordance with the Biosecurity Act 2015 (NSW). Weeds of national significance would be managed in accordance with the Weeds of National Significance: weed management guides. ▸ Any herbicides would be applied such that impacts on surrounding agricultural properties are avoided.

Environmental aspect	Potential impacts
Noise and vibration	▸ Noise-generating activities would be undertaken at appropriate times, avoiding early morning and late afternoon when background noise levels are lower. ▸ Respite periods would be provided if high noise levels are generated. ▸ The spread (or area of land occupied) of plant and equipment would be minimised. ▸ All plant and equipment would be maintained in good working order and regularly serviced. Where practical, plant and equipment would be fitted with noise abatement devices such as mufflers, silencers and screens. ▸ Vibration monitoring would be required at locations where the potential for building/structural damage risk is identified. ▸ Surrounding residents would be informed by mail of planned works prior to the works commencing. ▸ The ARTC Community Engagement Tram or service provider would provide a community liaison phone number and permanent site contacts so that noise and/or vibration-related complaints or inquiries can be received and addressed in a timely manner. ▸ The site would be organised to avoid unnecessary use of reversing alarms on vehicles. ▸ Truck drivers would use approved access routes to the site. ▸ Equipment would be turned off when not in use and idling machinery or trucks near sensitive receivers would be avoided. ▸ Vehicles, obstacles and stockpiles onsite would be used to provide shielding to receivers, where possible. ▸ Dropping tools or materials from height, striking materials or making metal–metal contact would be avoided. ▸ Workers would be educated on the importance of minimising noise and avoid creating short duration high noise level events. ▸ Equipment such as a compactor and tipper trucks would be selected based on lower noise emissions and equipment would be used that has lower noise levels.
Air quality	▸ Air quality impacts relating to dust generated during construction (e.g. vehicles on unsealed roads) would be visually monitored by construction staff. ▸ If dust generation is evident, measures such as road watering, minimising vehicle movements and reducing vehicle speed limits would be carried out to minimise dust impacts. ▸ Stabilisation and revegetation of disturbed areas would be undertaken as soon as practicable. ▸ Sealed access roads would be used where they are available. Access points would be inspected to determine whether material is being transferred to the surrounding road network. Roads would be swept as required to control dust generation. ▸ Any dust complaints would be investigated as soon as possible, and measures taken to manage any impacts identified. ▸ Plant and machinery would be turned off when not in use, wherever possible, and would be fitted with emission control devices complying with Australian Design Standards. ▸ Construction plant and equipment would be maintained in good working condition. ▸ No burning of any materials would occur. ▸ During transportation, loads would be adequately covered. ▸ Exhaust emissions from stationary equipment, such as generators, would be directed away from residential properties.
Soils and contamination	▸ Sediment and erosion controls would be installed before the commencement of earthworks. ▸ The following would be adopted in relation to stockpile management: ▸ stockpiles would be located within designated areas only, away from drainage lines ▸ stockpiles would be positioned up-slope of sediment control barriers ▸ stockpile height would be limited to 2.5 m ▸ the stockpiles would be covered, or their surface stabilised, with a suitable material to prevent erosion and sediment loss. (Note: This is mainly for medium- to long-term storage, not short term). ▸ Erosion and sedimentation controls would be checked and maintained regularly and would be maintained until ground stability is achieved. ▸ High-risk soil erosion activities, such as earthworks, would not be undertaken immediately before or during high rainfall or wind events. ▸ During excavations, topsoil and subsoil would be removed and stockpiled separately (preferably on the uphill side of the excavation). Subsoil would be backfilled into the excavation first, and topsoil then respread over the disturbed area to aid in rehabilitation, to provide suitable soil material for establishment of groundcover vegetation. ▸ The period for which temporary excavations are left open would be minimised. ▸ Work would cease during heavy rainfall events when there is a risk of sediment loss offsite or ground disturbance due to waterlogged conditions.

Environmental aspect	Potential impacts
	▸ Dry street sweepers or hand-held brooms would be used to clean access roads in the event of tracked sediment. ▸ Equipment, plant and materials would be placed in designated lay-down areas where they are least likely to cause erosion or damage to vegetation. ▸ Erosion control devices, and any sediment trapped by the devices, would be removed once work is complete. ▸ Activities resulting in the removal or disturbance of soil and groundcover vegetation would be assessed to determine rehabilitation requirements. ▸ Rehabilitation would be undertaken as soon as practicable following works to promote ground stability and should include, as a minimum, reinstating ground cover (may include applying hydromulch or laying turf). ▸ Prior to the acceptance of any imported fill onsite (regardless of volume), the following actions would be taken to reduce the risk of receiving contaminated material: ▸ all fill used would be checked to confirm it is virgin excavated natural material (VENM) (e.g. clay, gravel, sand, soil or rock) or excavated natural material (ENM) (e.g. naturally occurring rockand soil) that is not mixed with any other waste ▸ the supplier would provide formal certification that the fill material is clean VENM or ENM ▸ the supplier would provide information on what activities previously occurred onsite where their fill was sourced ▸ for ENM, a NSW EPA excavated natural material order would be obtained and conditions implemented ▸ signs of contamination would be checked for, such as odours (chemical/petrol), staining from chemicals, and rubbish such as bricks, timber, and Masonite ▸ the delivery of the material would be supervised to check the material received matches the material ordered ▸ material from a known or potentially contaminated site would not be accepted without EPA approval ▸ all required documents and records would be maintained. ▸ An unexpected findings protocol pertaining to contamination would be included in the CEMP for the proposed utilities work. The protocol would include procedures for the assessment and management of unexpected contamination encountered (if any) during construction. Awareness training would be provided for all onsite staff to assist in the identification of potentially contaminated material. ▸ Should suspected soil contamination be found onsite, works would be stopped immediately. Unexpected soil contamination could include but not be limited to: ▸ unexpected staining or odours ▸ potential ACM ▸ unexpected underground storage tanks, buried drums or machinery, etc. ▸ In areas of known or potential soil contamination, soil stockpiles would be contained to prevent the spread of soil to surrounding land and water, and excess soil would be disposed of at an EPA approved and licensed waste facility in accordance with EPA waste guidelines. ▸ Spill containment kits would be present and maintained onsite during all activities. ▸ All staff would be inducted about incident and emergency procedures and made aware of the locations of spill containment kits. Information regarding the correct and safe storage and handling of fuels and chemicals would be communicated to personnel. ▸ Material contaminated as a result of a spill (e.g. soil) would be removed (i.e. dug out), placed in an appropriate container to prevent further contamination and disposed of at an EPA-approved and licensed waste facility in accordance with EPA waste guidelines. ▸ In the event of a minor spill occurring that can be immediately and safely contained by onsite personnel, the spill would be reported internally to the project manager and work practices reviewed and modified as necessary. ▸ Any mulch generated as part of the proposal would be re-used within appropriate timeframes and manners, as specified in the Erosion and Sediment Control Plan.

Environmental aspect	Potential impacts

Water quality	▸ The horizontal direction drilling contractor would prepare and implement a Fluid Management Plan. The fluid management plan is to include the following as a minimum:
	  ▸ fluid volumes and storage requirements
	  ▸ routine monitoring and inspection requirements
	  ▸ incident management in the event of a drilling fluid spill.
	▸ The volume of liquid material (fuel, oil, lubricant) required onsite for operation and maintenance activities would be minimised to reduce the risk of spills occurring.
	▸ All materials that have the potential to contaminate surface water or groundwater would be stored at least 40 m away from any waterways and on flat grades.
	▸ Fuels, chemicals and liquids would be stored according to the following requirements:
	  ▸ stored on an impervious base that must be able to withstand fuel or chemical spills without degradation
	  ▸ the fuels and chemicals stored must be compatible (i.e. would not react with each other)—the safety data sheets would be consulted in this regard
	  ▸ the storage facility would be undercover
	  ▸ all containers would be labelled with the details of the contents
	  ▸ safety data sheets would be available at the site
	  ▸ the storage facility would be inspected for compliance to the above requirements
	  ▸ spill kits would be kept at all permanent and temporary fuel, oil and chemical storage locations.
	▸ The refuelling of plant and planned maintenance of machinery and plant would be undertaken 40 m away from waterways at a designated location, on a hardstand or within a bunded area.
	▸ Chemical use would be minimised where practicable. In the event of chemical application (such as herbicide for weed control) the landowner would be notified before application.
	▸ All work sites would be kept in a clean and tidy condition to prevent waste/litter from entering watercourses.
	▸ Visual monitoring of local water quality (i.e. turbidity, hydrocarbon spills/slicks) would be undertaken on a regular basis in accordance with the surface water monitoring framework to identify any potential spills or deficient erosion and sediment controls. A record would be kept of these inspections.

Aboriginal heritage	▸ If suspected Aboriginal objects are located during construction, an archaeologist would be notified to assess the nature and significance of the find. If the find is an Aboriginal object, further investigation and permits may be required before works commence. If the find is an Aboriginal object, then the Department of Planning and Environment (DPE) and the relevant Local Aboriginal Land Council (LALC) would be notified.
	▸ If suspected human skeletal remains were uncovered at any time within the area of the utility works, the following actions would need to be followed:
	  ▸ immediately cease all excavation activity in the vicinity of the remains
	  ▸ notify NSW Police
	  ▸ notify DPE via the Environment Line, on 131 555, to provide details of the remains and their location
	  ▸ no recommencement of activity in the vicinity of the remains unless authorised in writing by DPE.

Non-Aboriginal heritage	▸ The presence or potential presence of a heritage item or archaeological deposit would inform the construction method adopted, for instance underboring using horizontal directional drilling (HDD) may be preferable to trenching in some sensitive locations. ▸ In the event of an unexpected find of a non-Aboriginal heritage item (or suspected item), all works in the vicinity of the find must cease and the site supervisor is to be contacted immediately for advice on how to proceed.
Landscape and visual	▸ The footprint for construction works would be kept to a minimum to minimise earthworks and maintain existing groundcover vegetation wherever possible. ▸ Sites disturbed by earthworks would be reinstated and revegetated as soon as possible after construction. ▸ The proposal site would be kept in a tidy condition, free of rubbish and waste materials. ▸ Cut-off and directed lighting would be used to ensure glare and light spill are minimised during night work periods (where this is required).

Environmental aspect	Potential impacts
Land use and property	▸ In consultation with utility providers, the ongoing maintenance and access requirements would be identified and the potential impact to an existing easement or need for a new easement considered. ▸ The proposal would not permanently restrict any future access to residential, commercial, industrial or recreational land uses. ▸ Construction compounds and ancillary facilities will be located, constructed and operated to ensure there are minimal impacts upon adjoining landholders.
Waste management	▸ The proposal site would be kept free of litter at all times. ▸ Garbage receptacles would be provided and clearly labelled, and recycling of materials encouraged. ▸ Solid and liquid wastes would be managed and classified in accordance with the EPA guideline *Waste Classification Guidelines, Part 1: Classifying Waste 2014* and disposed of to an appropriately licensed facility by an appropriately licensed waste contractor. ▸ For all hazardous waste (including gases and flammable liquids), safe and secure storage areas are to be provided to prevent environmental harm, contamination or human exposure. Hazardous wastes would be collected, transported and disposed of by suitably approved and licensed waste contractors in accordance with EPA waste guidelines. Controlled waste certificates would be maintained. ▸ A waste register would be retained. The register would include copies of waste dockets/receipts from the waste facility where the waste was transported to. ▸ Drilling fluids used during underboring or HDD would be appropriately stored in accordance with a drilling fluid management plan. ▸ Disposal of clean excavating natural materials to landfill will be avoided. All excavated, natural, non-contaminated soil, aggregate or rock (i.e. suitable material) will be stockpiled separately and re-used onsite where possible.
Health and safety	▸ Hazardous substances would only be used onsite as required, in accordance with the manufacturer/supplier instructions. ▸ Contractors would operate under an appropriate work health and safety plan. ▸ All activities undertaken during the Bushfire Danger Period (1 October to 31 March but can vary in different areas) are to be conducted in accordance with the requirements of regulatory and local fire authorities. The Rural Fire Service would be consulted on requirements for works during the Bushfire Danger Period. ▸ All vehicles and machinery would carry, as a minimum, a 20-litre water knapsack or a 9-litre fire extinguisher. All fire extinguishers must have a current inspection tag. ▸ The undersides of vehicles and machinery would be inspected regularly, and any build-up of ignitable debris removed (such as grass and vegetation debris around the radiator and in the engine bay).

F.5.1 Rehabilitation and re-instatement

All disturbed areas not required for ongoing operations would be rehabilitated. Finishing and rehabilitation would be undertaken progressively and would include the following typical activities:

- levelling of the area of disturbance to the required gradient in unsealed areas, using graders and/or excavators
- replacement or restoration of turf and/or bitumen/gravel surfaces so they are flush with the surrounds
- revegetation of any areas where vegetation has been removed or landscaping, if required
- dismantling of site compounds and stockpile locations, and removal of all plant, equipment and materials, including excess spoil, from the site.

Site rehabilitation would be carried out in accordance with the rehabilitation strategy and the requirements of individual landowners.

F.5.2 Communications and notifications

Throughout construction, ARTC and the contractors would work closely with stakeholders and the community to ensure they are well informed regarding the construction works, including any utility works. The communication tools and activities used during the construction phase would include:

- development of a communication management sub-plan detailing a complaints-handling process
- proposal email address
- 1800 phone number
- updates to the Inland Rail website
- targeted consultation and notifications such as letters, notifications, and face-to-face communication
- construction signage.

The communication management sub-plan would be prepared by as part of the CEMP including a detailed list of the measures that would be implemented during construction to communicate with and respond to community concerns. The plan would include, as a minimum:

- requirements to provide details and timing of proposed activities to affected residents, the local community and businesses
- consultation actions in relation to access arrangements and servicing requirements
- a complaints-handling procedure
- procedures to notify adjacent land users for any changed conditions during the construction period such as traffic, pedestrian or driveway access.

Local residents, businesses and other stakeholders would be notified before work starts and would be regularly informed of construction activities.

F.6 Conclusion

This framework represents an input and reference point for the development of the CEMP for the proposal, ensuring a consistent approach to the management of utility works and the associated impacts, and ensuring integration with utility providers and relevant stakeholders during the construction phase of the proposal.