Construction Environmental Management Plan

Narrabri to North Star (N2NS)

2600-0018 N2NS SP1
SUBMISSION BY TRANS4M RAIL

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Document Control

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Revision History

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A	08/10/2020	Issued for Internal Review
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D	18/12/2020	Amended to address ER comments. Revision issued to DPIE.
E	04/02/2020	Amended to address DPIE comments. Revision issued to DPIE.

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1 Compliance Matrix

Tables 1 - 4 provide a list of the compliance requirements specific to the preparation of the CEMP and where these requirements have been addressed in the document. A comprehensive list of all compliance requirements with some relevance to the CEMP have been provided in Appendix A.

Table 1: EPBC2016/7729 - Conditions of Approval

CONDITION REFERENCE	REQUIREMENTS	WHERE ADDRESSED
PART A CONDITIONS SPECIFIC TO THE ACTION		
C1 (a)	Implement conditions C4 and C9 of Part C, Schedule 2 of the State Infrastructure approval, of where they relate to monitoring, managing, avoiding, mitigating, offsetting, recording or reporting on, impacts to protected matters, with the exception of C9(a)	This CEMP and sub-Plans
1(b)	Ensure that the Weed Management Plan included in the Biodiversity Sub plan required under condition C9 of Part C, Schedule 2 of the State Infrastructure approval, includes appropriate weed control measures to prevent the introduction and/or spread of weeds from construction areas to any retained area of Belsons Panic (*Homopholis belsonii),* Natural Grassland on Basalt and Fine Textured Alluvial Plains of Northern New South Wales and Southern Queensland, Brigalow *(Acacia harpophylla* dominant and co dominant) and Weeping Myall Woodlands ecological communities.	BMP
1(c)	Implement biodiversity conditions E17-E21 and E23-E26 of Part E Schedule 2 of the State Infrastructure approval, where they relate to monitoring, managing, minimising, reducing, avoiding, mitigating, offsetting, recording, or reporting on, impacts to protected matters.	This CEMP and BMP
PART B- STANDARD ADMINISTRATIVE CONDITIONS		
4	The approval holder must maintain accurate and complete compliance records.	CEMP (Section 8.11)
5	If the Department makes a request in writing, the approval holder must provide electronic copies of compliance records to the Department within the timeframe specified in the request.	CEMP (Section 8.11)
ANNUAL COMPLIANCE REPORTING		
6	The approval holder must prepare a compliance report for each 12 month period following the date of commencement of the action, or otherwise in accordance with the annual date that has been agreed with in writing by the Minister. The approval holder must: a) Publish each compliance report on the website within 60 business days following the relevant 12 month period; b) Notify the Department by email that a compliance report has been published on the website and provide the weblink for the compliance report within five business days of the date of publication; c) Keep all compliance reports publicly available on the website until this approval expires;	CEMP (Section 8.9.1)
REPORTING NON-COMPLIANCE		
7	The approval holder must notify the Department in writing of any: incident, non-compliance with the conditions of this approval; or non-compliance with the commitments made in any element of the Construction Environmental Management Plan, (required under Part C- State Infrastructure approval) referred to in condition 1. The notification must be given as soon as practicable, and not later than two business days after	CEMP (Section 9)

CONDITION REFERENCE	REQUIREMENTS	WHERE ADDRESSED
	becoming aware of the incident or non-compliance. The notification must specify: a) Any condition which is or may be in breach; b) A short description of the incident and/or non-compliance; and c) The location (including co-ordinates), date and time of the incident and/or non-compliance. In the event the exact information cannot be provided, provide the best information available.	
8	The approval holder must provide to the Department the details of any incident or non-compliance with the conditions of this approval or commitments made in any element of the Construction Environmental Management Plan (required under Part C, Schedule 2 of the State Infrastructure approval) referred to in condition 1 as soon as practicable and no later than 10 business days after becoming aware of the incident or non-compliance, specifying: a) Any corrective action or investigation which the approval holder has already taken or intends to take in the immediate future; b) The potential impacts of the incident or non-compliance and; c) The method and timing of any remedial action that will be undertaken by the approval holder.	CEMP (Section 10)

Table 2: SSI 7474 - Conditions of Approval

CONDITION REFERENCE	DETAILS	WHERE ADDRESSED
A1	The CSSI may only be carried out in accordance with the terms of this approval and generally in accordance with the description of the CSSI in the Inland Rail – Narrabri to North Star Environmental Impact Statement, Volumes 1-7 (prepared by GHD and dated November 2017), the Inland Rail – Narrabri to North Star Submissions Preferred Infrastructure Report (ARTC, dated December 2019) and (updated BDAR, RtS on the SPIR and RFI responses).	CEMP (Sections 3 and 4)
A2	The CSSI must be carried out in accordance with all procedures, commitments, preventative actions, performance criteria and mitigation measures set out in in the documents listed in Condition A1 unless otherwise specified in, or required under, this approval.	CEMP (Section 3.1)
A3	In the event of an inconsistency between the documents listed in Condition A1 or any other document required under this approval, and a term of this approval, the term of this approval prevails to the extent of the inconsistency. Note: For the purpose of this condition, there will be an inconsistency between a term of this approval and any document if it is not possible to comply with both the term and the document.	CEMP (Section 3.1)
A4	The Proponent must comply with the written requirements or directions of the Planning Secretary, including in relation to: a) the environmental performance of the CSSI; b) any document or correspondence under the terms of this approval in relation to the CSSI (including the provision of such documentation or correspondence); c) any independent appointment or dismissal made in relation to the CSSI; d) any notification given to the Planning Secretary under the terms of this approval; e) any audit of the construction or operation of the CSSI;	This CEMP

CONDITION REFERENCE	DETAILS	WHERE ADDRESSED
	f) the terms of this approval and compliance with the terms of this approval (including anything required to be done under this approval); g) the carrying out of any additional monitoring or mitigation measures; and h) n respect of ongoing monitoring and management obligations, compliance with an updated or revised version of a guideline, protocol, Australian Standard or policy required to be complied with under this approval.	
A5	Where the terms of this approval require a document or monitoring program to be prepared, or a review to be undertaken, in consultation with identified parties, evidence of the consultation undertaken must be submitted to the Planning Secretary in accordance with the Department's Post Approval Guidance: Defining Engagement Terms (DPIE, 2020). The evidence must include: a) documentation of the engagement with the party identified in the condition of approval that has occurred before submitting the document for approval; b) log of the dates of engagement or attempted engagement with the identified party and a summary of the issues raised by them; c) documentation of the follow-up with the identified party where engagement has not occurred to confirm that they do not wish to engage or have not attempted to engage after repeated invitations; d) outline of the issues raised by the identified party and how they have been addressed; and e) a description of the outstanding issues raised by the identified party and the reasons why they have not been addressed.	CEMP (Section 3), sub-Plans, Communication Strategy and CSEMP NOTE: The Communication Strategy as required under CoA B1 and B2 is being prepared by ARTC. The Communication and Stakeholder Engagement Management Plan (CSEMP) is being prepared by Trans4m Rail and aligns with the requirements of ARTC's Communication Strategy.
A6	Any document that must be submitted, or approval that must be obtained, within a timeframe specified in or under the conditions of this approval may be submitted within a later timeframe agreed with the Planning Secretary. This condition does not apply to the immediate written notification required in respect of an incident under Condition A41. The Proponent must provide supporting evidence so that the Secretary can consider the need, environmental impacts and consistency of any request. Note: Inaction and/or expedience will not be supported as justifications for need unless it can be demonstrated that there are beneficial environmental impacts associated with the request.	Noted
A7	References in the terms of this approval to any guideline, protocol, Australian Standard or policy are to such guidelines, protocols, Standards or policies in the form they are in as at the date of this approval.	Noted
A8	This approval lapses five (5) years after the date on which it is granted, unless works for the purpose of the CSSI are physically commenced on or before that date.	Noted
A18	The operation of an ancillary facility for construction must not commence until the CEMP required by Condition C1, relevant CEMP Sub-plans required by Condition 0 and relevant Construction Monitoring Programs required by Condition C14 have been approved by the Planning Secretary. This condition does not apply to Condition A21.	SEMP (Section 8.3)
A31	Compliance Reports of the project must be carried out in accordance with the Compliance Reporting Requirements outlined in the Compliance Reporting Post Approval Requirements (2020).	CEMP (Section 8.9.1)
A32	Compliance Reports must be submitted to the Department in accordance with the timeframes set out in the Compliance Reporting Post Approval Requirements (2020), unless otherwise agreed by the Planning Secretary.	CEMP (Section 8.9.1)

CONDITION REFERENCE	DETAILS	WHERE ADDRESSED
A33	The Applicant must make each Compliance Report publicly available 60 days after submitting it to the Planning Secretary, unless otherwise agreed by the Planning Secretary.	CEMP (Section 8.9.1)
A34	Notwithstanding the requirements of the Compliance Reporting Post Approval Requirements (2020), the Planning Secretary may approve a request for ongoing annual operational compliance reports to be ceased, where it has been demonstrated to the Planning Secretary's satisfaction that an operational compliance report has demonstrated operational compliance.	CEMP (Section 8.9.1)
A41	During construction, DPIE must be notified in writing immediately after the Proponent becomes aware of an incident. The notification must identify the CSSI (including the application number and the name of the CSSI if it has one), and set out the time, date, location and nature of the incident. A description of whether the incident was a result of any actual or potential non-compliance with this approval should be provided within one week of the notification. The requirement to notify DPIE under this condition excludes incidents which are required to be notified to the Office of the National Rail Safety Regulator. Subsequent notification must be given and reports submitted in accordance with the requirements set out in Appendix B – WRITTEN INCIDENT NOTIFICATION AND REPORTING REQUIREMENTS.	CEMP (Section 10.2)
C1	A Construction Environmental Management Plan (CEMP) must be prepared in accordance with the Department's Environmental Management Plan Guideline for Infrastructure Projects (DPIE, 2020) to detail how the performance outcomes, commitments and mitigation measures specified in the documents listed in Condition A1 will be implemented and achieved during all stages of construction.	This plan.
C2	The CEMP must provide:	
	a) a description of activities to be undertaken during construction (including the scheduling of construction);	CEMP (Section 4)
	b) details of environmental policies, guidelines and principles to be followed in the construction of the SSI;	CEMP (Sections 3 and 8 and Appendix B)
	c) a program for ongoing analysis of the key environmental risks arising from the activities described in subsection (a) of this condition, including an initial risk assessment undertaken before the commencement of construction of the SSI;	CEMP (Section2 7 and 12 and Appendix D)
	d) details of how the activities described in subsection (a) of this condition will be carried out to: i. meet the performance outcomes stated in the documents listed in Condition A1; and	CEMP (Section 8)
	ii. manage the risks identified in the risk analysis undertaken in subsection (d) of this condition;	CEMP (Sections 7 and 8and Appendix D)
	e) an inspection program detailing the activities to be inspected and frequency of inspections;	CEMP (Section 8.8)
	f) a protocol for managing and reporting any: i. incidents; and ii. non-compliances with this approval or statutory requirements;	CEMP (Section 10 and Appendix F)
	g) procedures for rectifying any non-compliance with this approval identified during compliance auditing, incident management or at any time during construction;	CEMP (Section 10.3)

<table>
<tr><th>CONDITION REFERENCE</th><th>DETAILS</th><th>WHERE ADDRESSED</th></tr>
<tr><td></td><td>h) a list of all the CEMP Sub-plans required in respect of construction, as set out in Condition C4. Where staged construction of the SSI is proposed, the CEMP must also identify which CEMP Sub-plan applies to each of the proposed stages of construction;</td><td>CEMP (Sections 6 and 8)</td></tr>
<tr><td></td><td>i) a description of the roles and environmental responsibilities for relevant employees and their relationship with the ER;</td><td>CEMP (Section 8.4)</td></tr>
<tr><td></td><td>j) for training and induction for employees, including contractors and sub-contractors, in relation to environmental and compliance obligations under the terms of this approval;</td><td>CEMP (Section 8.5)</td></tr>
<tr><td></td><td>k) for periodic review and update of the CEMP and all associated plans and programs; and</td><td>CEMP (Section 12)</td></tr>
<tr><td></td><td>l) relevant details from the Site Establishment Management Plan(s).</td><td>CEMP (Appendix H)</td></tr>
<tr><td>C3</td><td>The CEMP must be endorsed by the ER and then submitted to the Secretary for approval no later than one (1) month before the commencement of construction or where construction is staged, no later than one (1) month before the commencement of that stage.</td><td>Appendix A</td></tr>
<tr><td>C4</td><td>The following CEMP Sub-plans must be prepared in consultation with the relevant government agencies and relevant councils identified for each CEMP Sub-plan and be consistent with the CEMP referred to in the EIS.
<table>
<tr><th></th><th>REQUIRED CEMP SUB-PLAN</th><th>RELEVANT GOVERNMENT AUTHORITIES TO BE CONSULTED FOR EACH CEMP SUB-PLAN</th></tr>
<tr><td>(a)</td><td>Traffic, Transport and access</td><td>TfNSW and relevant councils</td></tr>
<tr><td>(b)</td><td>Noise and Vibration</td><td>Relevant councils</td></tr>
<tr><td>(c)</td><td>Biodiversity</td><td>EES, DAWE and relevant councils</td></tr>
<tr><td>(d)</td><td>Soil and Water</td><td>Relevant councils, Water Group, and EES</td></tr>
<tr><td>(e)</td><td>Heritage</td><td>DPC Heritage, RAPs and relevant councils</td></tr>
<tr><td>(f)</td><td>Flood Emergency Management</td><td>SES, EES and relevant councils</td></tr>
</table></td><td>CEMP (Section 3) &relevant sub-Plans</td></tr>
<tr><td>C13</td><td>Construction must not commence until the CEMP and all CEMP Sub-plans have been approved by the Secretary. The CEMP and CEMP Sub-plans, as approved by the Secretary, including any minor amendments approved by the ER, must be implemented for the duration of construction. Where the CSSI is being staged, construction of that stage is not to commence until the relevant CEMP and sub-plans have been endorsed by the ER and approved by the Secretary.</td><td>CEMP (Section 8.3)</td></tr>
<tr><td>C14</td><td>The following Construction Monitoring Programs must be prepared in consultation with the relevant government agencies and relevant councils identified for the Construction Monitoring Programs to compare actual performance of construction of the CSSI against performance predicted in the documents specified in Condition A1.
<table>
<tr><th></th><th>REQUIRED CONSTRUCTION</th><th>RELEVANT GOVERNMENT AUTHORITIES TO BE CONSULTED FOR EACH</th></tr>
</table></td><td>CEMP (Section 8.3) & relevant sub-Plans
Noise and Vibration Monitoring Program (Appendix E of the Construction Noise and Vibration Management sub-Plan)

Water Usage Monitoring Program (Section 7.2 of</td></tr>
</table>

CONDITION REFERENCE	DETAILS	WHERE ADDRESSED
	<table><tr><th></th><th>MONITORING PROGRAMS</th><th>CONSTRUCTION MONITORING PROGRAM</th></tr><tr><td>(a)</td><td>Noise and vibration</td><td>Nil</td></tr><tr><td>(b)</td><td>Water usage</td><td>Water Group</td></tr><tr><td>(c)</td><td>Air Quality</td><td>Nil</td></tr><tr><td>(d)</td><td>Physical condition of local roads</td><td>Relevant councils</td></tr></table>	the Construction Soil and Water Management sub-Plan) *Air Quality Monitoring Program* (Appendix D of Construction Soil and Water Management sub-Plan) *Local Road Condition Monitoring Program* (Section 11 of the Construction Traffic, Transport and Access Management sub-Plan)
C18	Construction must not commence until the Planning Secretary has approved all of the required Construction Monitoring Programs, and all relevant baseline data for the specific construction activity has been collected.	CEMP (Sections 8.3 and 8.9)
C19	The Construction Monitoring Programs, as approved by the Planning Secretary including any minor amendments approved by the ER must be implemented for the duration of construction and for any longer period set out in the monitoring program or specified by the Planning Secretary, whichever is the greater.	CEMP (Section 8.9) &relevant sub-plans
C20	The results of the Construction Monitoring Programs must be submitted to the Planning Secretary, and relevant regulatory agencies, for information in the form of a Construction Monitoring Report at the frequency identified in the relevant Construction Monitoring Program. Note: Where a relevant CEMP Sub-plan exists, the relevant Construction Monitoring Program may be incorporated into that CEMP Sub-plan.	CEMP (Section 8.9)& relevant sub-plans
E87	Waste generated during construction and operation is to be dealt with in accordance with the following priorities: (a) waste generation is to be avoided and where avoidance is not reasonably practicable, waste generation is to be reduced; (b) where avoiding or reducing waste is not possible, waste is to be re-used, recycled, or recovered in accordance with the requirements of the Protection of the Environment Operations Act 1997 and its regulations; and (c) where re-using, recycling or recovering waste is not possible, waste is to be treated or disposed of at a waste management facility or premise lawfully permitted to accept the materials or in accordance with a Resource Recovery Exemption or Order issued under the Protection of the Environment Operations (Waste) Regulation 2014, or to any other place that can lawfully accept such waste.	CEMP (Appendix G)
E88	The importation of waste and the storage, treatment, process, reprocessing or disposal of such waste must comply with the conditions of the current EPL for the CSSI, or be done in accordance with a Resource Recovery Exemption or Order issued under the Protection of the Environment Operations (Waste) Regulation 2014, as the case may be.	CEMP (Appendix G)
E89	Waste must only be exported to a site licensed by the EPA for the storage, treatment, processing, reprocessing or disposal of the subject waste, or in accordance with a Resource Recovery Exemption or Order issued under the Protection of the Environment Operations (Waste) Regulation 2014, or to any other place that can lawfully accept such waste.	CEMP (Appendix G)

CONDITION REFERENCE	DETAILS	WHERE ADDRESSED
	Note: Notice must be given to the relevant site/s as soon as possible, and no more than 14 days before the proposed waste disposal.	
E90	All waste generated during construction and operation must be classified in accordance with the EPA's Waste Classification Guidelines, with appropriate records and disposal dockets retained for audit purposes.	CEMP (Appendix G)

Table 3: Revised Mitigation Measures

CONDITION REFERENCE	DETAILS	WHERE ADDRESSED
C1.1	Construction of the preferred infrastructure would be undertaken in accordance with the approved CEMP.	CEMP (Section 3)
C2.1	A traffic, transport and access management sub-plan would be prepared and implemented as part of the CEMP. It would include measures to minimise the potential for impacts on the community and the operation of the surrounding road and transport environment. It would address all the aspects of construction relating to the movement of vehicles, pedestrians and cyclists, and the operation of the surrounding road network, including: construction site traffic control, parking and access arrangements construction material, equipment and spoil haulage, including arrangements for oversize vehicles road pavement and access road condition management management of impacts to public transport, including school buses, pedestrian and cyclist access, and safety management of impacts to access for surrounding residents and business owners/operators arrangements for level crossings during construction road and driver safety. The traffic, transport and access management sub-plan would be developed in consultation with (where relevant) Narrabri Shire Council, Moree Plains Shire Council, Gwydir Shire Council, Roads and Maritime Services, and public transport/bus operators.	Construction Traffic, Transport and Access Management sub-Plan
C3.1	A biodiversity management sub-plan would be prepared and implemented as part of the CEMP. It would include measures to minimise the potential for biodiversity impacts. The sub-plan would address, as outlined below: a pre-clearing survey and tree-felling procedure procedures to manage micro-bats avoiding impacts on surrounding vegetation (item C3.2) weed management (item C3.3) dewatering of standing pools in watercourses measure to minimise impacts on aquatic ecology	Construction Biodiversity Management sub-Plan
C4.1	The Inland Rail NSW Construction Noise and Vibration Management Framework (provided in Appendix J) would be implemented, and the preferred infrastructure proposal would be constructed, with the aim of achieving the construction noise management levels and vibration criteria identified by the noise and vibration assessment. All feasible and reasonable noise and vibration mitigation measures would be implemented. Any activities that could exceed the construction noise management levels and vibration criteria would be identified and managed in accordance with the Inland Rail NSW Construction Noise and Vibration Management Framework and the CEMP. Notification of impacts would be undertaken in accordance with the communication management plan for the preferred infrastructure proposal.	Construction Noise and Vibration sub-Plan
C5.1	An air quality 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, and would address all aspects of construction, including:	Construction Soil and Water Management sub-Plan

	spoil handling machinery operating procedures soil treatments stockpile management haulage dust suppression monitoring.	
C6.1	A soil and water management sub-plan would be prepared as part of the CEMP. It 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 (for example, through mixing of gypsum) surface water and erosion control practices that take into account site specific soil types (for example, dispersive soils).	Construction Soil and Water Management sub-Plan
C6.2	A contamination and hazardous materials sub-plan would be prepared and implemented as part of the CEMP. It would include: measures to minimise the potential for contamination impacts on the local community, workers, and environment procedures for incident management and managing unexpected contamination finds (an unexpected finds protocol).	Construction Soil and Water Management sub-Plan
D1.1	A CEMP would be prepared to detail the approach to environmental management during construction, as described in section 27.2 of the EIS, and in accordance with the conditions of approval.	This Plan
D8.7	An unexpected finds procedure would be developed and included in the CEMP to provide a consistent method for managing any unexpected Aboriginal heritage items discovered during construction, including potential heritage items or objects, and human skeletal remains.	Construction Heritage Management sub-Plan
D9.5	An unexpected finds procedure would be developed and included in the CEMP to provide a consistent method for managing any unexpected heritage items or human skeletal remains discovered during construction.	Construction Heritage Management sub-Plan

Table 4: Performance outcomes

KEY ISSUE (AS LISTED IN THE SEARS)	SEARS DESIRED PERFORMANCE OUTCOMES	PROPOSAL SPECIFIC CONSTRUCTION ENVIRONMENTAL PERFORMANCE OUTCOMES	WHERE ADDRESSED
5 Air Quality	The project is designed, constructed and operated in a manner that minimises air quality impacts (including nuisance dust and odour) to minimise risks to human health and the environment to the greatest extent practicable.	▸ The proposal is constructed and operated in accordance with the requirements of the POEO Act and relevant environmental protection licences. ▸ Dust generated during construction will not exceed the relevant criteria in the National Environment Protection (Ambient Air Quality) Measure and the Approved Methods for the Modelling and Assessment of	Construction Soil and Water Management sub-Plan Air Quality Monitoring Program (Appendix D of Construction Soil and Water Management sub-Plan)

KEY ISSUE (AS LISTED IN THE SEARS)	SEARS DESIRED PERFORMANCE OUTCOMES	PROPOSAL SPECIFIC CONSTRUCTION ENVIRONMENTAL PERFORMANCE OUTCOMES	WHERE ADDRESSED
		Air Pollutants in New South Wales (Department of Environment and Conservation, 2005).	
6 Biodiversity	Offsets and/or supplementary measures are assured which are equivalent to any remaining impacts of project construction and operation.	▸ Potential impacts on biodiversity are managed in accordance with relevant legislation, including the EP&A Act, TSC Act, FM Act, EPBC Act, and the Noxious Weeds Act 1993. ▸ The biodiversity outcome is consistent with the Framework for Biodiversity Assessment (OEH, 2014b). ▸ Offsets are provided in accordance with the NSW Biodiversity Offsets Policy for Major Projects (OEH, 2014c).	Biodiversity Management sub-Plan
8 Flooding	The project minimises adverse impacts on existing flooding characteristics. Construction and operation of the project avoids or minimises the risk of, and adverse impacts from, infrastructure flooding, flooding hazards, or dam failure.	▸ Construction is undertaken in a manner that minimises the potential for adverse flooding impacts, through staging of works and the implementation of mitigation measures. ▸ The proposal makes a positive contribution to local flooding characteristics by replacing existing drainage infrastructure. ▸ Structures such as spoil mounds are designed and located such that flows are not significantly impeded. ▸ The proposal reduces the length of overtopping of the existing rail corridor. ▸ The proposal reduces or does not significantly increase the area subject to flooding.	Flood Emergency Management sub-Plan
9 Health and Safety	The project avoids, to the greatest extent possible, risk to public safety.	▸ All dangerous goods are stored, handled and transported in accordance with relevant regulatory requirements and Australian Standards.	Soil and Water Management sub-Plan
10 Heritage	The design, construction and operation of the project facilitates, to the greatest extent possible, the long-term protection, conservation and management of the heritage significance of items of environmental heritage and Aboriginal objects and places. The design, construction and operation of the project avoids or minimises impacts, to the greatest	▸ Impacts on heritage are managed in accordance with relevant legislation, including the EP&A Act, the Heritage Act 1977, and relevant guidelines. ▸ The potential impacts identified are mitigated by photographic/archival recording.	Heritage Management sub-Plan

KEY ISSUE (AS LISTED IN THE SEARS)	SEARS DESIRED PERFORMANCE OUTCOMES	PROPOSAL SPECIFIC CONSTRUCTION ENVIRONMENTAL PERFORMANCE OUTCOMES	WHERE ADDRESSED
	extent possible, on the heritage significance of environmental heritage and Aboriginal objects and places.		
11 Noise and vibration – amenity	Construction noise and vibration (including airborne noise, ground-borne noise and blasting) are effectively managed to minimise adverse impacts on acoustic amenity.	The proposal minimises impacts to the local community by: ▸ controlling noise and vibration at the source ▸ controlling noise and vibration on the source to receiver transmission path ▸ controlling noise and vibration at the receiver ▸ implementing practicable and reasonable measures to minimise the noise and vibration impacts of construction activities on local sensitive receivers.	Noise and Vibration Management sub-Plan
12 Noise and vibration – structural	Construction noise and vibration (including airborne noise, ground-borne noise and blasting) are effectively managed to minimise adverse impacts on the structural integrity of buildings, items including Aboriginal places and environmental heritage, and nearby road infrastructure.	▸ The proposal minimises impacts to structures by: ▸ controlling vibration at the source ▸ controlling vibration on the source to receiver transmission path ▸ implementing practicable and reasonable measures to minimise vibration impacts of construction activities on structures.	Noise and Vibration Management sub-Plan and Heritage Management sub-Plan
15 Soils	The environmental values of land, including soils, subsoils and landforms, are protected. Risks arising from the disturbance and excavation of land and disposal of soil are minimised, including disturbance to acid sulfate soils and site contamination.	▸ Site-specific soil, subsoil and landform characteristics are taken into consideration during detailed design and construction. ▸ Any contamination is managed in accordance with relevant regulatory requirements. ▸ Any soil waste is assessed, classified, managed and disposed of in accordance with the Waste Classification Guidelines (EPA, 2014).	Soil and Water Management sub-Plan
17 Traffic, transport and access	Network connectivity, safety and efficiency of the transport system in the vicinity of the project are managed to minimise impacts. The safety of transport system customers is maintained. Impacts on network capacity and the level of service are effectively managed.	▸ The proposal provides for more efficient and productive freight rail operations. ▸ Impacts to traffic and transport are minimised. ▸ Motorist, pedestrian and cyclist safety will be maintained or improved. ▸ The proposal contributes to one of the desired outcomes	Construction Traffic, Transport and Access Management sub-Plan

KEY ISSUE (AS LISTED IN THE SEARS)	SEARS DESIRED PERFORMANCE OUTCOMES	PROPOSAL SPECIFIC CONSTRUCTION ENVIRONMENTAL PERFORMANCE OUTCOMES	WHERE ADDRESSED
	Works are compatible with existing infrastructure and future transport corridors.	of Inland Rail – to have reduced truck volumes on the road network, improving road safety. ▸ Safe access to properties is maintained. ▸ The proposal is integrated with existing and future local and regional transport infrastructure and planning strategies	
18 Visual amenity	The project minimises adverse impacts on the visual amenity of the built and natural environment (including public open space) and capitalises on opportunities to improve visual amenity.	▸ Vegetation providing screening to the rail corridor is retained where practicable. ▸ The proposal is designed to have regard to the surrounding landscape and visual environment. ▸ The proposal incorporates features to minimise the potential visual impacts where visual receptors are concentrated. ▸ The proposal makes a positive contribution to the quality of the visual environment in the vicinity of the Newell Highway and Jones Avenue overbridges, and the new bridges over the Mehi and Gwydir rivers and Croppa Creek. ▸ The proposal is visually integrated with its surroundings.	Soil and Water Management sub-Plan and Biodiversity Management sub-plan
19 Waste	All wastes generated during the construction and operation of the proposal are effectively stored, handled, treated, reused, recycled and/or disposed of lawfully, and in a manner that protects environmental values.	▸ Waste is managed in accordance with the POEO Act and the WARR Act. ▸ Waste is assessed, classified, managed, and disposed of in accordance with the Waste Classification Guidelines (EPA, 2014). ▸ Reusable spoil is beneficially reused in accordance with the project spoil reuse hierarchy.	Appendix G - Waste and Resource Environmental Control Map
20 Water - hydrology	Long term impacts on surface water and groundwater hydrology (including drawdown, flow rates and volumes) are minimised. The environmental values of nearby, connected and affected water sources, groundwater and dependent ecological systems including estuarine and marine water (if applicable) are maintained (where values are	▸ The proposal avoids long term impacts to surface water. ▸ Opportunities to reuse water resources are considered during the design process. ▸ The use of water during construction is minimised.	Construction Soil and Water Management sub-Plan

KEY ISSUE (AS LISTED IN THE SEARS)	SEARS DESIRED PERFORMANCE OUTCOMES	PROPOSAL SPECIFIC CONSTRUCTION ENVIRONMENTAL PERFORMANCE OUTCOMES	WHERE ADDRESSED
	achieved) or improved and maintained (where values are not achieved). Sustainable use of water resources.		
21 Water - quality	The project is designed, constructed and operated to protect the NSW Water Quality Objectives where they are currently being achieved, and contribute towards achievement of the Water Quality Objectives over time where they are currently not being achieved, including downstream of the project to the extent of the project impact including estuarine and marine waters (if applicable).	▸ The proposal is designed and constructed such that changes to water flows in watercourses are minimised. ▸ Water discharged does not exceed the ANZECC 2000 guidelines for protection of aquatic ecosystems or water quality trigger values. ▸ Impacts to water quality during construction and operation are minimised.	Construction Soil and Water Management sub-Plan

Table 5: Guideline for the preparation of EMPs requirements

GUIDELINE SECTION	REQUIREMENT	YES/NO/NOT APPLICABLE	WHERE ADDRESSED
DOCUMENT PREPARATION AND ENDORSEMENT			
4.1	Has the EMP been prepared in consultation with all relevant stakeholders as per the requirements of the conditions of consent?	Yes	CEMP (Section 5) & relevant sub-plans.
4.1	Have the views of the relevant stakeholders been taken into consideration? Have appropriate amendments been made to the EMP and does the EMP clearly identify the location of any changes?	Yes	CEMP (Section 5) & relevant sub-plans.
4.2	Has the EMP been internally approved by an authorized representative of the proponent or contractor?	Yes	Document Control section at beginning of plan
VERSION AND CONTENT			
3.5.1	Does the EMP describe the proponent's Environmental Management System (EMS) (if any), and identify how the EMP relates to other documents required by the conditions of consent?	Yes	CEMP (Section 8)
3.1	Does the EMP include the required general content and version control information?	Yes	Document Control section at beginning of plan
3.2	Does the EMP have an introduction that describes the project, scope of works, site location and any staging or timing considerations?	Yes	CEMP (Section 4)
3.3	Does the EMP reference the project description?	Yes	CEMP (Section 4)
3.4	Does the EMP reference a Community and Stakeholder Engagement Plan (or similar) or include community and stakeholder engagement actions (if required)?	Yes	CEMP (Section 9) and Communication Strategy
4	Have all other relevant approvals been identified? Has appropriate information been provided regarding how each approval is relevant?	Yes	CEMP (Section 6.4)
3.5.2	Has the environmental management structure and responsibilities been included?	Yes	CEMP (Section 8)
3.5.3	Does the EMP include processes for training of project personnel and identify how training and awareness needs will be identified?	Yes	CEMP (Section 8.5)
3.5.3	Does the EMP clearly identify the relevant legal and compliance requirements that relate to the EMP?	Yes	CEMP (Section 6 and Appendix A)
3.5.13	Does the EMP include all the conditions of consent to be addressed by the EMP and identify where in the EMP each requirement has been addressed?	Yes	CEMP (Section 1) and the Compliance Matrix (Appendix A)
3.5	Have all relevant guidelines, policies and standards been identified, including details of how they are relevant?	Yes	CEMP (Section 6 and Appendix A)
3.5.5	Is the process that will be adopted to identify and analyse the environmental risks included?	Yes	CEMP (Section 7 and 8)
3.5.7	Have all the environmental management measures in the EIA been directly reproduced into the EMP?	Yes	CEMP (Section 8.7) and relevant sub-plans and

GUIDELINE SECTION	REQUIREMENT	YES/NO/NOT APPLICABLE	WHERE ADDRESSED
			ECPs (Appendix G)
3.5.7	Have any additional environmental management measures been included in the EMP?	Yes	Relevant sub-plans and Appendix G
3.5.7	Have environmental management measures been written in committed language?	Yes	Relevant sub-plans and Appendix G
3.5.6	Have project environmental management measures, including hold points, been identified and included?	Yes	CEMP (Section 8.6) & relevant sub-plans
3.5.8	Are relevant details of environmental monitoring that will be carried out included?	Yes	CEMP (Section 8.9) and the relevant sub-Plans
3.5.8	Have the components of any environmental monitoring programs been incorporated?	Yes	CEMP (Section 8.9) and relevant sub-plans
3.5.9	Are environmental inspections included?	Yes	CEMP (Section 8.8)
3.5.12 and 3.5.13	Does the EMP document all relevant compliance monitoring and reporting requirements for the project?	Yes	CEMP (Section 8.9)
3.5.10	Does the EMP describe the types of plans or maps (such as environmental control maps) that will be used to assist with the management of environmental matters on site?	Yes	CEMP (Section 8.1) and Appendix G
3.5.11	Does the EMP list environmental management documents?	Yes	CEMP (Section 8.1) Relevant sub-plans
3.5.13	Is an auditing program referenced?	Yes	CEMP (Section 8.10)
3.5.15	Does the EMP include the incident notification and reporting protocols that comply with the relevant conditions of consent?	Yes	CEMP (Section 10)
3.5.15	Does the EMP identify the project role/position that is responsible for deciding whether an occurrence is an incident?	Yes	CEMP (Sections 8.4 and 10)
3.5.16	Does the EMP describe a corrective and preventative action process that addresses the requirements?	Yes	CEMP (Section 10)
3.6	Does the EMP include details of a review and revision process that complies with the requirements?	Yes	CEMP (Section 12)

2 Glossary

Specific terms and acronyms used throughout this strategy are listed and described in the table below.

Table 6: Glossary

TERM / ACRONYM / ABBREVIATION	DEFINITION
AMS	Activity Method Statement
ARTC	Australian Rail Track Corporation
BMP	Biodiversity Management Plan
CAD	Computer-Aided Design
CEMP	Construction Environmental Management Plan
CIZ	Construction Impact Zone
CoA	Conditions of Approval
CSEMP	Community and Stakeholder Engagement Management Plan
CSSI	Critical State Significant Infrastructure
CPESC	Certified Professional in Erosion and Sediment Control
DMS	Document Management System
DPIE	Department of Planning Industry and Environment
ECM	Environmental Control Map
EIS	Environmental Impact Statement
EMS	Environmental Management System
EPA	Environmental Protection Authority
EPBC Act	Environmental Protection and Biodiversity Conservation Act
EPL	Environment Protection Licence
EP&A	Environmental Planning and Assessment Act (1979)
ESCP	Erosion and Sediment Control Plan
ER	Environmental Representative
FEMP	Flood Emergency Management Plan
FERP	Flood Emergency Response Plan
GIS	Geographic Information System
HMP	Heritage Management Plan
HSEQS	Health, Safety, Environment, Quality and Sustainability
IMS	Integrated Management System
IR	Inland Rail
ISCA	Infrastructure Sustainability Council of Australia
N2NS	Narrabri to North Star (Separable Portion 1)
NATA	National Association of Testing Authorities, Australia
NVMP	Noise and Vibration Management Plan
REF	Review of Environmental Factors
REMM	Revised Environmental Management Measure
RTS	Response to Submissions

TERM / ACRONYM / ABBREVIATION	DEFINITION
SEARs	Secretary's Environmental Assessment Requirements
SEMP	Site Establishment Management Plan
SPIR	Submissions Preferred Infrastructure Report
SuMP	Sustainability Management Plan
SWMP	Soil and Water Management Plan
SWMS	Safe Work Method Statement
TRA	Task Risk Assessment
TTAMP	Traffic, Transport and Access Management Plan
TfNSW	Transport for NSW
WRA	Workplace Risk Assessment

3 Introduction

Inland Rail is a once-in-a-generation program of infrastructure works which will, when completed, connect regional Australia to domestic and international markets, transforming the way freight is transported around the country. It will complete the 'spine' of the national freight network with a new 1,710 km freight line linking Melbourne and Brisbane via regional Victoria, New South Wales and Queensland.

Trans4M Rail (an unincorporated Joint Venture between SEE Civil Pty Ltd and John Holland Pty Ltd) have been engaged by Australian Rail Track Corporation (ARTC) to construct the Narrabri to North Star (Separable Portion 1) (N2NS) section of the Inland Rail Project. N2NS extends approximately 173km from north of Narrabri Junction, terminating at North Star, generally following the existing rail corridor.

3.1 CEMP Purpose and Scope

This Construction Environmental Management Plan (CEMP) has been developed for the construction of the Narrabri to North Star (Separable Portion 1) (N2NS) section of Inland Rail. It provides a centralised strategy through which all potential environmental impacts will be managed during construction and includes management measures to avoid or minimise potential impacts.

The CEMP will apply to all construction activities and Trans4m Rail's personnel, suppliers, subcontractors, consultants and representatives whose scopes of work influence, contribute to or otherwise assist in delivering the N2NS.

Additionally, the CEMP outlines how Trans4m Rail will comply with all relevant regulatory requirements (including the NSW Minister for Planning's Conditions of Approval (CoA)), minimise environmental risks and achieve environmental outcomes on the Project by providing an integrated and structured approach to ensure appropriate revised environmental management measures (RMMs) (contained in the Submissions Preferred Infrastructure Report (SPIR)) and controls are implemented. CoAs A1 and A2 require the N2NS project to be constructed generally in accordance with the description of the project in the SPIR, Environmental Impact Statement (EIS) and the N2NS CoA and in accordance with all procedures, commitments, preventative actions, performance criteria and mitigation measures set out in these documents unless otherwise specified in, or required under, the CoAs. This CEMP establishes a framework to achieve the requirements of CoA A1 and A2.

RMM C1.1 also requires that construction of the N2NS project is undertaken in accordance with the approved CEMP and approved CEMP sub plans.

This Plan has been developed in accordance with the relevant requirements of:

- The CoA of SSI 7474;
- Environment Protection and Biodiversity Act (EPBC Act) Conditions;
- The Secretary's Environmental Assessment Requirement's (SEARs) Environmental Performance Outcomes (EPO);
- ARTC's Environmental Policy and Environment and Sustainability Policy;
- Appendix K (CEMP Outline) of the Narrabri to North Star Project Environmental Impact Statement (EIS);
- AS/NZS ISO 14001:2016 Environmental Management Systems;
- Environmental Management Plan Guideline: Guideline for Infrastructure Projects (Department of Planning, Industry and Environment, 2020); and
- Australian Rail Track Corporation's (ARTC) Environmental Management System (EMS).
- The joint venture partner, John Holland Group's Environmental Management System (EMS) (certified to ISO AS/NZS14001)

Relevant CoA and other conditions of approval and where they have been addressed can be found in the Compliance Matrix Tables (Tables 1 - 4 provide a list of the compliance requirements specific to the preparation of the CEMP and where these requirements have been addressed in the document. A comprehensive list of all compliance requirements with some relevance to the CEMP have been provided in Appendix A.

Table 1

The purpose of this CEMP is to provide a structured approach to the management of environmental issues during construction of the project. Implementing this CEMP will ensure that Trans4m Rail, and therefore Inland Rail, meet regulatory and approval requirements in a systematic manner. In particular, this CEMP:

- Describes the project and activities to be undertaken;
- Describes the strategic framework for environmental management of the project;
- Defines Trans4m Rail's Environmental Policy and EMS;
- Identifies the approvals, licences and permits that relate to the project;
- Describes the roles and responsibilities of personnel in relation to environmental management;
- Describes the procedures that will be implemented for stakeholder consultation and notification and complaints management; and
- Outlines a monitoring regime for construction.

Construction personnel will be required to undertake works in accordance with this CEMP and the mitigation measures identified in the site-specific documents. Trans4m Rail will also comply with the written requirements or directions of the Planning Secretary as required by CoA A4.

In addition, this CEMP includes a range of sub-Plans. As required by CoA C4, the following sub-Plans have been prepared:

- Traffic, Transport and Access (TTAMP), also required by RMM C2.1;
- Noise and Vibration (NVMP);
- Biodiversity (BMP), also required by RMM C3.1;
- Soil and Water (SWMP), also required by RMM C6.1;
- Heritage (HMP); and
- Flood Emergency Management (FEMP).

As specified in CoA C5, the purpose of each sub-plan includes:

- How the environmental performance outcomes identified in the EIS, SPIR and updated responses, as modified by CoA, will be achieved;
- How the mitigation measures identified in the EIS, SPIR and updated responses, as modified by these conditions will be implemented;
- How the relevant CoAs will be complied with; and
- How issues requiring management during construction (including coordination of concurrent activities of other projects as well as concurrent activities in this Critical State Significant Infrastructure (CSSI)), as identified through ongoing environmental risk analysis, will be managed.

This CEMP will be developed and implemented in compliance with the ARTC's Inland Rail Programme Environmental Management Plan (0-0000-900-EEC-00-PL-0001). As noted in CoA A3, where there are any inconsistencies, the requirements set out in the CoA's take precedence.

3.2 Objectives and Targets

Environmental objectives and targets for construction of the N2NS have been established as a means of guiding environmental management of the project and assessing environmental performance. These objectives and targets have been developed with consideration of key issues identified through the environmental assessment and risk assessment process (see Section 7) as well as the CoAs and RMMs. The objectives and targets are consistent with Trans4m Rail's Environment Policy and will assist in monitoring whether the commitments of the policy are being met. Project wide objectives and targets are outlined in Table 7 and issue specific objectives and targets are addressed in the respective sub-plans.

The performance of the Project will be monitored against the objectives and targets. Project performance monitoring will be documented in the Project construction compliance reports (see Section 7) and at least on a quarterly basis as part of the management review.

Table 7: Environmental Management System Objectives and Targets

OBJECTIVE	TARGET
Minimise potential impacts on the local and regional environment and the local community.	Any non-conformances or opportunities for improvement identified in internal or external audits and/or environmental inspections addressed within timeframes specified in Trans4m Rail's EMS.
	All communication with and any complaints from local community members addressed within timeframes specified in Trans4m Rail's EMS.
Foster a positive culture towards environmental management with all involved in the Trans4m Rail team	All Trans4m Rail team members (including sub-contractors, etc.) to have completed an environmental induction and committed to Trans4m environmental charter prior to commencing works on-site.
	Two environmental communications (toolbox talks, site meetings, etc.) where environmental issues are specifically addressed per month.
Compliance with (and where possible exceed) all environmental regulation requirements	No regulatory infringements or prosecutions.
	Zero enforcement notices and penalties.
Implement and continually improve Trans4m Rail's environmental management system in accordance with AS/NZS ISO 14001	Address non-conformances and corrective actions as specified in Section 10.3. Undertake regular environmental compliance reviews for continuous improvement

3.3 Environment Policy

Trans4m Rail believes that respect for the Project location, its surroundings and the communities in which it operates is essential for project success, as well as compliance with all environmental, sustainability, heritage and community requirements. This commitment is described in Trans4m Rail's Environment Policy, Sustainability Policy and Community Policy. These policies outline the commitment to establish environmental and sustainability management and community engagement plans to avoid, minimise and mitigate impact. The Policies are provided in Appendix A.

These policies will be communicated to staff and Contractors via inductions and ongoing awareness programs as set out in Section 8.5.

4 Project Description

The Narrabri to North Star (N2NS) Project is one of 13 projects that make up the Inland Rail Project. The route is within the Narrabri, Moree Plains and Gwydir Local Government Areas (LGAs) in north west NSW. N2NS extends approximately 173km from north of Narrabri Junction, terminating at North Star (Figure 1) and the project is generally within the existing rail corridor. Works over the Gwydir Floodplain (shown in green in Figure 1) are excluded from the N2NS Project.

Appendix C contains figures showing details such as the location of:

- Project location;
- Key Project features; and
- The Construction Impact Zone (CIZ) (i.e. the area required for project construction as described in the EIS and as amended by the SPIR.

Figure 1: Project Location

This “construct only” contract will be delivered by Trans4M Rail (an unincorporated Joint Venture between SEE Civil Pty Ltd and John Holland Pty Ltd). This CEMP addresses construction of Phase 1, which is referred to as ‘the preferred infrastructure’ for the purposes of the SPIR. It is not proposed to construct this project in a staged manner.

The N2NS Project is declared Critical State Significant Infrastructure (CSSI) under Section 5.12 of the *NSW Environmental Planning and Assessment Act 1979* (EP&A Act) (Application No. SSI 7474). The Project is therefore permissible without development consent and is subject to assessment and approval by the Minister for Planning and Public Places under the EP&A Act. The N2NS was approved with conditions on 13th August 2020.

The N2NS is also a controlled action under the *Commonwealth Environment Protection Biodiversity Conservation Act 1999 (EPBC Act)* (referral reference 2016/7729) and requires approval from the Federal Minister for Agriculture, Water and the Environment. Approval received 1st October 2020, (Narrabri to North Star Section of Inland Rail, NSW (EPBC 2016/7729).

4.1 Scope of Works

As noted in the SPIR, the key features of the preferred infrastructure include:

- Upgrading 173km of the track, track formation, culverts and underbridges within the existing rail corridor, in two sections between
- Narrabri and Alice Street in Moree (a distance of about 93 kilometres) and
- Camurra North and North Star (a distance of about 80 kilometres);
- Realigning the track within the existing rail corridor at Gurley and Moree stations;
- Providing five new crossing loops within the existing rail corridor at Bobbiwaa, Waterloo Creek, Tycannah Creek, Coolleearllee, and Murgo;
- Removing the existing bridge and providing a new rail bridge over Croppa Creek; and
- Potential for providing a new pedestrian bridge over the existing rail corridor at Jones Avenue in Moree (‘the Jones Avenue overbridge’).

Ancillary work includes:

- Upgrading, relocating or consolidating 75 level crossings;
- Upgrading, relocating or consolidating 250 rail culverts, 98 road culverts, 3 irrigation crossings and 8 under-bridges;
- Modifications to platforms at Moree Station; and
- Signalling and communications, signage, fencing, noise attenuation structures, rail maintenance access roads, and services and utilities.

4.1.1 Ancillary Facilities

Trans4m Rail’s main office complex will be located in Moree and will accommodate approximately 140 Trans4m Rail and ARTC staff. Satellite offices will be located approximately 6km south of Bellata and approximately 2.5km north of Croppa Creek (pending ARTC landowner agreement). Approximately 17 ancillary facilities will be required to construct the project. These satellite offices and construction compounds are contained within the CIZ assessed as part of the EIS and SPIR.

In accordance with CoA A17, the Trans4m Rail Construction ancillary facilities (Bellata, Moree and Croppa Creek) will be approved and constructed under a Site Establishment Management Plan (SEMP). NOTE: In accordance with CoA A18, the facilities will not be operated until the CEMP is approved by the Secretary. :

- Construction of temporary intersections and minor access roads
- Establishment of Construction Ancillary Facilities including site compounds and laydown areas *
- Establishment of Survey and Environmental Surveys
- Geotechnical investigation and sampling
- Temporary craneage and piling platforms

- Temporary haul road adjacent to rail formation
- Utility detection and protection measures

*NOTE: Upon approval of this CEMP, all remaining outstanding ancillary activities listed above will be governed by the approved CEMP.

Minor construction ancillary facilities within the construction boundary, (lunch shed office sheds, material laydown sites, stockpile areas, areas used to assemble infrastructure and portable toilet facilities) will be established and operated following assessment and approval by the Environmental Representative.

4.1.2 Construction activities

Table 8 outlines construction activities for each construction phase.

Table 8: Construction activities

CONSTRUCTION PHASE	CONSTRUCTION ACTIVITIES
Site Establishment for Construction Ancillary Facilities	• Establish environmental controls • Survey set out, clearing and grubbing, (including pre-clearing flora and fauna surveys). • Preparation of the site • Installation of the site huts • Power, internet and water supply • Fencing and security • Access/egress to site • Ongoing monitoring of environmental controls
Earthworks, Drainage, Structures	• Establish environmental controls • Establish temporary crossings and structures platforms • Establish open drain system • Deconstruct existing rail formation • Remove and install box culverts • Mix and reinstate soils • Lime stabilise • Crushed rock capping and ballast • Demolish and install bridge structures • Ongoing monitoring of environmental controls
Track works	• Establish environmental controls • Track upgrading • Crossing loop construction • Turnout construction • Drainage construction • Ongoing monitoring of environmental controls
Level Crossings	• Establish environmental controls • Remove existing controls and install new controls • Civil works to road pavements • Ongoing monitoring of environmental controls • Consolidate crossings, remove signage and complete road surfacing works and track upgrades
Signalling, Testing and commissioning	• Establish environmental controls • CSR Trenching • Signalling to loops and sidings • Test and commission rail line and communication/signalling systems • Ongoing monitoring of environmental controls

CONSTRUCTION PHASE	CONSTRUCTION ACTIVITIES
Finishing works	▸ Return all construction sites, compounds and access routes to at least the same condition than prior to construction commencing. ▸ Progressive reinstatement and rehabilitation during works, including: ✓ Demobilize site compounds and facilities ✓ Remove all materials, waste and redundant structures from the works sites ✓ Form and stabilize spoil mounds ✓ Decommission all temporary work site signs ✓ Remove temporary fencing ✓ Establish permanent fencing ✓ Decommission temporary site access roads ✓ Restore and rehabilitate disturbed areas as required ▸ Remove temporary environmental controls, (once rehabilitation works complete)

Indicative plant and equipment that could be used during construction includes:

- Dozers D6 to D8
- Excavators 5t to 60t
- Articulated Dump Trucks 25t to 45t
- Graders 140 to 160
- Loaders 938 to 950
- Pugmill
- Concrete Pumps
- Mobile cranes 20 to 90t
- Crawler Cranes up to 280t
- Scrapers 627 to 657
- Water carts 10KL to 30KL
- Rollers 3t to 25t
- Stabilisers
- Lime Delivery Tankers
- Lime Spreader Trucks
- Hydromulch Trucks
- Concrete delivery trucks
- Flatbed delivery trucks Tilt trays
- Piling Rigs and service cranes
- Backhoe
- Compactor 815 to 825
- Road Paver
- Road Shuttle Buggy
- Truck and dogs
- Road trains
- Personnel Busses
- 3T crew trucks
- Tamping Machines and ballast regulators
- Switch tamper
- Mobile flashbutt welder
- Ballast train
- Trencher

4.2 Construction Schedule

Overall, the works will take approximately 27 months including site establishment and will be undertaken in phases as follows:

- Penny's Road to Moree – Substantial construction scheduled to commence in March 2021 and be completed by the end of October 2021;
- Narrabri to Penny's Road – Substantial construction scheduled to commence in March 2022 and be completed by the end of October 2022; and
- Camurra to North Star – Substantial construction scheduled to commence in June 2021 and be completed by March 2023.

Early, low impact works are anticipated to occur from January 2021 to April 2021 preceding permanent and substantial construction works.

In accordance with CoA E1 and Noise and Vibration Management Plan (NVMP), works will be undertaken during the following hours:

- 7:00am to 6:00pm Mondays to Fridays
- 7:00am to 6:00pm Saturdays; and
- At no time on Sundays or public holidays.
- Additionally, and in relation to CoA E4 – Trans4m Rail and ARTC will look to seek negotiated agreements with sensitive receivers (owners and occupiers) to carry out works in accordance with the hours and noise limits specified in the negotiated agreements."

Any works outside of these hours will be subject to an out-of-hours work protocol and/or the subject of written agreements negotiated between Trans4m Rail and sensitive receivers. Construction hours are discussed in detail in Trans4m Rail's Noise and Vibration Management Plan.

4.3 General Changes to the Project

As required by CoA A2, "*The CSSI must be carried out in accordance with all procedures, commitments, preventative actions, performance criteria and mitigation measures set out in in the documents listed in Condition A1 unless otherwise specified in, or required under, this approval.*"

Refinements to the Project may occur during detailed design or changed circumstances throughout construction. Design changes or changes in scope will be communicated to the Trans4m Rail Environment Manager either through formal change processes or via informal written communications. This does not include phone calls as this information cannot be tracked.

Proposed changes are to be assessed by Inland Rail for consistency against the approved Project. The Trans4m Rail Environment Manager will undertake an assessment of the proposed changes for potential impacts and compare them to the proposed impacts for the assessed and approved Project. These changes could be managed through ARTC's Consistency Assessment Work Instruction (Consistency Assessment Work Instruction - 0-0000-900-EEC-00-WI-0013). Once prepared, consistency assessments will be submitted to Inland Rail (ARTC) for determination. Any consistency assessment and associated report required by Trans4m Rail will include:

- A description of the approved development / activity / works;
- A description of the proposed development / activity / works;
- Justification for the proposed development / activity / works;
- A description of the existing surrounding environment;
- An assessment of the environmental impacts of the construction works, including, but not necessarily limited to traffic, noise and vibration, air quality, soil and water, ecology and heritage;
- Details of mitigation measures and monitoring specific to the proposed development / activity / works that would be implemented to minimise environmental impacts;
- Identification of the timing for completion of the proposed development / activity / works and how the site/s would be reinstated;
- Assessment of each component of the proposed development / activity / works to determine its' consistency with the approved project; and
- Assessment of any other approvals that may be required for the proposed development / activity / works.

If the proposed development/activity/works are consistent with the approved project, the Environmental Representative (in accordance with CoA A29) and ARTC will be notified of the intended changes and provided with a copy of the consistency assessment prior to the commencement of the subject works). If the proposed development/activity/works are inconsistent with the approved project, the proposed development/activity/works will be either:

- Modified to be consistent with the approved project; or
- The subject of a Planning Approval Modification process.

As N2NS is a CSSI project, changes that are not consistent with the Approval will require modification under Section 5.25 of the *Environmental Planning & Assessment Act 1979* (EP&A Act) and determination by the Minister for Planning.

If required, the CEMP and management plans will be updated to incorporate any additional potential environmental impacts or management measures that resulted from the proposed changes.

5 CEMP Consultation and Stakeholder Engagement

During development of the CEMP and sub-plans, consultation occurred with identified parties as required by CoAs A5 and C4. The consultation process generally comprised:

- Trans4m Rail submitting the CEMP and Sub-plans to the relevant stakeholders for review and comment;
- Trans4m Rail making presentations to stakeholders, including an explanation of the consultation program;
- The stakeholder(s) being given a reasonable opportunity to comment on the materials presented with a minimum of 10 business days to provide comment where practicable. Trans4m Rail documented the stakeholder's comments, summarised the consultation conducted, the stakeholders' comments received and Inland Rail's response to the comments; and
- Environmental management documentation being submitted to the Secretary for approval accompanied by:
  - ✓ A description of the form and extent of consultation undertaken with councils/stakeholders,
  - ✓ Any written comments from stakeholders,
  - ✓ A written response to comments raised by stakeholders, and
  - ✓ The components of the consultation summary, comments and response relevant to that stakeholder being made available to the stakeholder, if requested, following approval of the documentation.

Parties consulted for the CEMP and sub-plans are outlined in Table 9.

As required by the CoA, consultation was conducted prior to the initial approval of the relevant document or implementation of the relevant management action, unless otherwise stated or agreed with the relevant stakeholder. Records of responses from those consulted and how their issues were addressed are contained in the relevant SEMP and sub-plans.

Trans4m Rail's CSEMP provides further detail on the consultation process.

Table 9: Consultation Undertaken for Management Plans

MANAGEMENT PLAN	IDENTIFIED PARTIES
Site Establishment Management Plan	▸ Narrabri Shire Council ▸ Moree Plains Shire Council ▸ Gwydir Shire Council ▸ Transport for NSW
Traffic, Transport and Access	▸ Narrabri Shire Council ▸ Moree Plains Shire Council ▸ Gwydir Shire Council ▸ Transport for NSW
Noise and Vibration	▸ Narrabri Shire Council ▸ Moree Plains Shire Council ▸ Gwydir Shire Council
Biodiversity	▸ DPIE Environment, Energy and Science ▸ Federal Department of Agriculture, Water and Environment ▸ Narrabri Shire Council ▸ Moree Plains Shire Council ▸ Gwydir Shire Council
Soil and Water	▸ Narrabri Shire Council ▸ Moree Plains Shire Council ▸ Gwydir Shire Council

MANAGEMENT PLAN	IDENTIFIED PARTIES
	▸ DPIE Water Group ▸ DPIE Environment, Energy and Science
Heritage	▸ Registered Aboriginal Parties ▸ Department of Premier and Cabinet Heritage ▸ Narrabri Shire Council ▸ Moree Plains Shire Council ▸ Gwydir Shire Council
Flood Emergency	▸ State Emergency Services ▸ DPIE Environment, Energy and Science ▸ Narrabri Shire Council ▸ Moree Plains Shire Council ▸ Gwydir Shire Council

6 Legal and Compliance Requirements

6.1 Legal and Other Requirements

As discussed in Section 1.1, the N2NS project is a Controlled Action under the EPBC Act (1999) and a CSSI under the EP&A Act (1979). Under Section 45 of the EPBC Act (i.e. the bilateral agreement between the NSW and Federal Governments), the Project has been assessed by DPIE for both State and Federal approvals. The Project Approval documentation includes the Narrabri to North Star EIS, associated technical assessments, Submissions Report and SPIR and approval granted via the CoA issued by the NSW Minister of Planning and Public Spaces and the EPBC Act approval issued by the Federal Minister for the Environment. The Compliance Matrix (Tables 1 – 4) at the beginning of this document provides an overview of where the CoA, EPBC Act approval and other environmental requirements have been addressed within the CEMP:

- Environment Protection and Biodiversity Conservation Act 1999, Conditions of Approval (EPBC Act CoAs);
- Critical State Significant Infrastructure Conditions of Approval (CSSI CoAs);
- Revised Environmental Management Measure (REMMS); and
- Secretary's Environmental Assessment Requirements Environmental Protection Outcomes, (SEARs EPOs).

If there is any inconsistency between the procedures, commitments, preventative actions, performance criteria and mitigation measures set out in the documents above, or within this CEMP, in accordance with CoA A3 the CoA shall prevail to the extent of the inconsistency.

Any changes made to the legal requirements register will be communicated to the wider team where necessary through toolbox talks, specific training and other methods detailed in Section 7.2.

This CEMP will be developed and implemented in compliance with the ARTC Inland Rail Programme Environmental Management Plan (0-0000-900-EEC-00-PL-0001).

A full legal register is provided in Appendix A.

6.1.1 Exemptions

As the N2NS project is declared CSSI, applications for the Project are required to be submitted under Part 5, Division 5.2 of the EP&A Act. The NSW Minister for Planning is the approving authority for applications for CSSI. The application is subject to the provisions and requirements of a rigorous and robust planning process under the EP&A Act.

Under Parts 5.23 of the EP&A Act, the CSSI is exempt from the following approvals:

- Fisheries Management Act 1994 (approvals for fish passage under sections 201, 205 or 219);
- Heritage Act 1977 (Heritage Orders under Division 8 of Part 6 and Aboriginal heritage impact permit under section 90);
- Water Management Act 2000 (approval for water use under section 89 and water management work approval under section 90 (other than an aquifer interference approval) or an activity approval under section 91); and
- Rural Fires Act 1997 (approval for a bushfire safety authority under section 100B).

6.2 Environment Protection Licence

The Protection of Environment Operations Act (1997) (POEO Act) requires an Environment Protection Licence (EPL) to be held by the entity conducting a scheduled activity. Recent revisions to Schedule 1 of the POEO Act introduced three aspects that relate to railways: (i) Railway infrastructure construction (ii) Railway infrastructure operation, and (iii) rolling stock operation. Trans4m Rail (with John Holland Pty Ltd as the signatory) are in the process of obtaining an EPL for construction process. This CEMP will be updated following receival of this EPL to include an overview of EPL approval conditions and identify where in this CEMP they are addressed. All conditions set by the EPL are obligatory for the N2NS works and all relevant licence conditions will be applied.

6.3 Environmental Management Plan Guideline

DPIE's *Environmental Management Plan Guideline – Guideline for Infrastructure Projects* (2020) was prepared to assist project proponents to prepare effective EMPs for State Significant projects. The guideline identifies the information that should be provided in an EMP and sets out the DPIE's expectations for lodgement, approval, and publication. This N2NS CEMP has been prepared within the framework provided by the guideline. The Compliance Matrix at the beginning of this document summarises how this CEMP is consistent with the guideline by providing responses to the EMP preparation checklist in Appendix A of the guideline.

6.4 Approvals, Permits and Licences

Trans4m Rail and/or Inland Rail will obtain licences, permits and approvals as required by law for the works and maintain them as required throughout delivery of the Project. Trans4m Rail shall comply with all relevant legal requirements. Copies of licences, approvals and permits relevant to the scope shall be held on site with files available for audit and inspection purposes.

Trans4m Rail will determine what approvals, licences and permits are required for the work scope and obtain each necessary approval, licence and permit not obtained by Inland Rail prior to the commencement of any work which relates to that approval, licence, notification or permit. Additional approvals permits and licenses may be required as per Table 10, Potential Additional Approvals.

A live Permits, Approvals and Licences Register will be maintained in Trans4m Rail's Project Pack Web (PPW) (see Section 6.1). This register will be supported by an Obligations Register, also managed in PPW that will enable tracking and monitoring of conformance with each condition of approval, together with any other environmental obligation, including contract environmental obligations. This register will be reviewed at least annually to identify any regulatory changes and as soon as practicable should the approved project be modified.

A register of additional approvals and other requirements that may be required for the Project is included in Table 10. This register will be maintained by Trans4m Rail throughout the Project and updated as required. Updates may include new/amended approvals and licences, updated legislation, standards and codes of practice, or changes as a result of management reviews or internal or external audits.

Table 10: Potential Additional Approvals

LEGISLATION	APPROVAL	SUMMARY OF OBLIGATIONS	RELEVANCE TO THE PROJECT
Protection of Environment Operations Act 1997 (POEO Act)	Environment Protection Licence	POEO Act requires an EPL to be held by the entity conducting a scheduled activity. Recent revisions to Schedule 1 of the POEO Act introduced three aspects that relate to railways: (i) Railway infrastructure construction (ii) Railway infrastructure operation, and (iii) rolling stock operation	Construction of the project is consistent with "railway infrastructure construction" and so, requires an EPL. As the construction contractor will control the site, the contractor must apply for and hold a project specific EPL.
Roads Act 1993	Road authority approval (including for temporary closure of level crossings)	Under Section 138 of the Roads Act, an approval from the relevant roads' authority (either TfNSW or the local council) is required to impact or carry out certain work on or over public roads.	Required for level crossing works, Newell Highway realignment and Jones Avenue road bridge.
Protection of the Environment Operations (Waste) Regulation 2014	Resource Recovery Exemptions	These exemptions allow some wastes to be beneficially and safely re-used independent of the usual NSW laws that control applying waste to land, using waste as a fuel, or using waste in connection with a process of thermal treatment.	Possibly required for timber sleeper disposal.
Water Management Act 2000	Water access licence (WAL)	A WAL is required for the "taking" of water from a surface water or groundwater source, including from overland flow above the amount of any available "harvestable rights" which apply to the relevant land. WALs are shell licences which relate to a specified water source and attach a specified number of units, and the units determine how much water can be "taken" from that source. Units can be traded on open markets. A licence would be sought under Part 5 of the Water Act if extraction of more than 3 megalitres of groundwater per year is required to construct the proposal	A WAL holder may transfer their WAL to someone else for a set period of time (not less than six months). This does not require an application to WaterNSW however the term "transfer" has to be registered by Land and Property Information once the agreement is complete (Golder, 2020).

LEGISLATION	APPROVAL	SUMMARY OF OBLIGATIONS	RELEVANCE TO THE PROJECT
Biodiversity Conservation Act 2016	Biodiversity Conservation Licence (or identified equivalent)	Granted under Part 2 of the Act, allows handlers to catch and release an animal that is a threatened species or part of an ecological community.	Spotter catchers will be engaged prior to all clearing of native vegetation and will require a Biodiversity Conservation Licence (or identified equivalent).
Electricity Supply Act 1995	Notice to an electricity entity of works near electricity works	One of the objects of the Act is to promote and encourage the safety of persons and property in relation to the generation, transmission, distribution and use of electricity.	To be obtained prior to construction near electricity infrastructure.

7 Environmental Risk Assessment

7.1 Environmental Risk Assessment Register

An initial N2NS project environmental risk assessment has been completed by Trans4m Rail (Appendix D) This risk assessment details the environmental aspects identified for the Project, potential impacts, the initial risk category prior to appropriate management strategies, indicative mitigation measures, risk level following mitigation and reference to the appropriate document/procedures/training required.

This initial risk assessment was developed based upon:

- Information contained within the EIS and SPIR (summarised above);
- Trans4m Rail's experience on similar projects; and
- Trans4m Rail's experience in the local region.

Potential environmental risk profiles associated with the N2NS were identified during a Trans4m Rail Environmental Risk workshop involving environment, sustainability and construction team members. The N2NS risks with a rating (prior to mitigation) of medium to high are summarised in Table 11 below.

NOTE: Appendix J and the relevant sub-Plans provides a high-level summary of the environmental constraints, aspects and impacts identified in the Project EIS and SPIR.

Table 11: Summary of initial environmental risk assessment

ISSUE	POTENTIAL IMPACT	WHERE ADDRESSED	RESIDUAL RISK
Traffic, Transport and Access	Construction traffic impacts, including temporary delays to local and regional traffic.	TTAMP	Medium
Soil and Water	Increased erosion and sedimentation due to excavation activities and vehicle movement.	SWMP	Medium
	Disturbance of unidentified contaminated soils.	SWMP	Medium
Biodiversity	Clearing of native vegetation resulting in loss of fauna habitat, habitat fragmentation and loss of connectivity.	Inland Rail's Offset Management Strategy, Trans4m Rail's CBMP	High
	Direct impacts on threatened species and endangered populations and communities (terrestrial) and clearing.	Inland Rail's Offset Management Strategy, Trans4m Rail's CBMP	High
Noise and Vibration	Noise impacts on local residents and sensitive receivers from construction activities including out of hours works.	NVMP	Medium
Air Quality	Potential impact on air quality a result of the generation of dust from construction works and the movement of equipment and machinery	SWMP	Medium
Hydrology and flooding	Sedimentation and changes to geomorphology (aggradation in bed channels) in watercourses.	SWMP	Medium

ISSUE	POTENTIAL IMPACT	WHERE ADDRESSED	RESIDUAL RISK
Aboriginal Heritage	Disturbance of known or unidentified items or places of Aboriginal heritage significance	HMP	Medium
Non-Aboriginal Heritage	Damage to heritage items from vibration during construction or operation	HMP	Medium
	Disturbance of known or unidentified places of non-Aboriginal heritage significance	HMP	Medium
Socio-economic, land use and property	Temporary impacts on land use during construction including impacts to local businesses. Impacts include reduced access, reduced amenity, loss of privacy.	CSEMP	Medium
Health and Safety	Reduced safety for road users and pedestrians during construction particularly in the vicinity of houses, businesses and townships.	Construction Management Plan and Safety Management Plan	Medium

7.2 Risk and Hazard Management Approach

The ongoing process of assessing and reducing environmental risk will be achieved through Trans4m Rail's Managing SQE Risks Procedure (T4MR-MPR-SQE-006). This procedure involves preparing a series of progressively more in-depth risk assessments and method statements at a more detailed level for each construction activity including:

- Workplace Risk Assessment (WRA);
- Activity Method Statement (AMS);
- Task Risk Assessment (TRA); and
- Environmental Control Maps (ECMs).

The WRA, AMSs, TRAs/SWMSs and ECMs are pivotal to the management of all activities during delivery. They allow operational controls to be developed and implemented, case by case, for all the different workplaces, activities and tasks that are encountered on the project.

The WRA's, AMS's, TRA's/SWMSs and ECMs are owned by the Trans4m Rail's Project Management Team (incl. Environmental Manager), Environmental Coordinators, Project Engineers, Supervisory Staff and Workforce. Subject matter experts act as advisors during the preparation of these documents ensuring that information from the CEMP is suitably incorporated and acted upon. Implementation of the Managing SQE Risk Procedure by the Project, will allow the actions identified in relation to risks and opportunities, and the achievement of environmental objectives, to be incorporated and used to establish operating criteria and controls.

Trans4m Rail will maintain the environmental risk register to address risks specific to changes to scope. Risks will be required to be reviewed at least 6 monthly and will also be reviewed in response to incidents, changes in legal requirements, change in Project scope, findings of inspections and audits, and management reviews.

8 Environmental Management Framework

8.1 Trans4m Rail Environmental Management System

Trans4m Rail will be utilising John Holland Group's Environmental Management System (EMS) (which is certified to ISO AS/NZS14001) to enhance its' environmental performance. John Holland have established, implemented, maintained and continually improved an ISO AS/NZS 14001 certified EMS since 1999. The EMS is part of an Integrated Management System (IMS) which contains policies, standards, manuals, plans, procedures, processes and other key documents that enable both the overall organisation and operations to achieve their objectives through planned and controlled processes. The Trans4m Rail EMS will be supported by operating platforms for the efficient and integrated electronic management of EMS information. These include "Event Tracker" and "Project Pack Web", both are further described in Section 8.1.1, Figur 2 shows the documents and hierarchy of the EMS elements within the IMS. The basis for the John Holland EMS (and also this CEMP) is the ISO 9001 concept of Plan-Do-Check-Act (PDCA). The PDCA model provides an iterative process to achieve continual improvement.

It can be briefly described as follows:

- **Plan**: establish environmental objectives and processes necessary to deliver results in accordance with the Trans4m Rail Environment Heritage Policy;
- **Do**: implement the processes as planned;
- **Check**: monitor and measure processes against the Environment and Heritage Policy, including its commitments, environmental objectives and operating criteria and report the results; and
- **Act**: take actions to continuously improve.

This CEMP comprises one part of a suite of documents that form the Project EMS, comprising:

- Trans4m Rail's Environment Policy (B);
- Trans4m Rail's Environment Management Manual (describes the Environmental Management Framework that is the basis of the EMS);
- Global mandatory requirements (GMR) GMRs that are applied to all John Holland projects and are a suite of environmental requirements developed and implemented to address the organisation's key operational environmental risks and issues, and establish the minimum operational environmental standards);
- Project Construction Environment Management Plan, sub-plans and the SEMP; and
- Trans4m Rail project environmental procedures, tools and knowledge.

In accordance with the Trans4m Rail Environment Policy, Trans4m Rail will:

- Continuously improve the EMS to enhance performance, such as through management review and CEMP revisions (see Section 12.1);
- Maintain third party certification of the EMS to ISO 14001 as independent verification of implementation and effectiveness; and
- Fulfil the Project's environmental objectives and compliance obligations.

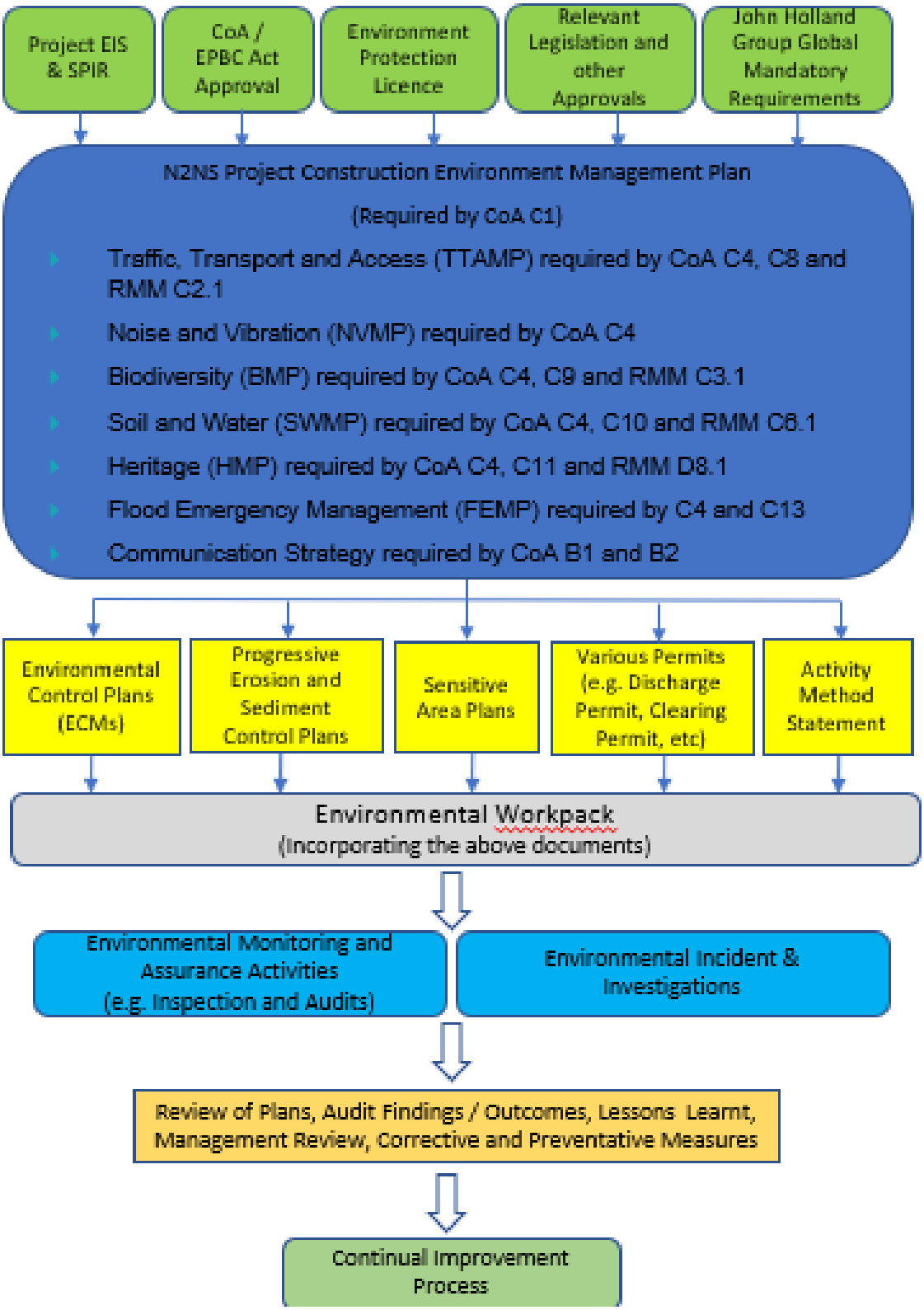

Figure 2: Hierarchy of EMS elements

The scope of the EMS on the N2NS project includes all activities, products and services that Trans4m Rail have authority and ability to exercise control over and having regard to a life cycle perspective as defined in ARTC's Request for Tender Section D – Works Description Stage 5 N2NS Construction Works (2600-0018 N2NS).

8.1.1 Operating Platforms

The Project's Management System will comprise and be supported by a framework of web-based operating platforms that centralises all the Safety, Quality, Environmental, Social, Cultural Heritage and Sustainability documents, plans, procedures and records. All project personnel will be trained in use of the management system and must adhere to its use. Two of the key operating platforms, Event Tracker and Project Pack Web are described below.

Document Management System

The Project's DMS is Aconex. Aconex is a cloud-based project document management system designed to manage the storage and exchange of electronic information internally and externally. All parties involved can access the latest information for the project from any location (with internet connectivity/access) and on a variety of device types. Aconex is used for the storage, management, and registered distribution or receipt of project documentation such as:

- Project design documentation including construction drawings
- Project management plans, policies and procedures
- All external correspondence; all types/forms of correspondence to external parties including Project Client, Subcontractors and Suppliers
- Any internal correspondence discussing the scope of works, including; project specification requirements, changes/amendments, contract documents, Site Instructions, Request for Information, invoicing, etc.

Event Tracker

Event Tracker provides a single management and reporting source for Safety and Environmental events. Event Tracker is the platform for the notification, reporting and management of all HSE incidents and corrective actions, including non-conformances, WHSE Statistics management with a holistic approach to managing audits and inspections. Event Tracker can be made accessible by external parties including the client and subcontractors.

Project Pack Web (PPW)

Project Pack Web is a web-enabled platform that performs a numbering of functions as outlined below:

- **Contact and Company management** - including subcontractors, subcontractor approvals and ratings;
- **Risk Management** – Work Risk Assessment, Activity Method Statement, Task Risk Assessment, Environmental Control Maps, Inspection & Test Plan, Checklist;
- **Procurement** – Purchase Requisition;
- **Production** – Authorised Signature, Events/Progress (Management Journal, Site Diary), Materials (Client Supplied Item Record, Register of Samples / Specimens, Store Register), Plant and Equipment, Work Lots (Work Lot, Approved Mix Design);
- **Environment** including Resource Usage, Waste & Recycling, Subcontractor Data, NGER Assessment, Approval / License Register, Obligations Register, Air Emission Monitoring, Blasting & Painting Checklist, Dust Monitoring, Erosion & Sedimentation Monitoring, Fauna Monitoring, Noise and Vibration Monitoring, Soil Monitoring, Water Monitoring, Weather Station Monitoring;
- **Quality** including Product & Systems NCR Management, Hold & Witness Point Notification, Subcontractor ITP/Checklist, Subcontractor Quality Manual Plan, Subcontractor Work Method Statement);
- **Safety** including Asbestos Register, Chemical Register, Excavation and Trench Checklist, Fall Restraint Inspection Register, Permits, Pre-Start Meeting Register, Safety Observation, Safety Toolbox Meeting Register, Uniform and PPE Register; and
- **Completion** – Defect List, Punch List.

Being web-enabled means PPW can be accessed on mobiles devices (i.e. computer, phone, tablet). PPW can be made accessible by external parties including the client and subcontractors.

Dashboard Reporting

Each month Trans4m Rail's environmental performance will be presented in a dashboard to communicate the project's performance. The dashboard report will be provided monthly to Executive Management, the HSEQS Systems and Compliance team, the Region HSEQS teams and can be incorporated into the Monthly Environmental Return to Inland Rail. The dashboard uses several indices to demonstrate performance such as:

- Incidents;
- Initiatives;
- Resource use intensity metrics; and
- Environment impacts internal audit outcomes and monthly Global Mandatory Requirements (GMR) Assessments.

Appendix I depicts an example snapshot of the dashboard.

8.1.2 Workplace Risk Assessment

The Workplace Risk Assessment (WRA) is a multi-disciplinary risk assessment, undertaken prior to project award to identify all high level, Project-wide risks associated with health and safety, quality, environment, community, corporate reputation and project delivery i.e. commercial, resource availability, construction program and budget.

The WRA is attended by representatives from all project disciplines and considers the following:

- The key work activities to be undertaken under the Project; and
- The size and complexity of the Project and the activities, the packages of work, the trades and disciplines required, key work interfaces, key stakeholders and Subcontractor use.

The WRA assesses both unmitigated and mitigated risks and identifies the key work activity requiring an Activity Method Statement.

8.1.3 Activity Method Statement

The Activity Method Statement (AMS) is a Multi-Disciplinary Hold Point process, involving Trans4m Rail personnel and subcontractors that integrates Work Methodology Plans with risk assessment to mitigate impact and ensure environmental, safety and quality compliance. Trans4m Rail will use the AMS to describe the construction implementation in detail for an activity that integrates the methodology, risk assessment, instruction and procedures for design, construction, environment, quality and safety, permits, approvals, resources, equipment and personnel.

All construction personnel and sub-contractors undertaking a task governed by an AMS must participate in appropriate training and acknowledge that they have read and understood their obligations prior to commencing work.

8.1.4 Environmental Control Maps

To aid in the identification and protection of significant environmental features associated with the project, a set of Environmental Control Maps (ECMs) have been prepared. The minimum requirements for ECMs include:

- Specific measures included in the relevant work method statements to prevent adverse environmental impacts.
- Relevant drawings showing:
  - ✓ Location and scope of works to be managed
  - ✓ Environmental constraints and 'no go' zones
  - ✓ Location and nature of environmental controls
  - ✓ Nature and frequency of monitoring for identified potential adverse impacts
  - ✓ Procedures for notification of incidents or hazards.

A copy of each of the worksites' ECM will be available to all Trans4m Rail personnel and subcontractors and current versions are to be displayed at each of the worksite locations, or in the supervisor's vehicle where there is no fixed site facility.

The ECMs are working documents and will be updated throughout construction, as required.

8.1.5 Task Risk Assessment

Task Risk Assessments (TRA) are team - based planning risk assessments which aim to address hazards and risk control reduction at a task level. TRA's are facilitated in the field prior to the task commencing by the Supervisor, Leading Hand and/or Engineer and are primarily identified by the AMS.

8.2 Relationship between this CEMP and other EMS documents

The Trans4m Rail project EMS contains policies, standards, manuals, plans, procedures, processes and other documents that enable the project to achieve its objectives through planned and controlled processes.

This CEMP comprises one part of a suite of documents that that will manage the N2NS. These include the project's:

- Project Management Plan;
- Construction Management Plan;
- Sustainability Management Plan;
- Community and Stakeholder Engagement Management Plan;
- Safety Management Plan; and
- Quality Management Plan.

The CEMP is also the umbrella for other project environmental management documents such as plans, protocols, strategies, reports and programs to ensure the Project CoA and REMMs are implemented.

In addition to the CEMP, CoA A17 requires the development of a Site Establishment Management Plan (SEMP) for the management of the establishment of construction ancillary facilities (excluding minor ancillary facilities). The SEMP must be prepared and submitted to the Planning Secretary one month prior to the establishment of any construction ancillary facilities (excluding minor ancillary facilities). The SEMP will remain the management document (specific to the scope approved) until such time that the CEMP is endorsed by the ER and approved by the Secretary. At this time, the SEMP will be superseded by the CEMP, which will become the key management document on the project. Once the SEMP has been approved, any specific requirements that are over and above the requirements of this CEMP, in relation to the management of construction ancillary facilities, will be included in Appendix H.

8.3 Construction Environmental Management Plan

The CEMP is the overarching "road map" and management tool in relation to environmental performance during Project delivery. The CEMP links the relevant legislative and client requirements to the projects EMS and describes the construction environmental management framework for the Project and the system for minimising and managing environmental risks. The CEMP and relevant management plans have been prepared in consideration of the CoA, the REMMs presented in the SPIR and Trans4m Rail's EMS.

The CEMP provides the overall framework for the system and procedures to ensure environmental impacts are minimised and legislative and other requirements are fulfilled.

A number of environmental management sub-plans are required to support the CEMP. They document the aspects, impacts, management measures and monitoring requirements for each key environmental aspect. The CoA and REMMs define the content and issues to be addressed in the management plans. The sub-plans are listed in Sections 1.1 and 3 and in the Table 12 below

Table 12: Sub-Plans and Construction Monitoring Programs

CEMP SUB-PLAN OR CONSTRUCTION MONITORING PROGRAM	WHERE REQUIRED
Traffic, Transport and Access Management sub-Plan	CoA C4 and C8 RMM C2.1
Noise and Vibration Management sub-Plan	CoA C4
Biodiversity Management sub-Plan	CoA C4 and C9 RMM C3.1
Soil and Water Management sub-Plan	CoA C4 and C10 RMM C6.1
Heritage Management sub-Plan	CoA C4 and C11 RMM D8.1
Flood Emergency Management sub-Plan	CoA C4 and C13
Communication Strategy	CoA B1 and B2
Noise and Vibration Monitoring Program	CoA C14(a)
Water Usage Monitoring Program	CoA C14(b)
Air Quality Monitoring Program	CoA C14(c)
Local Roads Monitoring Program	CoA C14(d)

In accordance with CoAs C13 and C18, construction will not commence until the CEMP (incl. sub-plans and the Construction Monitoring Programs) are endorsed by the Environmental Representative (ER) and approved by the Planning Secretary of DPIE. The CEMP and Construction Monitoring Programs will be submitted to the Secretary for approval no later than one month prior to the commencement of construction as required by CoAs C7 and C17.

8.4 Key Environmental Management Roles and Responsibilities

The key environmental management roles and responsibilities for the implementation of the CEMP are outlined in Table 13 below.

The following persons are nominated as key contacts in the event of any of the following occurring: environmental incidents, emergencies or non-compliances.

Name	Position and Contact Details
Project Director	Project Director: John Holmes Mobile: 0427 132 875 Email: jon.holmes@t4mr.com.au
Environment Manager	Environment Manager: Pippa Donaldson Mobile: 0433 022 101 Email: Pippa.Donaldson@t4mr.com.au

8.4.1 Management Structure Responsibility

The specific areas of responsibility of Environmental personnel are summarized as follows:

1. Top Level Management are the Trans4M Rail Steer Co. management representatives. These managers are independent of the project.

2. The Operations Health, Safety, Environment, Quality and Sustainability (HSEQS) Managers, provided by John Holland Group, has a line responsibility to the Infrastructure and Rail HSEQS Managers who in turn reports to the Steer Co management representatives.
3. The Environmental Management System (EMS) relies on the commitment and technical expertise of the Trans4M Rail staff and its subcontractors in its implementation and operation.
4. Fundamental checking by site supervisory staff and site-based subcontractors will also be a feature of the EMS. Placing responsibility for the achievement of environmental objectives at the workface will lead to greater accountability at this level.

The duties and responsibilities of all Trans4m Rail staff are defined in Position Descriptions, a copy of which is held by the staff member.

The Trans4m Rail Organisational Chart showing all key positions has been included in Appendix K.

Table 13: Environmental Management Roles and Responsibilities

TITLE	ROLES AND RESPONSIBILITIES
Trans4m Rail Project Director	▸ Environmental leadership and commitment through measurable participation in environmental management ▸ Ensure the Project is compliant with the requirements of the relevant environmental legislation ▸ Endorse and support the Project Environment and Heritage Policy attached in Appendix A. ▸ Approval authority of the Project's CEMP and other key environmental documentation. ▸ Be an emergency contact and available to be contacted by Inland Rail and DPIE representatives on a 24-hour basis ▸ Ensure adequate resources are provided to effectively implement the CEMP ▸ Overall responsibility for EMS and CEMP implementation on the project ▸ Assist in periodic reviews of the CEMP ▸ Regularly review environmental risks and controls ▸ Ensure environmental complaints are promptly reported, recorded and resolved ▸ Ensure all environmental incidents are promptly and thoroughly investigated, remediation measures identified, and other corrective and / or preventative actions implemented ▸ Negotiate and authorise contract wide initiatives ▸ Resolve and delegate responsibilities for non-compliances ▸ Resolve and escalate Project issues, ensuring strong lines of communication to all stakeholders are maintained.
Trans4m Rail Construction Manager	▸ Lead and manage the delivery of the construction process, in relation to environmental management across the N2NS in conjunction with the Environment Manager ▸ Ensure work is planned and executed to ensure legislative compliance and compliance with the EMS and CEMP ▸ Plan construction works in a manner that avoids or minimises impact to environment ▸ Direct personnel and/or subcontractors to carry out actions to avoid or minimise unintended environmental impacts ▸ Review the key environmental management documents relevant to the construction of the Project ▸ Ensuring all Project personnel attend an induction prior to commencing works ▸ Ensure inspections, observations and monitoring are performed to ensure compliance is maintained ▸ Establish training needs and environmental accountabilities, responsibilities and objectives for all project personnel. ▸ Participate in ER reviews and joint inspections, as required.
Trans4m Rail Environment Manager	▸ Overall responsibility for the implementation of environmental matters on the Project ▸ Management of the Environment and Sustainability function on the Project ▸ Report to Project Manager and other senior managers on the performance and implementation of the CEMP and any other environmental issues

TITLE	ROLES AND RESPONSIBILITIES
	▸ An emergency contact and available to be contacted by Inland Rail and DPIE representatives on a 24-hour basis ▸ Development, implementation, monitoring, annual management reviews and updating of the CEMP and sub-plans in accordance with ISO14001 ▸ Coordinate and gain relevant approvals, permits and licences for the construction phase of the Project ▸ Monitoring any legislative changes to government policies that influence this CEMP ▸ Ensure environmental risks of the Project are identified and appropriate mitigation measures are implemented ▸ Manage all sub-contractors and consultants with regards to environmental matters, including assessing their environmental capabilities and overseeing the submission of their environmental documents ▸ Determine if an occurrence is an incident ▸ Notify Inland Rail, DPIE and relevant authorities in the event of an environmental incident ▸ Key point of contact between Trans4m rail and the ER. ▸ Provide the ER with all documentation requested including the complaints register (weekly) and a copy of any assessment carried out by Trans 4M Rail of whether proposed work is consistent with the Approval ▸ Liaise with relevant government authorities, Inland Rail and stakeholders as required ▸ Developing, reviewing and conducting the Project induction, and ensuring it encompasses all the requirements of the relevant environmental acts, regulations, approvals, permits, CEMP and Sub-plans and client specifications ▸ Manage environmental document control, reporting, inductions and training ▸ Manage environmental reporting within the Project team and to ARTC and DPIE ▸ Participating in site inspections, audits, reviews, etc. with site personnel, sub-contractors and the ER; and ▸ Assist the Community and Stakeholder Engagement Manager to resolve environment-related complaints.
Trans4m Rail Environmental & Sustainability Coordinators	▸ Assist the Trans 4M Rail Environment Manager in the development and implementation of site-specific environmental documents and EPL applications and variations ▸ Lead in the preparation of Environmental Control Maps ▸ Manage the day-to-day environmental elements of construction ▸ Undertake site inspections, carry out monitoring activities and complete site checklists to assist in identifying environmental risks ▸ Advise the Trans 4M Rail Environment Manager and Trans 4M Rail Construction Manager of the need to stop work immediately if an unacceptable impact on the environment is likely to occur or other major issues from the Project ▸ Assist all site staff with issues concerning Project environmental matters ▸ Assist in developing training programs regarding environmental requirements including delivery of the environmental component of toolbox talks, as required. ▸ Liaise with the ER on an as needs basis. ▸ Participate in joint inspections with the ER.
Trans4m Rail Stakeholder Engagement Manager	▸ Ensure that all stakeholder consultation activities are carried out ▸ Assist the Trans 4M Rail Environment Manager in consulting regulatory authorities ▸ Report any environmental issues raised by stakeholders to the Trans 4M Rail Environment Manager ▸ Communicate general Project progress, performance and issues to stakeholders ▸ Maintain the 24-hour complaints hotline and the Project complaints register ▸ Assist the public with questions and complaints they may have at any time during construction and be available at all times that works are occurring. ▸ Participate in ER reviews, as required. ▸ Liaise with the ER to respond and resolved Community Complaints, if required. .

TITLE	ROLES AND RESPONSIBILITIES
Trans4m Rail Project / Site Engineers	▸ Assist in establishing the site in accordance with required environmental standards detailed in the CEMP and sub-plans ▸ Develop and review relevant Activity Method Statement (AMS) for high risk construction work activities or construction work activities in environmentally sensitive areas ▸ Check and approve sub-contractor WMS prior to them commencing work and where changes to work activities or work location are made ▸ Undertake risk assessments as circumstances change and adjust the relevant WMS and the Environmental Risk Assessment Register to include the appropriate risks and control measures ▸ Ensuring that environmental management is always considered in all forward planning for the Project ▸ Liaising with the Trans 4M Rail Environment Manager or delegate on all relevant environmental issues ▸ Conduct environmental inspections to observe potential environmental problems ▸ Complying with all environmental responsibilities assigned in relevant legislation, procedures, WMS, plans, job descriptions or any other environmental documentation ▸ Raise any environmental issues or concerns immediately or during meetings with the Trans 4M Rail Environment Manager, Construction Manager or Site Supervisor.
Trans4m Rail Site Supervisor	▸ Assist in the preparation of Environmental Control Maps ▸ Field implementation of environmental requirements and control measures ▸ Implement all monitoring and reporting requirements of the Project ▸ Daily inspections of environmental protection measures and co-ordination of maintenance as required ▸ Ensure all construction personnel are adhering to the environmental requirements of the CEMP and sub-plans and rectifying actions immediately if identified ▸ Implement or oversee the implementation of corrective actions for non-compliance resulting from audits, investigations, incidents / accidents, hazards, injuries and near misses ▸ Participate in joint inspections with the ER. ▸ Report all environmental incidents or hazards.
Trans4m Rail Construction personnel (including sub-contractors)	▸ Attend Project inductions, pre-start meetings and environmental awareness training relevant and understand and comply with environmental responsibilities ▸ Use or follow all controls established for eliminating or controlling environmental risks including those found in environmental documentation (e.g. WMS, plans, work instructions, standard operating procedures etc.) ▸ Be aware of surrounding sensitive environmental and social constraints and act in a manner that minimises impacts to those sensitive areas ▸ Compliance with all site environmental rules ▸ Report any environmental incidents, near misses and hazards immediately.
ARTC's Senior Environmental Advisor	▸ Participate in joint environmental inspections, as required. ▸ Assist the Project Team gain relevant approvals, permits and licences for the construction phase of the Project, where relevant. ▸ Liaise with relevant government authorities, Trans4m Rail Team and stakeholders, as required. ▸ Provide the key point of contact between ARTC / Inland Rail and the Project Delivery Team on all environmental matters.

8.4.2 Project Contacts

Contact details for personnel who can be contacted in the case of an emergency on a 24/7 basis are contained in the Emergency Response Plan (within the Safety Management Plan) and will be displayed in locations throughout the Project site.

8.4.3 Specialists and other environmental resources

Specialist consultants and subcontractors are engaged for environmental support roles as required. These may include:

- Certified Practitioner in Erosion and Sediment Control (CPESC) for the preparation of ESCPs, assistance with implementation of erosion and sediment control measures, and ongoing inspections and advice throughout construction
- Ecologists for critical activities, such as vegetation clearing and pre-clearance surveys
- Noise and vibration specialists for establishment and maintenance of monitoring equipment, and ongoing advice throughout construction
- Archaeologists/heritage specialists for advice on Aboriginal and non-Aboriginal heritage matters
- NATA-certified laboratories for soil and water quality analysis
- Suppliers of environmental monitoring hardware
- Other resources as required during the course of the Project.

8.4.4 Subcontractors and suppliers

All subcontractors will work under Trans4m Rail's EMS, CEMP, sub-plans and relevant procedures. Subcontractors are required to carry out their work in accordance with contract instructions and in an environmentally sound manner.

All subcontractor personnel are required to attend a project induction, which includes an environment and sustainability component and task-specific training (if relevant) before they commence any work on site (see Section 9.1). The Environment Manager, or delegate, will confirm and implement requirements for effective subcontractor control based on known project risks and demonstrated subcontractor performance, or the contrary.

All suppliers will be required to comply with any relevant requirements of this CEMP and associated sub-plans, including sustainability requirements. The Environment Manager will confirm and implement actions to ensure suppliers are aware of the requirements within the CEMP that are relevant.

John Holland Group's procedures for management of subcontractors, suppliers and consultants will be utilised.

Table 14: T4MR subcontractors, suppliers and consultants' procedures

EMS REFERENCE
Management of Design Consultants T4MR-MPR-DES-002
Purchasing T4MR-MPR-PMA-004
Inspection of Subcontracted Works T4MR-MPR-QUA-003
Letting of Consultant, Subcontract, Supply Packages T4MR-MPR-PMA-005
Administration of Consultant, Subcontract or Supply Packages T4MR-MPR-PMA-006

8.5 Competence, Training and Awareness

To ensure that this CEMP is effectively implemented, each level of management is responsible for ensuring that personnel reporting to them are aware of the requirements of this CEMP. The Trans4m Rail Environment Manager will coordinate the environmental training in conjunction with other training and development activities (e.g. safety). All personnel performing environment management activities for and on behalf of Trans4m Rail will be trained, qualified and competent. Personnel performing specified assigned tasks shall be qualified on the basis of appropriate education, training, skills and/or experience, as appropriate, in accordance with Trans4m Rail's Resource Planning procedure (T4MR-MPR-PPL-003 Resource Planning). Identification of the environment training needs and provision of training for personnel are detailed in an Environment Training Program.

Appropriate training records shall be kept and maintained in accordance with T4MR-MPR-BUA-018 Records Management. All training identified in the associated training matrix will be delivered according to the training schedule. Training and development needs identified through the performance and development process will be achieved as per time frames nominated in individual plans.

Training assessments and evaluation forms will be used to assess the effectiveness of training. Training evaluation and feedback will be reviewed and used to improve the quality of environmental training delivered on the Project. The training matrix and schedule will be completely reviewed at least annually or prior to the commencement of major new tasks.

8.5.1 Environmental induction

All personnel (including subcontractors) are required to attend a compulsory site induction that includes an environmental component prior to commencement of works on site. This is done to make all personnel involved in the Project aware of the requirements of the CEMP, the CoA and the REMMs. The Trans4m Rail Environment Manager (or delegate) will prepare the environmental component of the site inductions.

Short-term visitors to site undertaking inspections / entering the site (such as regulators) will be required to undertake a visitor's induction and be accompanied by inducted personnel at all times. Temporary visitors to site, for purposes such as deliveries, will be required to be accompanied by inducted personnel at all times.

The environmental component of the induction must cover applicable elements of the CEMP and will include as a minimum:

- Relevant details of the CEMP including policies, purpose and objectives
- Requirements of due diligence and duty of care including GMRs
- Conditions of environmental licences, permits and approvals
- Potential environmental emergencies on site and the emergency response procedures
- Approved working hours, including out-of-hours work processes
- Reporting and notification requirements for pollution and other environmental incidents
- High-risk activities and associated environmental safeguards
- Working in or near environmentally sensitive areas
- Specific environmental management requirements and responsibilities
- Mitigation measures for the control of environmental issues
- The existence of AMS for high-risk activities
- Information relating to the location of environmental constraints
- Key environmental issues.

Inductions will also include information about the community Trans4m Rail are working in, residents and key stakeholders and location-specific sensitivities, behavioural expectations, what to do when approached by a member of the public or media and an outline of our responsibilities and Project obligations relating to the community.

8.5.2 Toolbox Talks, Training and Awareness

Weekly toolbox talks will be one method of raising awareness and educating personnel on issues related to construction including environmental issues. The toolbox talks are used to ensure environmental awareness continues throughout construction.

Toolbox talks will cover a broad array of topics (incl. environmental) relevant to the project program, incidents, observations, emerging trends and risk profile. They will address topical issues, a review of project and corporate wide incidents, lessons learned and include details of ECMs for relevant personnel and will be tailored to specific environmental issues relevant to upcoming works.

Toolbox talk attendance is mandatory and attendees of toolbox talks are required to sign an attendance form, with the records maintained.

As part of Trans4m Rail's commitment to positive community outcomes and stakeholder engagement, Project-specific community awareness training will also be carried out for all construction personnel. Where appropriate, this training will include information to increase awareness of cultural sensitivities and outline approaches to working with people from culturally and linguistically diverse backgrounds. The training will also encourage the workforce to 'tread lightly' while working in the area, acknowledging that we are guests in the community.

Targeted environmental training will be provided to all Supervisory personnel (e.g. Construction Manager, General Superintendent, Superintendent(s) and Site Foreman(s)) and those Project personnel undertaking high environmental risk activities or works specific to an environmental aspect, including:

- Erosion and sediment control;
- POEO due diligence legal training;
- ISCA IS tool training;
- Training in environmental monitoring including noise, vibration and water quality monitoring.

8.5.3 Daily pre-start meetings

The pre-start meeting is an activity conducted prior to the commencement of shift and is used to inform the workforce of the day's activities, safe work practices, environmental protection practices, work area restrictions, activities that may affect the works, coordination issues with other trades and teams, hazards and other information that may be relevant to the day's work.

The environmental component of pre-starts will be determined by relevant foreman and Environmental Coordinators and will include any environmental issues that are potentially relevant to the day's activities. All attendees will be required to sign on to the pre-start and acknowledge their understanding of the issues explained.

8.6 Hold Points

Hold Points will be implemented on this Project for the purpose of minimising the likelihood of an incident when undertaking specific construction activities that have a greater environmental risk. A Hold Point request will be required for such activities listed in Table 15 and Table 16.

Table 15: (SSI 7474) CoA's Hold Points

CONDITION	REPORT/NOTIFICATION	TIMING	PURPOSE
PART A- ADMINISTRATIVE			
A17	Site Establishment Management Plan	One month before the establishment of any construction ancillary facility.	Approval
A24 / A25	Approval of Environmental Representative	One month prior to the commencement of works.	Approval
A35	Approval of independent auditors	Prior to the commencement of an Independent Audit.	Approval
PART B – COMMUNICATION INFORMATION AND REPORTING			
B1/B3	Communication Strategy	No later than one month before the commencement of any works.	Approval
PART C – CONSTRUCTION ENVIRONMENTAL MANAGEMENT			
C1/C3	CEMP	One month prior to commencement of construction.	Approval
0/C6/C7	CEMP sub-plans	One month prior to commencement of construction.	Approval
C14/C17/C18	Construction Monitoring programs	One month prior to commencement of construction.	Approval
PART E- KEY ISSUES			
Noise and Vibration			
E8	Out of Hours Works Protocol	Prior to commencement of out of hours works not subject to an EPL.	Approval
Traffic, Transport and Access			
E39	Road Dilapidation Report	Within one month of completion of the survey and at least two weeks before the road is used.	Information
Contamination			

E83/E84	Site Audit Statement and Site Audit report	One month before the commencement of operation	Information

Table 16: Hold Points

HOLD POINT	RELEASING AUTHORITY	RECORD
If the CIZ is to be amended after it has been approved, the amended CIZ must be submitted to the ER and ARTC for approval and will constitute a Hold Point.	ARTC	Consistency Assessment (signed and approved by the ER and relevant ARTC Representative)
A clearing permit is required prior to any clearing of native vegetation, including GPS locations of extent of Clearing applicable to Permit.	Trans4m Rail Environment Manager	*N2NS Clearing Permit* (signed and approved by the Trans4m Rail Environment Manager (or delegate))
Develop a site Environmental Control Map highlighting sensitive areas and clearly identifying construction boundaries and No-Go Zones	Trans4m Rail Environment Manager	*Site specific ECM* (signed and approved by the Trans4m Rail Environment Manager (or delegate))
Ground disturbing activities cannot commence/ recommence until an Erosion and Sediment Control Plan (ESCP) is developed/ reviewed and implemented.	Trans4m Rail Environment Manager	*N2NS ESC Inspection Checklist* (signed and approved by the Trans4m Rail Environment Manager (or delegate))
Permit to Discharge is required Prior to any active water discharge from the site, a to confirm water is suitable for discharge.	Trans4m Rail Environment Manager	*N2NS Discharge Permit* (signed and approved by the Trans4m Rail Environment Manager (or delegate))
Prior to water reuse on the site, contact the Environment Manager to confirm water quality criteria has been met.	Trans4m Rail Environment Manager	*N2NS Water Reuse Permit*

The relevant Trans4m Rail will meet the requirements of the relevant Hold Points and submit this prior to works commencing. The works will not commence until the Hold Point has been approved or released by the releasing authority. All hold points submitted and released will be recorded on the site's Environmental Hold Points Register.

8.7 Environmental Management Measures

This section outlines the controls that will be implemented to manage environmental aspects during the construction of the Project. For the key potential environmental issues, Sub-plans and Monitoring Programs have been prepared to support the Project's CEMP. These documents have been prepared in accordance with the requirements of the EPBC Act Approval, the CoA, RMM and other environment assessment documentation. The relevant environmental management documents for each environmental aspect is outlined in the sections below.

8.7.1 Traffic, Transport and Access

A Traffic and Transport and Access Management sub-Plan (TTAMP) has been developed to manage the traffic, transport and access risks on this Project. This document is developed in accordance with CoA C4(a), C8 and RMMs C2.1, C2.2, C2.3, C2.4 and C2.5.

8.7.2 Soil and Water Quality

A Soil and Water Quality Management sub-Plan (SWMP) and the Water Quality Erosion and Sediment ECM have been developed to manage the soil and water quality risks on this Project. These documents have been developed in accordance with CoA C4(d), C10 and RMMs C6.1, C6.2, C7.1, C7.2, C8.1, C8.2 and C8.3.

The SWMP includes an Unexpected Finds Procedure for the management of inadvertent finds of contaminated materials or asbestos containing material.

The SWMP and the Water Quality Erosion and Sediment ECM also includes monitoring programs for water Usage and surface water quality, respectively.

8.7.3 Biodiversity

A Biodiversity Management sub-Plan (BMP) and the Biodiversity Flora and Fauna ECM have been developed to manage the biodiversity related risks on this Project. These documents have been developed in accordance with CoA C4(c), C9 and RMMs C3.1, C3.2, C3.3 and C3.4.

This BMP also include an Unexpected Finds Procedure for the inadvertent discovery of the threatened flora or fauna species.

8.7.4 Noise and Vibration

A Noise and Vibration Management sub-Plan (NVMP) and the Noise and Vibration ECM have been developed to manage the noise and vibration related risks on this Project. These documents have been developed in accordance with CoA C4(b) and RMMs C4.1.

This NVMP also includes a Noise and Vibration Monitoring Program to monitoring the noise and vibration impacts for the duration of the project.

8.7.5 Aboriginal and non-Aboriginal Heritage

A Heritage Management sub-Plan (HMP) and the Heritage ECM have been developed to manage the heritage (Aboriginal and non-Aboriginal) related risks on this Project. These documents have been developed in accordance with CoA C4(e) and RMMs C9.1, 10.1 and C10.2.

The HMP includes an Unexpected Finds Procedure for the management of inadvertent finds of items or areas of heritage significance.

8.7.6 Waste and Resource Recovery

A Waste and Resource ECM has been developed to manage the waste and resource recovery related risks on this Project. These documents have been developed in accordance with CoA E87, E88, E89, E90 and C15.1.

A separate Sustainability Management Plan has been prepared in accordance with CoA E79 and RMM C14.1 and C14.2 and will be implemented for the duration of the Project.

8.7.7 Air Quality and Dust

A Soil and Water Quality Management sub-Plan (SWMP) and the Water Quality Erosion and Sediment ECM have been developed to manage the air quality and dust related risks on this Project. These documents have been developed in accordance with CoA C4(d), C10 and RMMs C5.1 and C5.2.

This SWMP also includes an Air Quality Monitoring Program and Depositional Dust Procedure for the monitoring of air quality for the duration of the Project.

8.8 Environmental and Sustainability Inspections

Implementation of a regular program of inspections is an essential part of the success of work activities. The effectiveness of environmental protection measures and capturing sustainability initiatives described in this CEMP and sub-plans will be inspected and assessed on a weekly basis by Trans4m Rail environmental and sustainability staff. The purposes of environmental inspections are to:

- Provide a surveillance tool to ensure that safeguards are being implemented and maintained
- Identify where problems might be occurring
- Facilitate the identification and early resolution of problems
- Identify and quantify where sustainability initiatives are being implemented on-site

- Identify potential sustainability opportunities.

Weekly Environmental and Sustainability checklists will be utilised for these inspections. Any non-conformances or opportunities for improvement will be recorded in Trans4m Rail's Event Tracker system and managed in accordance with Section 10 of this document. The findings of inspections will be discussed at toolbox meetings and concerns raised will be considered by the Environment Team and senior project staff.

Table 17 lists the details of each type of environmental and sustainability inspection to be undertaken on the Project. Further detail is provided in Trans4m Rail's Draft Monthly Environmental Report.

Table 17: Inspection Schedule

ACTIVITY	FREQUENCY	RESPONSIBILITY	RECORD
Site inspection	Daily	Supervisor/s	Site Diary (in PPW)
Environmental and Sustainability	Weekly (and post rainfall events that cause runoff).	Environment Coordinator/s	Environmental and Sustainability checklist
High Risk Activity Inspections	As required	Construction Manager Environment Coordinator/s	High Risk activity inspection checklist
Subcontractor HSEQ Deliverables	Pre-mob and monthly thereafter	Commercial Representative	Subcontract Management Pack
Pre-Clearing Inspections	As required, (Immediately prior to clearing works commencing)	Environment Coordinator/s Site Supervisor	Clearing Permit
Joint ER Inspections	Fortnightly	Environment Manager Site Supervisor ER	ER Inspection Report

8.9 Monitoring Programs

Monitoring will be undertaken for environmental aspects of the Project to confirm the adequacy of implementation of the management measures and will highlight any non-conformances, or potential non-conformances, across the life of the Project. Monitoring of ARTC's environmental reporting metrics will also occur and will be reported monthly to ARTC.

A consolidated summary of monitoring and reporting requirements for the project can be found in Table 18 and 19.

8.9.1 Compliance Monitoring and Reporting

CoA C14 requires that Construction Monitoring Programs must be developed and implemented for the following issues:

- Noise and vibration;
- Water usage;
- Air quality; and
- Physical condition of local roads.

These monitoring programs are contained within the relevant sub-plan. The results of the monitoring programs will be submitted to the Planning Secretary, and relevant regulatory agencies, for information in the form of a Construction Monitoring Report at the frequency identified in the relevant Construction Monitoring Program.

Monitoring programs will be implemented for the duration of construction and for any longer period set out in the monitoring program or specified by the Planning Secretary, whichever is the greater.

All reporting and communication processes and procedures are included in Trans4m Rail's EMS and discussed in detail in Trans4m Rail's CSEMP. Managing and reporting of incidents and non-compliances will be undertaken in accordance with Trans4m Rail's Non-conformance and Corrective Action procedure (T4MR-MPR-SQE-007). The associated procedural steps are summarised as:

- Notify the Supervisor/Environment Manager of incident/non-conformance;
- Determine the event classification;
- Manage the incident/non-conformance in accordance with the requirements of the procedure's Environment Incident Severity Classification, Incident Management Process Map and Manage The Incident requirements;
- Ensure the incident/non-conformance is recorded in PPW;
- Notify appropriate stakeholders and regulators in accordance with the procedure's Incident Notification and Reporting Matrix;
- Undertake relevant incident/non-conformance investigation/s; and
- Periodically review all recent investigations and associated corrective actions to determine any trends.

DPIE's Compliance Reporting Post Approvals Requirements (May 2020) does not require pre-construction, construction or pre-operational compliance reporting, however compliance reporting will be undertaken in accordance with CoA A31 – A34.

Communication to the ER will be from the Environment Manager or Project Manager (or delegate) and ARTC Project Environmental Advisor will be on all shared communication.

Incident and non-compliance

Table 18 outlines Trans4m Rail's compliance monitoring and reporting programs.

Table 18: Compliance Monitoring and Reporting requirements

ASPECT	REQUIREMENT	SCHEDULE
MONITORING		
Soil and Water (CoA C14(b))	Active discharge water will be monitored to ensure discharge meets discharge criteria.	▸ Prior to discharge. ▸ At locations specified in the Construction Soil and Water Management Plan. ▸ All dewatering records managed via an internal Permit to Discharge on PPW. ▸ Water use records (incl. by type of water) managed in Resource Use feature of Project PPW.
Noise and vibration (CoA C14(a)	Monitoring of noise and vibration generating activities and comparison against CSSI predicted performance.	▸ At times and locations specified in the Construction Noise and Vibration Management Plan (CNVMP). ▸ Where ground-borne noise and vibration generating activities are identified to occur within the safe working buffer distances outlined in Section 12.2 of the SPIR. ▸ Noise monitoring in the community will be undertaken to verify the noise level contribution from groundborne noise generating activities. ▸ Vibration monitoring will be undertaken at the potentially most affected receptors identified in the EIS from the commencement of vibration generating activities to confirm that the vibration levels at the nearest sensitive receptor

ASPECT	REQUIREMENT	SCHEDULE
		are compliant with the criteria outlined in the EIS. ▸ Vibration monitors will be installed at potentially affected sensitive heritage receivers (e.g. Moree Rail Station). ▸ All noise & vibration monitoring records managed in the noise & vibration monitoring feature of PPW.
Air quality (CoA C14(c))	Monitoring dust generating activities.	▸ Daily and weekly site visual inspections. ▸ Daily weather monitoring. ▸ Plant/equipment inspections prior to use. ▸ On-going aerosol dust monitoring during dust generating activities. ▸ At locations and events to be specified in the Construction Noise and Vibration Management Plan. ▸ All air emissions monitoring records managed in the air emission monitoring feature of PPW.
Biodiversity	Compliance with Biodiversity sub-plan	▸ Inspection of the operation of biodiversity management works installed on the project. ▸ At least weekly during normal construction hours. ▸ Prior to any site closure of greater than 24 hours. ▸ Biodiversity inspection records managed in the Inspections feature of Event Tracker.
Heritage	Monitoring of construction activities to mitigate / manage impacts on heritage structures and archaeological sites.	▸ Weekly inspections and monitoring of construction activities to ensure compliance with the requirements of the Construction Heritage Management Plan. ▸ The Weekly Environmental Inspection Checklist will be used to maintain compliance and effectiveness of controls. ▸ Vibration monitoring of sensitive heritage structures. ▸ Heritage inspection records managed in the Inspections feature of Event Tracker ▸ Vibration monitoring records managed in noise & vibration monitoring in PPW.
Physical condition of local roads (CoA C14(d))	Monitoring the impact of construction vehicles on the condition of local roads utilised during the construction phase of the CSSI.	▸ Dilapidation inspection(s) undertaken prior to the commencement of construction activities. ▸ General road condition observations documented in site daily dairies by the Site Supervisor. ▸ Regular inspection(s) of road condition shall be undertaken by the Environment Coordinator(s) / Safety Representative(s) and Site Supervisor(s) using the Weekly Environmental Management Inspection

ASPECT	REQUIREMENT	SCHEDULE
		Checklist and uploaded to Project Pack Web. ▸ Monthly reporting to ARTC on traffic, transport and access will be recorded through Project Monthly Reports.
Environmental Complaints	Monitoring of the number and types of complaints and compliance with the Community and Stakeholder Engagement Management Plan.	▸ Monthly. ▸ Environmental complaints verified as a substantiated breach, exceedance or other non-conformance with a requirement, approval, CoA etc is registered as an incident and managed in Event Tracker. ▸ Unsubstantiated complaints managed as a diary entry in PPW. ▸ Any other complaint, record or conversation or interaction with public or stakeholder managed as a diary entry in PPW.
Approvals and licences register status	As specified in Section 6.4.	▸ Monthly managed in the Approvals and Licences Register of PPW.
REPORTING		
Audit reports	Trans4M Rail EMS audits to be undertaken by external auditor. Project audits to be undertaken by the John Holland Regional Environmental Manager.	▸ Six monthly and managed in Event Tracker.
Compliance tracking report	Identifies progress and evidence of compliance against each compliance requirement.	▸ Within 5 Business Days of each Calendar Quarter Date. ▸ Compliance tracking against Contract and Conditions of Approval for licences, approvals and permits managed via the Obligations Register feature of PPW.
Compliance reporting	Provision of details of any review of, and minor amendments made to, the CEMP resulting from construction carried out during the reporting period.	▸ Every 26 weeks following commencement of construction. ▸ Compliance tracking against Contract and Conditions of Approval for licences, approvals and permits managed via the Obligations Register feature of PPW.
Incident reports	▸ Notification to Trans4m Rail Environment Manager of all Environment incidents ▸ Incident notification to ARTC in writing on IREnvironmentCompliance@ARTC.com.au. ▸ Reports to ARTC and DPIE, including final information on Action Required Target, Completion Date, Person Responsible, Risk Level and Closeout information / Date.	▸ Immediately after becoming aware of the incident ▸ Immediately after Trans4m Rail Environment Manager becomes aware of an incident ▸ Within 30 days of the date on which the incident occurred ▸ All incident reports, investigations and internal notifications managed in Event Tracker.

8.9.2 Other Monitoring and Reporting

In addition to the CoA monitoring requirements, Trans4m Rail will undertake monitoring and reporting for contractual and internal management obligations. Information relating to the N2NS objectives and targets (see Section 8.4.2) shall be aggregated in accordance with T4MR-MPR-SQE-009 - Performance Statistics - Safety, Quality, Environment for inclusion in the Group Environment Dashboard (see Section 8.1) that is provided monthly to Executive Management, the HSEQ Systems and Compliance team and the Region HSEQS teams.

Table 189 Trans4m Rail's other monitoring and reporting programs on the Project.

OTHER MONITORING AND REPORTING REQUIREMENTS	REQUIREMENT	SCHEDULE
MONITORING		
Resource usage	Consumption data for energy, water, etc. used on the project. Compare actual consumption versus consumption predicted in the Sustainability Management Plan.	▸ Monthly.
Concrete and Steel	Consumption data for concrete, steel, etc. used on the project. Compare actual consumption versus consumption predicted in the Sustainability Management Plan.	▸ Monthly. ▸ Data managed in Resource Use feature of Project Pack Web (PPW).
Waste	Volumes of waste reused, recycled or recovered. Exported waste disposal location/s Regulated waste as specified under Schedule 1 of the *Protection of Environment (Waste) Regulation 2014*	▸ Monthly. ▸ Data managed in Waste & Recycling feature of PPW.
REPORTING		
Site inspection reports	Environmental inspection report Submitted to the Trans4m Rail Project Director, Environment Manager, Construction Manager and Supervisor.	▸ Weekly Inspection Records managed in Event Tracker. ▸ Daily environmental observations are made in the Daily Diary in PPW (if an environmental observation is made that requires documenting).
Management reports	Progress reports including non-conformances, issues and corrective actions submitted to the Trans4m Rail Project Director.	▸ Monthly and managed in the Document Management System (DMS).
Environmental Return	Report against environmental metrics contained within Appendix E in Section D of the RFT and in the format provided in Section 7 of ARTC's Construction Monthly Progress Report.	▸ Monthly and managed in the DMS.

8.10 Environmental Auditing

The purpose of auditing is to assess compliance with the CEMP and associated management plans, CoA's and any relevant legal and other requirements (e.g. licences, permits, regulations, N2NS contract documentation).

Audit findings will be recorded for action and close out. The action records will include details on the source of the action (e.g. audit, inspection or other), the action required, target close out date, actual close out date and the person responsible for the action item.

8.10.1 Internal Audits

Trans4m Rail will conduct internal HSE audits of the Project at least every six months (or more frequently if project risk requires) to provide information on whether the EMS and CEMP:

- Conforms to Trans4m Rail's own requirements for its EMS;
- Conforms to the requirements of the International Standard; and
- Is effectively implemented and maintained.

In accordance with Trans4m Rail's Monitoring and Review Procedure (T4MR-MPR-SQE-002), Trans4m Rail will establish, implement and maintain an internal audit programme for the Project, including the frequency, methods, responsibilities, planning requirements and reporting of its' internal audits. When establishing the internal audit programme, Trans4m Rail shall take into consideration the environmental importance of the processes concerned, changes affecting the Project and the results of previous audits.

8.10.2 Independent Audits

Independent Audits will be carried out in accordance with DPIE's Independent Audit Post Approval Requirements (May 2020). ARTC will coordinate audits of this nature. Trans4m Rail will fulfil all requests from ARTC and others as they relate to completion of audits. Trans4m Rail will also provide information in the specified form and format as requested by the auditors and/or ARTC.

DPIE's Compliance Reporting Post Approvals Requirements (May 2020) includes a minor increase in the frequency of independent auditing. The revised independent audit frequency will ensure environmental performance and regulatory compliance is maintained

8.11 Environmental Management Procedures, Forms and Other Documents

The Project's EMS procedures, project specific procedures, forms and other documents provide instructions and records related to both environmental and non-environmental activities throughout the Project.

Procedures and forms used will be developed and implemented by Trans4m Rail. Records will be held on site by Trans4m Rail in electronic / hard copy form. Any relevant procedures or forms have been appended to the applicable sub-Plan.

The Trans4m Rail Environment Manager is responsible for maintaining all environmental management documents and records as current at the point of use. Types of documents and records will include:

- All monitoring, inspection and compliance reports/records
- Correspondence with public authorities
- Induction and training records
- Reports on environmental incidents, other environmental non-conformances and follow-up action
- Minutes of CEMP and construction environmental management system review meetings and evidence of any action taken
- CEMP and sub-plans
- ECMs
- Environmental audit reports
- All environmental procedures, plans, strategies, protocols and programs
- Records and disposal dockets for all was which will be classified in accordance with the EPA's Waste Classification Guidelines (CoA E90).

All records and documents associated with the project required by legislative, approval and permit and contract requirements will be retained by Trans4m Rail for the periods specified.

Only the Trans4m Rail Environment Manager, or delegate, has the authority to change any of the environmental management documentation.

Management of documentation is discussed further below.

8.11.1 Documentation

Document Control will be undertaken in accordance with Trans4m Rail's Project Documentation Control Procedure (T4MR-MPR-QUA-005).

The Trans4m Rail EMS includes:

- Documented information required by the ISO 14000 series of standards
- Documented information determined by Trans4m Rail as being necessary for the effectiveness of the EMS.

When creating and updating documented information, the Project will ensure appropriate:

- Identification and description (e.g. a title, date, author, or reference number)
- Format (e.g. language, software version, graphics) and media (e.g. paper, electronic)

- Review and approval for suitability and adequacy.

Documented information required by the EMS and by the Standard (including reports and records) shall be controlled to ensure:

- It is available and suitable for use, where and when it is needed
- It is adequately protected (e.g. from loss of confidentiality, improper use, or loss of integrity).

For the control of documented information, the Project shall address the following activities as applicable:

- Distribution, access, retrieval and use
- Storage and preservation, including preservation of legibility
- Control of changes (e.g. version control)
- Retention and disposition.

Documented information of external origin determined by the Project to be necessary for the planning and operation of the EMS shall be identified as appropriate and controlled.

9 Communication and Complaints Management

9.1 Communication

Trans4m Rail is committed to ensuring effective consultation is undertaken on a regular basis at all levels of the Project. A high level of communication is an important factor in the successful and correct delivery of environmental outcomes on the project and it will ensure environmental performance is continuously communicated, understood and improved across the Project.

Trans4m Rail's Community and Stakeholder Engagement Management Plan (CSEMP) provides a clear framework for active communication and stakeholder engagement management. The CSEMP is a subordinate document to the Communications Strategy required under CoA B1 / B2 and outlines how Trans4m Rail will meet best practice community and project outcomes by keeping the community and other stakeholders informed, minimising potential impacts and responding to the needs and requirements of stakeholders. The CSEMP contains procedures and strategies to manage community and stakeholder engagement activities as they align to the Project delivery program. To the extent practicable, Trans4m Rail will provide stakeholders open and transparent consultation. In the event of an inconsistency between the CSEMP and the Communications Strategy required under CoA B1 / B2, the latter will prevail to the extent of the inconsistency.

9.2 Internal Communication

Trans4m Rail place a strong focus on internal communications, recognising that clear lines of communication throughout all levels and functions (e.g. management, staff and subcontractors) are key to minimising environmental impacts and achieving continuous improvements in environmental performance.

The Public Liaison Team will act as the main interface between the Project, community and stakeholders. As such, the Public Liaison Team will be proactive in keeping the wider team informed and engaged with regards to the community they are working in.

The environment and sustainability team will meet fortnightly to discuss any issues with environmental management on site, any amendments to plans that might be required or any new/changes to construction activities.

Regular meetings may also be scheduled with the ER and relevant ARTC staff. The purpose of these meetings will be to communicate ongoing environmental performance and to identify any issues to be addressed.

Further internal communications regarding environmental issues and aspects will be through site meetings, toolbox talks, environmental inductions, awareness training, noticeboards, briefings, notifications and alerts and daily pre-start meetings. These will provide an opportunity to communicate environmental performance, advise on any upcoming sensitive environmental matters for future work areas and to receive feedback from on-site personnel.

9.3 External Communication

External communication during construction will be managed and conducted in accordance with the CSEMP as discussed in Section 9.1.

External stakeholders on the project include: ARTC/Inland Rail (the Client), Department of Planning, Industry and Environment; Transport for NSW; Narrabri, Moree Plains and Gwydir Local Governments; local communities; and other relevant third-party agencies, government authorities and organisations.

External communication methods include:

- Site meetings with the Client
- All significant incidents notified to the client and ER/Approving Authority
- Monthly reporting to ARTC
- Meetings and correspondence with interested parties (e.g. Local Governments and DPIE) as necessary
- Discussions with adjoining landowners / neighbours and the community who may be affected by the project
- A Project website will be established in accordance with CoA B11 (see Section 2).

9.4 Project Website

A website providing information in relation to the Project will be established before commencement of works and maintained for the duration of construction, and for a minimum of 12 months following the completion of construction or other timeframe as agreed with the Secretary. The following up-to-date information (excluding confidential, private and commercial information or other documents as agreed to by the Secretary) must be published prior to the relevant works commencing, or in the case of documents prepared in accordance with CoAs C1 and C4 when finalised in accordance with the requirements of this approval, and maintained on the website or dedicated pages. In accordance with CoA B11, the Project Website will contain the following information:

- The current implementation status of the CSSI;
- A copy of the documents listed in CoAs A1, C1 and C4, and any documentation relating to any modifications made to the CSSI or the terms of this approval;
- A copy of the approval in its original form, a current consolidated copy of this approval (that is, including any approved modifications to its terms), and copies of any approval granted by the Minister to a modification of the terms of this approval;
- A copy of each statutory approval, licence or permit required and obtained in relation to the CSSI;
- Where a condition(s) of the CoA requires a document(s) to be prepared before work, construction or operational activity commences, a current copy of the relevant document(s) must be published on the website before the work, construction or operational activity is undertaken;
- A current copy of each document required to be made publicly available under this approval must be published within 14 days of the finalisation or approval of the relevant document, unless an alternate timeframe is prescribed by another CoA.
- The results of any monitoring undertaken as a requirement of the EPL.

9.5 Complaint Management

During construction, any comments, feedback or complaints relating to noise, air quality and other amenity issues will be addressed through the Complaints Management System. The Complaints Management System will include a complaints register within the stakeholder database Consultation Manager. The complaints register will be developed in accordance with AS 4269: Complaints Handling. The information contained within the Complaints Register will be made available to the Secretary upon request.

Attempts will be made to resolve all complaints in accordance with the CSEMP. An initial response to complaints will be provided within 24 hours of a complaint being received. A written response will be drafted for complaints and enquiries that cannot be resolved by the initial or follow up verbal response. The response will be provided to the complainant within 10 days.

Within one working day of receiving a complaint, a written report will be provided to ARTC. This will outline the complaint and action taken to remedy the problem. A final report, which will include proposed measures to prevent reoccurrence, will be submitted to ARTC within five working days.

10 Incidents, Emergencies and Non-Conformity

Environmental incidents will be required to be reported to Inland Rail (Trans4m Rail's Project Manager and Trans4m Rail's Environmental Manager) and managed in accordance with the Inland Rail event management system.

10.1 Incident and Emergency Response Plan

In the event of an environmental, social performance, sustainability heritage or other incident, the Incident and Emergency Response Plan will be implemented. The Incident and Emergency Response Plan will be supported by Trans4m Rail's Event Tracker as discussed in Section 8.1.1. The Incident and Emergency Response Plan will address the requirements of the POEO Act, EPBC Act, CoA, BC Act, ARTC's Project Environmental Incident and Reporting Procedure (5-9020-0000-EEC-PR0001), Trans4m Incident and Event Management procedure (T4MR-MPR-SQE-010) and relevant project approvals or licences.

The Incident and Emergency Response Plan will include:

- Site Emergency Plans and details regarding when the plans will be implemented
- Emergency response and induction procedures
- Incident definition, notification and reporting requirements (as required by indicative CoAs A37 and A38)
- List of key emergency personnel, a list of internal personnel and external agencies names, numbers and specific responsibilities for emergency planning and response.

The Incident and Emergency Response Plan will be kept on the Project EMS and at site offices.

All efforts will be undertaken immediately to avoid and reduce impacts of incidents. However, in the event of an incident, all required action will be taken to resolve it as quickly as possible in accordance with the Incident and Emergency Response Plan.

In the event of an environmental incident, immediately notify the Trans4m Rail's Environment Manager and/or Environment Coordinator.

10.2 External Reporting

Should an environmental event greater than Report Only or Class 3, (as per Appendix F; Trans4mRail Environment Incident Severity Classification Table (T4MR-APP-SQE-010-03)) or potential non-compliance with Environmental Statutory Requirements occur, Trans4m Rail personnel will immediately inform the ARTC Senior Environmental Advisor and provide enough detail to determine if any Authority notification is required (as per CoA requirements and/or any other Statutory Requirements) to ARTC and additionally IREnvironmentCompliance@ARTC.com.au.

If required by any statutory requirement, Trans4m will notify the appropriate Authority as, and within the timeframes, required by the statutory requirement. (e.g. Emergency incidents will be reported to both ARTC and relevant authority concurrently).

The notification must identify the SSI (including the application number and the name of the SSI) and set out the time, date, location and nature of the incident. A description of whether the incident was a result of any actual or potential non-compliance with this approval should be provided within one week of the notification. In addition, a written notification will also be provided to DPIE at compliance@planning.nsw.gov.au within 7 days after Trans4m Rail becomes aware of an incident. This notification will:

- identify the SSI and application number;

- provide details of the incident (date, time, location, a brief description of what occurred and why it is classified as an incident);
- identify how the incident was detected;
- identify when Trans4m Rail became aware of the incident;
- identify any actual or potential non-compliance with CoA;
- describe what immediate steps were taken in relation to the incident;
- identify further action that will be taken in relation to the incident; and
- identify a project contact for further communication regarding the incident.

Within 30 days of the date on which the incident occurred or as otherwise agreed to by the Planning Secretary, Trans4m Rail must provide the Planning Secretary and any relevant public authorities (as determined by the Planning Secretary) with a detailed report on the incident addressing the requirements below and such further reports as may be requested:

- a summary of the incident;
- outcomes of an incident investigation, including identification of the cause of the incident;
- details of the corrective and preventative actions that have been, or will be, implemented to address the incident and prevent recurrence; and
- details of any communication with other stakeholders regarding the incident.

Depending on the location, scale, and nature of the incident, other regulatory authorities may also be notified (i.e. Cwth Department of Agriculture, Water and the Environment, NSW EPA, NSW DPI, Council/s, etc). ARTC and Trans4m Rail's Environment Manager will determine where additional regulatory authorities require notification.

Incident reports will be recorded in the EMS reporting system and contain lessons learnt and proposed measures to prevent the occurrence of a similar incident. Trans4m Rail will provide records of all environmental incidents and regulatory action to ARTC and the ER immediately and in any event within 12 hours of becoming aware of any incident. Environmental Alerts for distribution within the Project may also be raised at the discretion of the Trans4m Rail Environment Manager. The Project Director or delegate will notify the Trans4m Rail parent companies as appropriate, in accordance with the severity and status of the incident.

The crisis communication procedure will be detailed in the Crisis Communication Sub-Plan of the CSEMP.

10.3 Non-Conformance Events

A non-conformance is a failure to comply with a requirement, standard or procedure such as this CEMP or associated documents. Non-conformance and non-compliance can be used interchangeably in terms of Trans4m Rail's procedures and the project's CoA. Environmental non-conformances may be identified through improvement opportunities, regular environmental inspections or monitoring, internal or external audits, complaints, community consultation, observations or through incident management. The ER, ARTC Representative and/or a public authority may also raise a non-conformance or improvement notice. Any member of the Project team may raise a non-conformance or improvement opportunity. Monitoring and review is undertaken in accordance with Trans4m Rails Monitoring Review procedure (T4MR-MPR-SQE-002).

Non-conforming activities may be stopped, if necessary, by the Trans4m Rail Environment Manager, Environmental Coordinators or other project personnel. The works will not commence until a corrective / preventative action has been closed out.

Where non-conformances are identified, they will be recorded on an environmental action list within the Trans4m Rail PPW system that will be issued to the relevant supervisor for action. Actions will be assigned an implementation priority in a collaborative way by the inspection team based on environmental risk. Timeframes will be set to ensure any damage incurred is rectified and any chance of recurrence is eliminated as soon as practicable. Following corrective action, the Trans4m Rail Environment Manager will close out the non-conformance.

CoA C2 and REMM C6.2 specify that the CEMP must develop a procedure for Incident Management. Methods for rectifying any non-conformance identified during environmental auditing, review of conformance or incident management include Trans4m Rail's Non-conformance and Corrective Action procedure (T4MR-MPR-SQE-007) and Incident and Event Management procedure (T4MR-MPR-SQE-010).

Trans4m Rail procedures can be supplied upon request.

11 Sustainability Requirements

11.1 Introduction

Both Trans4m Rail and Inland Rail are firmly committed to ensuring the N2NS project is constructed with high levels of sustainability integrated throughout the project. Trans4m Rail will develop and implement a Construction Sustainability Management Plan (SuMP) that will be compliant with:

- Project Approvals
- Inland Rail Sustainability Implementation Framework (0-0000-900-ESS-00-RP-0001)
- Requirements specified in Schedule 10 (Sustainability) of the RFT
- CoAs E79.

Trans4m Rail will aim to achieve an “Excellent” rating using the Infrastructure Sustainability Council of Australia’s (ISCA) Sustainability Scorecard v1.2.

11.2 Sustainability Integration

Integration of sustainability throughout the project is paramount to ensure targets, objectives and criteria can be met. Trans4m Rail have therefore allocated Sustainability Champions and support leads for the respective Sustainability themes as identified in v1.2 of the ISCA Scorecard. These Champions and support leads are identified in Table 19.

Table 19: Sustainability Objectives Champions

CHAMPION	LEADERSHIP AND AWARENESS	PROTECT AND ENHANCE THE LOCAL ENVIRONMENT AND HERITAGE	OPTIMISE RESOURCE EFFICIENCY AND WASTE MANAGEMENT	SUSTAINABLE PROCUREMENT	PEOPLE	GOVERNANCE
Project Director	P			S	S	P
Commercial Manager	S		S	P	S	S
Construction Manager	S	S	P	S	S	S
Environment Manager	S	P	S	S	S	S
Sustainability Manager	S	S	S	S	S	S
Community and Stakeholder Engagement Manager	S	S			P	S
Health and Safety Manager	S				S	S

P = Primary, S = Support

11.3 Objectives

In order to ensure consistency and hence ease of assessment and verification of Infrastructure Sustainability ratings for the Inland Rail Program, Trans4m Rail reviewed Inland Rail's preliminary sustainability objectives and draft targets as described in the Inland Rail Sustainability Strategy (0-0000-900-ESS-00-RP-0003_4) and have largely adopted these (with minor modifications) for the N2NS. The Operational objective and targets are not included as they obviously are not relevant to the construction stage. Table 20 outlines the Program and proposed Project objectives and indicative project targets which contain slight modifications from the draft IR program targets.

Table 20: Trans4m Rail sustainability objectives and indicative targets

PROGRAM OBJECTIVES	TRANS4M RAIL N2NS DRAFT OBJECTIVES AND INDICATIVE TARGETS
Leadership and Awareness	**Leadership and Awareness** ▸ Achieve an Infrastructure Sustainability (IS) rating of 'Excellent' for IR. ▸ Deliver appropriate training/education to all Trans4m Rail team members. ▸ Regular report on objectives and targets
Protect and enhance the local environment and heritage (European and indigenous)	**Protect and enhance the local environment and heritage (European and indigenous)** ▸ Vegetation clearance is minimised as much as is practicable. ▸ No serious pollution incidents occur during construction and operations. ▸ Heritage items are avoided where possible and proactively managed during construction.
Optimise resource efficiency and waste management	**Optimise resource efficiency and waste management** ▸ Identify and implement opportunities to reduce material use and maximise the use of materials with low embodied environmental impact. ▸ Reduce construct greenhouse gas (GHG) emissions by 15%. ▸ Landfill diversion targets: ✓ 80-100% by volume of spoil ✓ 50-90% by volume of inert and non-hazardous waste ✓ 40-60% by volume of office waste ▸ Water: ✓ Reduce potable water by 10% across IR from the base case ✓ Reuse 50% of wastewater on site.
Sustainable procurement	**Sustainable procurement** ▸ Consider whole of life and environmental, social and economic impacts in tender evaluation criteria. ▸ Implement a sustainability procurement policy. ▸ Undertake engagement activities with supply chain to raise sustainability awareness. ▸ Utilise *ISO 20400:2017 Sustainable Procurement – Guidance* as a framework for Trans4m Rail procurement.
People	**People** ▸ Workforce Management – creating opportunities for the development of skilled local and Indigenous workers. ▸ Local and Indigenous Industry participation by supporting local and Indigenous businesses to provide opportunities to work with Trans4m Rail. ▸ Housing and Accommodation – to utilise local workers for Inland Rail to reduce the need for non-resident workers. Where accommodation is required for the workforce, it will be delivered in ways that avoid adverse social impacts and enhance economic benefits for local communities. ▸ Community health and wellbeing – supporting community wellbeing during the changes that the N2NS project will bring.

PROGRAM OBJECTIVES	TRANS4M RAIL N2NS DRAFT OBJECTIVES AND INDICATIVE TARGETS
	▸ Stakeholder and community engagement – Trans4m Rail will actively engage with stakeholders and the community.
Governance	Governance ▸ Ensure reporting on sustainability objectives is built into standard reporting processes across Trans4m Rail. ▸ Share sustainability lessons learnt with Inland Rail. ▸ Continually seek to improve systems and processes based on lessons learnt.

11.4 Documentation

Trans4m Rail appreciate that a culture of sustainability needs to be created, so that all team members are empowered to achieve sustainability across the project. Trans4m Rail's SuMP will include processes and activities to ensure a Sustainability culture permeates the project. Developing a sustainability education and awareness program will help keep Trans4m Rail challenging business as usual.

12 EMP Review and Revision Process

As discussed in Section 8.11, this CEMP is a 'live' and 'working' document. As required by Trans4m Rail's EMS requirements, the Environment Manager will conduct regular reviews of the CEMP at intervals of not less than six months and ensure that the CEMP is formally reviewed and updated at least annually, or earlier as change requirements dictate. Should the document review process identify any issues or items within the documents that are either redundant or in need of updating, it is the responsibility of Trans4m Rail's Environment Manager to coordinate preparation of the revised documents.

Where any revisions to the management plans, strategies or programs are made, the revised document will be issued to the ER for certification / acceptance of the changes prior to submission to DPIE. Copies must also be provided to IR for information and IR must be copied into all correspondence with the ER.

In accordance with CoA A28 (i); the ER may consider any minor amendments to be made to the CEMP, CEMP Sub-Plans and Construction Monitoring Programs that comprise updating or are of an administrative nature, and are consistent with the terms of this approval and the CEMP, CEMP Sub-plans and Construction Monitoring Programs approved by the Planning Secretary and, if satisfied such amendments is necessary, approve the amendment. This does not include any modifications to the terms of this approval.

12.1 Continuous Improvement

Continuous improvement of this CEMP will be achieved by the ongoing evaluation of environmental management performance against environmental policies, objectives and targets for the purpose of identifying opportunities for improvement.

The continuous improvement process:

- Identifies areas of opportunity for improvement of environmental management and performance;
- Determines the cause or causes of non-conformances and deficiencies;
- Develops and implements a plan of corrective and preventative action to address any non-conformances and deficiencies;
- Verifies the effectiveness of the corrective and preventative actions;
- Documents any changes in procedures resulting from process improvement; and
- Makes comparisons with objectives and targets.

As outlined in Section 8, Tran4M Rail will utilise John Holland Group's Environmental Management System (EMS) for the N2NS Project. The basis for the John Holland EMS (and this CEMP) is the concept of Plan-Do-Check-Act (PDCA). The PDCA model provides an iterative process to achieve continuous improvement. Continuous improvement measures detail in this CEMP have been developed in accordance with John Holland's Monitoring and Review Procedure (T4MR-MPR-SQE-002).

Appendix A Compliance Matrix Tables and Legal Register

EPBC2016/7729 – CONDITIONS OF APPROVAL		
CONDITION REFERENCE	**REQUIREMENTS**	**WHERE ADDRESSED**
PART A CONDITIONS SPECIFIC TO THE ACTION		
C1 (a)	Implement conditions C4 and C9 of Part C, Schedule 2 of the State Infrastructure approval, of where they relate to monitoring, managing, avoiding, mitigating, offsetting, recording or reporting on, impacts to protected matters, with the exception of C9(a)	This CEMP and sub-Plans
1(b)	Ensure that the Weed Management Plan included in the Biodiversity Sub plan required under condition C9 of Part C, Schedule 2 of the State Infrastructure approval, includes appropriate weed control measures to prevent the introduction and/or spread of weeds from construction areas to any retained area of Belsons Panic (*Homopholis belsonii),* Natural Grassland on Basalt and Fine Textured Alluvial Plains of Northern New South Wales and Southern Queensland, Brigalow *(Acacia harpophylla* dominant and co dominant) and Weeping Myall Woodlands ecological communities.	BMP
1(c)	Implement biodiversity conditions E17-E21 and E23-E26 of Part E Schedule 2 of the State Infrastructure approval, where they relate to monitoring, managing, minimising, reducing, avoiding, mitigating, offsetting, recording, or reporting on, impacts to protected matters.	This CEMP and BMP
1(d)	For any aspect of the action, for the period of which the approval has effect, the approval holder must not exceed the maximum impacts to protected matters specified under the State Infrastructure approval.	This CEMP
PART B- STANDARD ADMINISTRATIVE CONDITIONS		
2	The approval holder must notify the Department in writing of the date of commencement of the action within 10 business days after the date of commencement of the action	Section 8.11
4	The approval holder must maintain accurate and complete compliance records.	Section 8.11
5	If the Department makes a request in writing, the approval holder must provide electronic copies of compliance records to the Department within the timeframe specified in the request.	Section 8.11
ANNUAL COMPLIANCE REPORTING		
6	The approval holder must prepare a compliance report for each 12 month period following the date of commencement of the action, or otherwise in accordance with the annual date that has been agreed with in writing by the Minister. The approval holder must: d) Publish each compliance report on the website within 60 business days following the relevant 12 month period; e) Notify the Department by email that a compliance report has been published on the website and provide the weblink for the compliance report within five business days of the date of publication; f) Keep all compliance reports publicly available on the website until this approval expires;	Section 8.9.1
REPORTING NON-COMPLIANCE		
7	The approval holder must notify the Department in writing of any: incident, non-compliance with the conditions of this approval; or non-compliance with the commitments made in any element of the Construction Environmental Management Plan, (required under Part C- State Infrastructure approval) referred to in condition 1. The	Section 10

EPBC2016/7729 – CONDITIONS OF APPROVAL		
CONDITION REFERENCE	**REQUIREMENTS**	**WHERE ADDRESSED**
	notification must be given as soon as practicable, and not later than two business days after becoming aware of the incident or non-compliance. The notification must specify: d) Any condition which is or may be in breach; e) A short description of the incident and/or non-compliance; and f) The location (including co-ordinates), date and time of the incident and/or non-compliance. In the event the exact information cannot be provided, provide the best information available.	
8	The approval holder must provide to the Department the details of any incident or non-compliance with the conditions of this approval or commitments made in any element of the Construction Environmental Management Plan (required under Part C, Schedule 2 of the State Infrastructure approval) referred to in condition 1 as soon as practicable and no later than 10 business days after becoming aware of the incident or non-compliance, specifying: d) Any corrective action or investigation which the approval holder has already taken or intends to take in the immediate future; e) The potential impacts of the incident or non-compliance and; f) The method and timing of any remedial action that will be undertaken by the approval holder.	Section 10

SSI 7474 - CONDITIONS OF APPROVAL		
CONDITION REFERENCE	**DETAILS**	**WHERE ADDRESSED**
A1	The CSSI may only be carried out in accordance with the terms of this approval and generally in accordance with the description of the CSSI in the Inland Rail – Narrabri to North Star Environmental Impact Statement, Volumes 1-7 (prepared by GHD and dated November 2017), the Inland Rail – Narrabri to North Star Submissions Preferred Infrastructure Report (ARTC, dated December 2019) and (updated BDAR, RtS on the SPIR and RFI responses).	CEMP (Sections 3 and 4)
A2	The CSSI must be carried out in accordance with all procedures, commitments, preventative actions, performance criteria and mitigation measures set out in in the documents listed in Condition A1 unless otherwise specified in, or required under, this approval.	CEMP (Section 3.1
A3	In the event of an inconsistency between the documents listed in Condition A1 or any other document required under this approval, and a term of this approval, the term of this approval prevails to the extent of the inconsistency. Note: For the purpose of this condition, there will be an inconsistency between a term of this approval and any document if it is not possible to comply with both the term and the document.	CEMP (Section 3.1)
A4	The Proponent must comply with the written requirements or directions of the Planning Secretary, including in relation to: i) the environmental performance of the CSSI;	This CEMP

SSI 7474 - CONDITIONS OF APPROVAL		
CONDITION REFERENCE	**DETAILS**	**WHERE ADDRESSED**
	j) any document or correspondence under the terms of this approval in relation to the CSSI (including the provision of such documentation or correspondence); k) any independent appointment or dismissal made in relation to the CSSI; l) any notification given to the Planning Secretary under the terms of this approval; m) any audit of the construction or operation of the CSSI; n) the terms of this approval and compliance with the terms of this approval (including anything required to be done under this approval); o) the carrying out of any additional monitoring or mitigation measures; and p) n respect of ongoing monitoring and management obligations, compliance with an updated or revised version of a guideline, protocol, Australian Standard or policy required to be complied with under this approval.	
A5	Where the terms of this approval require a document or monitoring program to be prepared, or a review to be undertaken, in consultation with identified parties, evidence of the consultation undertaken must be submitted to the Planning Secretary in accordance with the Department's Post Approval Guidance: Defining Engagement Terms (DPIE, 2020). The evidence must include: f) documentation of the engagement with the party identified in the condition of approval that has occurred before submitting the document for approval; g) log of the dates of engagement or attempted engagement with the identified party and a summary of the issues raised by them; h) documentation of the follow-up with the identified party where engagement has not occurred to confirm that they do not wish to engage or have not attempted to engage after repeated invitations; i) outline of the issues raised by the identified party and how they have been addressed; and j) a description of the outstanding issues raised by the identified party and the reasons why they have not been addressed.	CEMP (Section 3), sub-Plans, Communication Strategy and CSEMP NOTE: The Communication Strategy as required under CoA B1 and B2 is being prepared by ARTC. The Communication and Stakeholder Engagement Management Plan (CSEMP) is being prepared by Trans4m Rail and aligns with the requirements of ARTC's Communication Strategy.
A6	Any document that must be submitted, or approval that must be obtained, within a timeframe specified in or under the conditions of this approval may be submitted within a later timeframe agreed with the Planning Secretary. This condition does not apply to the immediate written notification required in respect of an incident under Condition A41. The Proponent must provide supporting evidence so that the Secretary can consider the need, environmental impacts and consistency of any request. Note: Inaction and/or expedience will not be supported as justifications for need unless it can be demonstrated that there are beneficial environmental impacts associated with the request.	Noted
A7	References in the terms of this approval to any guideline, protocol, Australian Standard or policy are to such guidelines, protocols, Standards or policies in the form they are in as at the date of this approval.	Noted

SSI 7474 - CONDITIONS OF APPROVAL		
CONDITION REFERENCE	**DETAILS**	**WHERE ADDRESSED**
A8	This approval lapses five (5) years after the date on which it is granted, unless works for the purpose of the CSSI are physically commenced on or before that date.	Noted
A16	Ancillary facilities that are not identified by description and location in the documents listed in Condition A1 can only be established and used in each case if: they are located within or immediately adjacent to the construction boundary; and they are not located next to a sensitive receiver (including where an access road is between the facility and the receiver), unless the sensitive receiver landowner and occupier have given written acceptance to the carrying out of the relevant facility in the proposed location; and they have no impacts on heritage items (including areas of archaeological sensitivity), threatened species, populations or ecological communities beyond the impacts approved under the terms of this approval; and the establishment and use of the facility can be carried out and managed within the performance outcomes set out in the terms of this approval, including in relation to environmental impacts.	SEMP
A17	The Proponent must prepare and submit for approval to the Planning Secretary one (1) month before the establishment of any construction ancillary facility (excluding minor construction ancillary facilities established under Condition A21) a Site Establishment Management Plan. The Plan must be prepared in consultation with the relevant council/s and TfNSW. The Site Establishment Management Plan must detail the management of the establishment of the construction ancillary facilities and must include: a) a description of activities to be undertaken during establishment of the construction ancillary facility (including indicative scheduling and duration of works to be undertaken at the site); b) figures illustrating the proposed operational site layout/s; c) a program for ongoing analysis of the key environmental risks arising from the site establishment activities described in subsection (a) of this condition, including an initial risk assessment undertaken prior to the commencement of site establishment works; d) details of how the site establishment activities described in subsection (b) of this condition will be carried out to: i. meet the performance outcomes stated in the documents listed in Condition A1, and ii. manage the risks identified in the risk analysis undertaken in subsection (d) of this condition; and e) program for monitoring the performance outcomes, including a program for noise monitoring of site establishment activities. Nothing in this condition prevents the Proponent from preparing individual Site Establishment Management Plans for each construction ancillary facility or one Site Establishment Management Plan for all facilities. The approved Site Establishment Management Plan(s) must be implemented. Upon commencement of construction, the Site Establishment Management Plan will cease to have effect and the CEMP required by Condition C1 will apply to the operation of ancillary facilities.	SEMP (Appendix H)

SSI 7474 - CONDITIONS OF APPROVAL		
CONDITION REFERENCE	**DETAILS**	**WHERE ADDRESSED**
A18	The operation of an ancillary facility for construction must not commence until the CEMP required by Condition C1, relevant CEMP Sub-plans required by Condition 0 and relevant Construction Monitoring Programs required by Condition C14 have been approved by the Planning Secretary. This condition does not apply to Condition A21.	CEMP (Section 8.3)
A19	Where possible, ancillary facilities must be accessed via existing public roads and/or the existing rail corridor. Access directly via classified roads should be avoided where access from an existing local road is reasonably available. Where access via existing roads or the rail corridor is not possible, the Proponent may utilise existing private access tracks on private property but only with the written permission of the landowner. The Proponent must consult with each landowner whose property is required for access and agree on the terms and conditions relating to access arrangements. Nothing in this condition prevents the landowner from refusing the Proponent access to and via their land. New construction access tracks on private property must comply with the requirements of Condition A16.	TTAMP and SEMP (Appendix H)
A20	The Proponent must ensure that all roads / tracks that will be used to access construction ancillary facilities are to the standard necessary to provide access as agreed with landowners and the relevant roads authority, including a trafficable surface suitable to accommodate the type of vehicle movements that are anticipated to be associated with the construction of the CSSI.	TTAMP and SEMP (Appendix H)
A21	Facilities including lunch sheds, office sheds, material lay down sites, stockpile areas, areas used to assemble infrastructure, and portable toilet facilities can be established and operated where they satisfy the following criteria: a) are located within the construction boundary; and b) have been assessed by the ER to have – i. low amenity impacts to surrounding residences and businesses, after consideration of matters such as compliance with the Interim Construction Noise Guideline (DECC, 2009), traffic and access impacts, dust and odour impacts, and visual (including light spill) impacts, and ii. low environmental impact with respect to waste management and flooding, and c) no impacts on biodiversity, soil and water, and heritage items beyond those already approved under other terms of this approval.	SEMP (Appendix H)
A22	Boundary screening must be erected around all ancillary facilities that are adjacent to and visible from sensitive receivers for the duration of use of the ancillary facility unless otherwise agreed with the relevant council and affected residents, business operators or landowners.	SEMP (Appendix H)
A23	Boundary screening required under Condition A22 of this approval must minimise visual, noise and air quality impacts on adjacent sensitive receivers.	SEMP (Appendix H)
A28 (d), (e) & (i)	For the duration of the works until 12 months after the completion of construction, the approved ER must: (d)review documents identified in Conditions A11, A17, A31, C1, 0 and C13, and any other documents that are identified by the	CEMP (Section 8.4)

SSI 7474 - CONDITIONS OF APPROVAL		
CONDITION REFERENCE	**DETAILS**	**WHERE ADDRESSED**
	Secretary, to ensure they are consistent with requirements in or under this approval and if so: (i) make a written statement to this effect before submission of such documents to the Planning Secretary (if those documents are required to be approved by the Planning Secretary); or (ii) make a written statement to this effect before the implementation of such documents (if those documents are required to be submitted to the Planning Secretary / Department for information or are not required to be submitted to the Planning Secretary / Department); (e)regularly monitor the implementation of the documents listed in Conditions A11, A17, A31, C1, 0 and C14, to ensure implementation is being carried out in accordance with the document and the terms of this approval; (i)consider any minor amendments to be made to the CEMP, CEMP Sub-plans and Construction Monitoring Programs that comprise updating or are of an administrative nature, and are consistent with the terms of this approval and the CEMP, CEMP Sub-plans and Construction Monitoring Programs approved by the Planning Secretary and, if satisfied such amendment is necessary, approve the amendment. This does not include any modifications to the terms of this approval;	
A31	Compliance Reports of the project must be carried out in accordance with the Compliance Reporting Requirements outlined in the Compliance Reporting Post Approval Requirements (2020).	CEMP (Section 8.9.1)
A32	Compliance Reports must be submitted to the Department in accordance with the timeframes set out in the Compliance Reporting Post Approval Requirements (2020), unless otherwise agreed by the Planning Secretary.	CEMP (Section 8.9.1)
A33	The Applicant must make each Compliance Report publicly available 60 days after submitting it to the Planning Secretary, unless otherwise agreed by the Planning Secretary.	CEMP (Section 8.9.1)
A34	Notwithstanding the requirements of the Compliance Reporting Post Approval Requirements (2020), the Planning Secretary may approve a request for ongoing annual operational compliance reports to be ceased, where it has been demonstrated to the Planning Secretary's satisfaction that an operational compliance report has demonstrated operational compliance.	CEMP (Section 8.9.1)
A41	During construction, DPIE must be notified in writing immediately after the Proponent becomes aware of an incident. The notification must identify the CSSI (including the application number and the name of the CSSI if it has one), and set out the time, date, location and nature of the incident. A description of whether the incident was a result of any actual or potential non-compliance with this approval should be provided within one week of the notification. The requirement to notify DPIE under this condition excludes incidents which are required to be notified to the Office of the National Rail Safety Regulator. Subsequent notification must be given and reports submitted in accordance with the requirements set out in Appendix B – WRITTEN INCIDENT NOTIFICATION AND REPORTING REQUIREMENTS.	CEMP (Section 10.2)
C1	A Construction Environmental Management Plan (CEMP) must be prepared in accordance with the Department's Environmental	This plan.

SSI 7474 - CONDITIONS OF APPROVAL		
CONDITION REFERENCE	**DETAILS**	**WHERE ADDRESSED**
	Management Plan Guideline for Infrastructure Projects (DPIE, 2020) to detail how the performance outcomes, commitments and mitigation measures specified in the documents listed in Condition A1 will be implemented and achieved during all stages of construction.	
C2	The CEMP must provide:	
	a) a description of activities to be undertaken during construction (including the scheduling of construction);	CEMP (Section 4)
	b) details of environmental policies, guidelines and principles to be followed in the construction of the SSI;	CEMP (Sections 3 and 8 and Appendix B)
	c) a program for ongoing analysis of the key environmental risks arising from the activities described in subsection (a) of this condition, including an initial risk assessment undertaken before the commencement of construction of the SSI;	CEMP (Section 7n and 12 and Appendix D)
	d) details of how the activities described in subsection (a) of this condition will be carried out to: iii. meet the performance outcomes stated in the documents listed in Condition A1; and	CEMP (Section 8)
	iv. manage the risks identified in the risk analysis undertaken in subsection (d) of this condition;	CEMP (Section 7 and 8) and Appendix D
	e) an inspection program detailing the activities to be inspected and frequency of inspections;	CEMP (Section 8.8)
	f) a protocol for managing and reporting any: iii. incidents; and iv. non-compliances with this approval or statutory requirements;	CEMP (Section 10 and Appendix F)
	g) procedures for rectifying any non-compliance with this approval identified during compliance auditing, incident management or at any time during construction;	CEMP (Section 10.3)
	h) a list of all the CEMP Sub-plans required in respect of construction, as set out in Condition C4. Where staged construction of the SSI is proposed, the CEMP must also identify which CEMP Sub-plan applies to each of the proposed stages of construction;	CEMP (Sections 6 and 8)
	i) a description of the roles and environmental responsibilities for relevant employees and their relationship with the ER;	CEMP (Section 8.4)
	j) for training and induction for employees, including contractors and sub-contractors, in relation to environmental and compliance obligations under the terms of this approval;	CEMP (Section 8.5)
	k) for periodic review and update of the CEMP and all associated plans and programs; and	CEMP (Section 12)
	l) relevant details from the Site Establishment Management Plan(s).	CEMP (Appendix H)
C3	The CEMP must be endorsed by the ER and then submitted to the Secretary for approval no later than one (1) month before the commencement of construction or where construction is staged, no later than one (1) month before the commencement of that stage.	Appendix A

<table>
<tr><th colspan="3">SSI 7474 - CONDITIONS OF APPROVAL</th></tr>
<tr><th>CONDITION REFERENCE</th><th>DETAILS</th><th>WHERE ADDRESSED</th></tr>
<tr><td>C4</td><td>The following CEMP Sub-plans must be prepared in consultation with the relevant government agencies and relevant councils identified for each CEMP Sub-plan and be consistent with the CEMP referred to in the EIS.
<table>
<tr><th></th><th>REQUIRED CEMP SUB-PLAN</th><th>RELEVANT GOVERNMENT AUTHORITIES TO BE CONSULTED FOR EACH CEMP SUB-PLAN</th></tr>
<tr><td>(a)</td><td>Traffic, Transport and access</td><td>TfNSW and relevant councils</td></tr>
<tr><td>(b)</td><td>Noise and Vibration</td><td>Relevant councils</td></tr>
<tr><td>(c)</td><td>Biodiversity</td><td>EES, DAWE and relevant councils</td></tr>
<tr><td>(d)</td><td>Soil and Water</td><td>Relevant councils, Water Group, and EES</td></tr>
<tr><td>(e)</td><td>Heritage</td><td>DPC Heritage, RAPs and relevant councils</td></tr>
<tr><td>(f)</td><td>Flood Emergency Management</td><td>SES, EES and relevant councils</td></tr>
</table></td><td>CEMP (Section 3) &relevant sub-Plans</td></tr>
<tr><td>C13</td><td>Construction must not commence until the CEMP and all CEMP Sub-plans have been approved by the Secretary. The CEMP and CEMP Sub-plans, as approved by the Secretary, including any minor amendments approved by the ER, must be implemented for the duration of construction. Where the CSSI is being staged, construction of that stage is not to commence until the relevant CEMP and sub-plans have been endorsed by the ER and approved by the Secretary.</td><td>CEMP (Section 1.1)</td></tr>
<tr><td>C14</td><td>The following Construction Monitoring Programs must be prepared in consultation with the relevant government agencies and relevant councils identified for the Construction Monitoring Programs to compare actual performance of construction of the CSSI against performance predicted in the documents specified in Condition A1.
<table>
<tr><th></th><th>REQUIRED CONSTRUCTION MONITORING PROGRAMS</th><th>RELEVANT GOVERNMENT AUTHORITIES TO BE CONSULTED FOR EACH CONSTRUCTION MONITORING PROGRAM</th></tr>
<tr><td>(a)</td><td>Noise and vibration</td><td>Nil</td></tr>
<tr><td>(b)</td><td>Water usage</td><td>Water Group</td></tr>
<tr><td>(c)</td><td>Air Quality</td><td>Nil</td></tr>
<tr><td>(d)</td><td>Physical condition of local roads</td><td>Relevant councils</td></tr>
</table></td><td>CEMP (Section 6.9.3) & relevant sub-Plans
Noise and Vibration Monitoring Program (Appendix E of the Construction Noise and Vibration Management sub-Plan)

Water Usage Monitoring Program (Section 7.2 of the Construction Soil and Water Management sub-Plan)

Air Quality Monitoring Program (Appendix D of Construction Soil and Water Management sub-Plan)

Local Road Condition Monitoring Program (Section 11 of the</td></tr>
</table>

SSI 7474 - CONDITIONS OF APPROVAL		
CONDITION REFERENCE	**DETAILS**	**WHERE ADDRESSED**
		Construction Traffic, Transport and Access Management sub-Plan)
C18	Construction must not commence until the Planning Secretary has approved all of the required Construction Monitoring Programs, and all relevant baseline data for the specific construction activity has been collected.	CEMP (Section 8.9)
C19	The Construction Monitoring Programs, as approved by the Planning Secretary including any minor amendments approved by the ER must be implemented for the duration of construction and for any longer period set out in the monitoring program or specified by the Planning Secretary, whichever is the greater.	CEMP (Section 8.9) & relevant sub-plans
C20	The results of the Construction Monitoring Programs must be submitted to the Planning Secretary, and relevant regulatory agencies, for information in the form of a Construction Monitoring Report at the frequency identified in the relevant Construction Monitoring Program. Note: Where a relevant CEMP Sub-plan exists, the relevant Construction Monitoring Program may be incorporated into that CEMP Sub-plan.	CEMP (Section 8.9) & relevant sub-plans
E87	Waste generated during construction and operation is to be dealt with in accordance with the following priorities: (a) waste generation is to be avoided and where avoidance is not reasonably practicable, waste generation is to be reduced; (b) where avoiding or reducing waste is not possible, waste is to be re-used, recycled, or recovered in accordance with the requirements of the Protection of the Environment Operations Act 1997 and its regulations; and (c) where re-using, recycling or recovering waste is not possible, waste is to be treated or disposed of at a waste management facility or premise lawfully permitted to accept the materials or in accordance with a Resource Recovery Exemption or Order issued under the Protection of the Environment Operations (Waste) Regulation 2014, or to any other place that can lawfully accept such waste.	CEMP (Appendix G)
E88	The importation of waste and the storage, treatment, process, reprocessing or disposal of such waste must comply with the conditions of the current EPL for the CSSI, or be done in accordance with a Resource Recovery Exemption or Order issued under the Protection of the Environment Operations (Waste) Regulation 2014, as the case may be.	CEMP (Appendix G)
E89	Waste must only be exported to a site licensed by the EPA for the storage, treatment, processing, reprocessing or disposal of the subject waste, or in accordance with a Resource Recovery Exemption or Order issued under the Protection of the Environment Operations (Waste) Regulation 2014, or to any other place that can lawfully accept such waste. *Note: Notice must be given to the relevant site/s as soon as possible, and no more than 14 days before the proposed waste disposal.*	CEMP (Appendix G)
E90	All waste generated during construction and operation must be classified in accordance with the EPA's Waste Classification Guidelines, with appropriate records and disposal dockets retained for audit purposes.	CEMP (Appendix G)

REVISED MITIGATION MEASURES		
CONDITION REFERENCE	**DETAILS**	**WHERE ADDRESSED**
C1.1	Construction of the preferred infrastructure would be undertaken in accordance with the approved CEMP.	CEMP (Section 3 and 8.3)
C2.1	A traffic, transport and access management sub-plan would be prepared and implemented as part of the CEMP. It would include measures to minimise the potential for impacts on the community and the operation of the surrounding road and transport environment. It would address all the aspects of construction relating to the movement of vehicles, pedestrians and cyclists, and the operation of the surrounding road network, including: construction site traffic control, parking and access arrangements construction material, equipment and spoil haulage, including arrangements for oversize vehicles road pavement and access road condition management management of impacts to public transport, including school buses, pedestrian and cyclist access, and safety management of impacts to access for surrounding residents and business owners/operators arrangements for level crossings during construction road and driver safety. The traffic, transport and access management sub-plan would be developed in consultation with (where relevant) Narrabri Shire Council, Moree Plains Shire Council, Gwydir Shire Council, Roads and Maritime Services, and public transport/bus operators.	Construction Traffic, Transport and Access Management sub-Plan
C3.1	A biodiversity management sub-plan would be prepared and implemented as part of the CEMP. It would include measures to minimise the potential for biodiversity impacts. The sub-plan would address, as outlined below: a pre-clearing survey and tree-felling procedure procedures to manage micro-bats avoiding impacts on surrounding vegetation (item C3.2) weed management (item C3.3) dewatering of standing pools in watercourses measure to minimise impacts on aquatic ecology	Construction Biodiversity Management sub-Plan
C4.1	The Inland Rail NSW Construction Noise and Vibration Management Framework (provided in Appendix J) would be implemented, and the preferred infrastructure proposal would be constructed, with the aim of achieving the construction noise management levels and vibration criteria identified by the noise and vibration assessment. All feasible and reasonable noise and vibration mitigation measures would be implemented. Any activities that could exceed the construction noise management levels and vibration criteria would be identified and managed in accordance with the Inland Rail NSW Construction Noise and Vibration Management Framework and the CEMP. Notification of impacts would be undertaken in accordance with the communication management plan for the preferred infrastructure proposal.	Construction Noise and Vibration sub-Plan

C5.1	An air quality 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, and would address all aspects of construction, including: spoil handling machinery operating procedures soil treatments stockpile management haulage dust suppression monitoring.	Construction Soil and Water Management sub-Plan
C6.1	A soil and water management sub-plan would be prepared as part of the CEMP. It 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 (for example, through mixing of gypsum) surface water and erosion control practices that take into account site specific soil types (for example, dispersive soils).	Construction Soil and Water Management sub-Plan
C6.2	A contamination and hazardous materials sub-plan would be prepared and implemented as part of the CEMP. It would include: measures to minimise the potential for contamination impacts on the local community, workers, and environment procedures for incident management and managing unexpected contamination finds (an unexpected finds protocol).	Construction Soil and Water Management sub-Plan
D1.1	A CEMP would be prepared to detail the approach to environmental management during construction, as described in section 27.2 of the EIS, and in accordance with the conditions of approval.	This Plan
D8.7	An unexpected finds procedure would be developed and included in the CEMP to provide a consistent method for managing any unexpected Aboriginal heritage items discovered during construction, including potential heritage items or objects, and human skeletal remains.	Construction Heritage Management sub-Plan
D9.5	An unexpected finds procedure would be developed and included in the CEMP to provide a consistent method for managing any unexpected heritage items or human skeletal remains discovered during construction.	Construction Heritage Management sub-Plan

ENVIRONMENTAL PERFORMANCE OUTCOMES			
KEY ISSUE (AS LISTED IN THE SEARS)	**SEARS DESIRED PERFORMANCE OUTCOMES**	**PROPOSAL SPECIFIC CONSTRUCTION ENVIRONMENTAL PERFORMANCE OUTCOMES**	**WHERE ADDRESSED**
5 Air Quality	The project is designed, constructed and operated in a manner that minimises air quality impacts (including nuisance dust and odour) to minimise risks to human health	▸ The proposal is constructed and operated in accordance with the requirements of the POEO Act and relevant	Construction Soil and Water Management sub-Plan Air Quality Monitoring Program (Appendix D of Construction Soil and

ENVIRONMENTAL PERFORMANCE OUTCOMES			
KEY ISSUE (AS LISTED IN THE SEARS)	**SEARS DESIRED PERFORMANCE OUTCOMES**	**PROPOSAL SPECIFIC CONSTRUCTION ENVIRONMENTAL PERFORMANCE OUTCOMES**	**WHERE ADDRESSED**
	and the environment to the greatest extent practicable.	environmental protection licences. ▸ Dust generated during construction will not exceed the relevant criteria in the National Environment Protection (Ambient Air Quality) Measure and the Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales (Department of Environment and Conservation, 2005).	Water Management sub-Plan)
6 Biodiversity	Offsets and/or supplementary measures are assured which are equivalent to any remaining impacts of project construction and operation.	▸ Potential impacts on biodiversity are managed in accordance with relevant legislation, including the EP&A Act, TSC Act, FM Act, EPBC Act, and the Noxious Weeds Act 1993. ▸ The biodiversity outcome is consistent with the Framework for Biodiversity Assessment (OEH, 2014b). ▸ Offsets are provided in accordance with the NSW Biodiversity Offsets Policy for Major Projects (OEH, 2014c).	Biodiversity Management sub-Plan
8 Flooding	The project minimises adverse impacts on existing flooding characteristics. Construction and operation of the project avoids or minimises the risk of, and adverse impacts from, infrastructure flooding, flooding hazards, or dam failure.	▸ Construction is undertaken in a manner that minimises the potential for adverse flooding impacts, through staging of works and the implementation of mitigation measures. ▸ The proposal makes a positive contribution to local flooding characteristics by replacing existing drainage infrastructure. ▸ Structures such as spoil mounds are designed and located such that flows are not significantly impeded. ▸ The proposal reduces the length of overtopping of the existing rail corridor. ▸ The proposal reduces or does not significantly increase the area subject to flooding.	Flood Emergency Management sub-Plan

ENVIRONMENTAL PERFORMANCE OUTCOMES			
KEY ISSUE (AS LISTED IN THE SEARS)	**SEARS DESIRED PERFORMANCE OUTCOMES**	**PROPOSAL SPECIFIC CONSTRUCTION ENVIRONMENTAL PERFORMANCE OUTCOMES**	**WHERE ADDRESSED**
9 Health and Safety	The project avoids, to the greatest extent possible, risk to public safety.	▸ All dangerous goods are stored, handled and transported in accordance with relevant regulatory requirements and Australian Standards.	Soil and Water Management sub-Plan
10 Heritage	The design, construction and operation of the project facilitates, to the greatest extent possible, the long-term protection, conservation and management of the heritage significance of items of environmental heritage and Aboriginal objects and places. The design, construction and operation of the project avoids or minimises impacts, to the greatest extent possible, on the heritage significance of environmental heritage and Aboriginal objects and places.	▸ Impacts on heritage are managed in accordance with relevant legislation, including the EP&A Act, the Heritage Act 1977, and relevant guidelines. ▸ The potential impacts identified are mitigated by photographic/archival recording.	Heritage Management sub-Plan
11 Noise and vibration – amenity	Construction noise and vibration (including airborne noise, ground-borne noise and blasting) are effectively managed to minimise adverse impacts on acoustic amenity.	The proposal minimises impacts to the local community by: ▸ controlling noise and vibration at the source ▸ controlling noise and vibration on the source to receiver transmission path ▸ controlling noise and vibration at the receiver ▸ implementing practicable and reasonable measures to minimise the noise and vibration impacts of construction activities on local sensitive receivers.	Noise and Vibration Management sub-Plan
12 Noise and vibration – structural	Construction noise and vibration (including airborne noise, ground-borne noise and blasting) are effectively managed to minimise adverse impacts on the structural integrity of buildings, items including Aboriginal places and environmental heritage, and nearby road infrastructure.	▸ The proposal minimises impacts to structures by: ▸ controlling vibration at the source ▸ controlling vibration on the source to receiver transmission path ▸ implementing practicable and reasonable measures to minimise vibration impacts of construction activities on structures.	Noise and Vibration Management sub-Plan and Heritage Management sub-Plan
15 Soils	The environmental values of land, including soils, subsoils and landforms, are protected. Risks arising from the disturbance and excavation of	▸ Site-specific soil, subsoil and landform characteristics are taken into consideration during	Soil and Water Management sub-Plan

ENVIRONMENTAL PERFORMANCE OUTCOMES			
KEY ISSUE (AS LISTED IN THE SEARS)	**SEARS DESIRED PERFORMANCE OUTCOMES**	**PROPOSAL SPECIFIC CONSTRUCTION ENVIRONMENTAL PERFORMANCE OUTCOMES**	**WHERE ADDRESSED**
	land and disposal of soil are minimised, including disturbance to acid sulfate soils and site contamination.	detailed design and construction. ▸ Any contamination is managed in accordance with relevant regulatory requirements. ▸ Any soil waste is assessed, classified, managed and disposed of in accordance with the Waste Classification Guidelines (EPA, 2014).	
17 Traffic, transport and access	Network connectivity, safety and efficiency of the transport system in the vicinity of the project are managed to minimise impacts. The safety of transport system customers is maintained. Impacts on network capacity and the level of service are effectively managed. Works are compatible with existing infrastructure and future transport corridors.	▸ The proposal provides for more efficient and productive freight rail operations. ▸ Impacts to traffic and transport are minimised. ▸ Motorist, pedestrian and cyclist safety will be maintained or improved. ▸ The proposal contributes to one of the desired outcomes of Inland Rail – to have reduced truck volumes on the road network, improving road safety. ▸ Safe access to properties is maintained. ▸ The proposal is integrated with existing and future local and regional transport infrastructure and planning strategies	Construction Traffic, Transport and Access Management sub-Plan
18 Visual amenity	The project minimises adverse impacts on the visual amenity of the built and natural environment (including public open space) and capitalises on opportunities to improve visual amenity.	▸ Vegetation providing screening to the rail corridor is retained where practicable. ▸ The proposal is designed to have regard to the surrounding landscape and visual environment. ▸ The proposal incorporates features to minimise the potential visual impacts where visual receptors are concentrated. ▸ The proposal makes a positive contribution to the quality of the visual environment in the vicinity of the Newell Highway and Jones Avenue overbridges, and the new bridges over	

ENVIRONMENTAL PERFORMANCE OUTCOMES			
KEY ISSUE (AS LISTED IN THE SEARS)	**SEARS DESIRED PERFORMANCE OUTCOMES**	**PROPOSAL SPECIFIC CONSTRUCTION ENVIRONMENTAL PERFORMANCE OUTCOMES**	**WHERE ADDRESSED**
		the Mehi and Gwydir rivers and Croppa Creek. ▸ The proposal is visually integrated with its surroundings.	
19 Waste	All wastes generated during the construction and operation of the proposal are effectively stored, handled, treated, reused, recycled and/or disposed of lawfully, and in a manner that protects environmental values.	▸ Waste is managed in accordance with the POEO Act and the WARR Act. ▸ Waste is assessed, classified, managed, and disposed of in accordance with the Waste Classification Guidelines (EPA, 2014). ▸ Reusable spoil is beneficially reused in accordance with the project spoil reuse hierarchy.	Appendix G - Waste and Resource Environmental Control Map
20 Water - hydrology	Long term impacts on surface water and groundwater hydrology (including drawdown, flow rates and volumes) are minimised. The environmental values of nearby, connected and affected water sources, groundwater and dependent ecological systems including estuarine and marine water (if applicable) are maintained (where values are achieved) or improved and maintained (where values are not achieved). Sustainable use of water resources.	▸ The proposal avoids long term impacts to surface water. ▸ Opportunities to reuse water resources are considered during the design process. ▸ The use of water during construction is minimised.	Construction Soil and Water Management sub-Plan
21 Water - quality	The project is designed, constructed and operated to protect the NSW Water Quality Objectives where they are currently being achieved, and contribute towards achievement of the Water Quality Objectives over time where they are currently not being achieved, including downstream of the project to the extent of the project impact including estuarine and marine waters (if applicable).	▸ The proposal is designed and constructed such that changes to water flows in watercourses are minimised. ▸ Water discharged does not exceed the ANZECC 2000 guidelines for protection of aquatic ecosystems or water quality trigger values. ▸ Impacts to water quality during construction and operation are minimised.	Construction Soil and Water Management sub-Plan

LEGAL REGISTER			
ACT	**ASPECT**	**REQUIREMENT**	**WHERE ADDRESSED**
Environment Protection Biodiversity Conservation Act, 1999 (Cwlth)	Flora / Fauna and Matters of National Environmental Significance	▸ Part 13 - Do not kill, injure or take a member of a listed threatened species without a permit. ▸ Comply with the terms of any EPBC Act approval for the project.	Biodiversity Management sub-Plan
Crown Lands Act 1989	Crown Land	▸ S34A - Ministerial approval required to grant a 'relevant interest' over a Crown Reserve. Any works on Crown land are likely to occur pursuant to a relevant interest (i.e. licence, permit, easement or right of way) to be granted for works on this land.	N/A
National Greenhouse and Energy Reporting Act 2007 and Regulations 2008	Greenhouse gas Emissions	▸ Accounting and reporting of greenhouse gases produced and energy consumed during construction. Applicability dependent on thresholds.	Sustainability Management Plan
Biosecurity Act 2015	Biodiversity matters	▸ S22 - The duty to prevent, eliminate and minimise biosecurity risks posed by biosecurity matters as defined by the Act.	Biodiversity Management sub-Plan
Biosecurity Regulation 2017	Pests and Disease	▸ Regulation cl.7 - Notify the presence any pest or disease listed in Schedule 1 of the Biosecurity Regulation 2014, within 1 working day after suspecting or becoming aware of the pest or disease.	Biodiversity Management sub-Plan
Fisheries Management Act 1994	Fish passage	▸ S219 - Do not block fish passage without a permit.	Biodiversity Management sub-Plan
Biodiversity Conservation Act 2016	Fauna	▸ S2.1 / S2.8 - Do not harm any animal that is; of a threatened species, that is part of a threatened ecological community or is a protected animal, unless authorised under other legislation (e.g. planning approval).	Biodiversity Management sub-Plan
	Habitat	▸ S2.4 / S2.8 - Do not damage habitat of a threatened species or ecological community unless authorised under other legislation (e.g. planning approval).	Biodiversity Management sub-Plan
	Biodiversity	▸ S2.3 / S2.8 - Do not damage declared areas of outstanding biodiversity value unless authorised under other legislation (e.g. planning approval).	Biodiversity Management sub-Plan
	Flora	▸ S2.2 / S2.8 - Do not pick a plant that is; of a threatened species, that is part of a threatened ecological community or is a protected plant, unless authorised under other legislation (e.g. planning approval).	Biodiversity Management sub-Plan
Environmental Planning and Assessment Act 1979	All	▸ S5.13 / S5.14 - The Project has been declared critical State Significant Infrastructure (CSSI) by virtue of Schedule 5, clause 4 of State Environmental Planning Policy (State and Regional Development) 2011. Comply with the terms Minister for Planning's approval for the project. Obtain the Minister's approval for any project modifications that are not consistent with the planning approval	CEMP (Section 4.3)
Protection of the Environment	Environmental Protection	▸ S115 / S116 / S117 - Do not risk harming the environment by wilfully or negligently:	CEMP (App G)

LEGAL REGISTER			
ACT	**ASPECT**	**REQUIREMENT**	**WHERE ADDRESSED**
Operations Act 1997		- Disposing of waste unlawfully - Causing any substance to leak, spill or otherwise escape (whether or not from a container) or - Emitting an ozone depleting substance.	
	Water Pollution	▸ S120 / S122 - Do not cause water pollution (other than to a sewer), except in accordance with the conditions of an Environment Protection Licence.	Soil and Water Management sub-Plan
	Air Pollution	▸ S124 - Do not operate plant which emits air pollution caused by poor maintenance or operation.	Soil and Water Management sub-Plan
		▸ S126 - Do not cause or neglect to prevent air pollution (eg dust exceeding reasonable levels without active management measures in place).	Soil and Water Management sub-Plan
		▸ S129 - Do not cause or permit the emission of an offensive odour.	Soil and Water Management sub-Plan
	Plant operation and maintenance	▸ S139 - Do not operate plant if it emits noise caused by poor maintenance or operation.	Soil and Water Management sub-Plan
	Materials Management	▸ S140 - Do not cause noise by failing to properly and efficiently deal with materials	Soil and Water Management sub-Plan
	Land Pollution	▸ S142 (A – E) - Do not cause or permit land pollution other than under authority of a licence or regulation. (However, it is not a land pollution offence to place virgin excavated natural material or lawful pesticides and fertilisers on land, or by placing matter on land that has been notified to the EPA as an unlicensed landfill and which is operated in accordance with the regulations.)	Soil and Water Management sub-Plan
	Waste	▸ Part 5.6A - Do not litter in a public place or an open private place. Do not litter from a vehicle. Only deposit advertising material in receptacles provided for mail or newspapers or under the door of the premises. Do not deposit advertising material on or in vehicles.	CEMP (App G) – Waste and Resource ECM
		▸ Part 3.2 - Do not undertake a scheduled waste activity unless in accordance with an environmental protection licence. A licence must be obtained when construction and demolition wastes are applied to land under certain circumstances. This includes the reincorporation of crushed road base material back into roads and the placing of excess fill material onto properties. A licence is not required if the material: - Is VENM. - Does not exceed 200 tonnes in the Sydney, Newcastle and Wollongong areas, or 20,000 tonnes outside these areas. - Is covered by a “general exemption”. Current exempted materials are ENM, recycled aggregates and raw mulch. These exemptions are conditional and require some chemical testing of materials before they are placed onto land.	CEMP (App G) – Waste and Resource ECM

LEGAL REGISTER			
ACT	**ASPECT**	**REQUIREMENT**	**WHERE ADDRESSED**
		- A licence must be obtained if more than 2,500 tonnes (or cubic metres) is stored on a stockpile site at any one time, or more than 30,000 tonnes of waste is received per year from off site.	
		▸ S143 - Only transport waste to a facility that can lawfully accept the waste.	CEMP (App G) – Waste and Resource ECM
		▸ S115 - Do not dispose of waste in a manner that harms or is likely to harm the environment.	CEMP (App G) – Waste and Resource ECM
	Notification of pollution incidents	▸ S148 - Notify the EPA immediately of pollution incidents where material harm to the environment is caused or threatened.	CEMP (Section 10)
	Incident response	▸ S153 (A - F) - Requires the holder of an EPL to prepare a pollution incident response management plan (PIRMP).	CEMP (Section 10)
	Control equipment	▸ S176 - Properly and efficiently maintain and operate any installed pollution control equipment (including monitoring devices.	CEMP (Section 10)
	Site Licensing	▸ cl. 35 - An Environment Protection Licence (EPL) under Chapter 3 of the POEO Act would be required for the construction of the project.	CEMP (Section 6.2)
		▸ S47 / S48 - Do not carry out or allow an activity listed in Schedule 1, or carry out work to enable such an activity, unless the premises are licensed by the EPA. This applies to: - Railway Infrastructure Construction	CEMP (Section 6.2)
Protection of the Environment Operations (Waste) Regulation 2005	Waste	▸ Regulation cl.49 - Comply with general requirements for the transport of waste. For example, any vehicle used by the person to transport waste must be kept in a clean condition and be maintained so as to prevent spillage of waste. For some wastes only licensed transporters can be used.	CEMP (App G) – Waste and Resource ECM
		▸ Regulation Part 3 - Comply with record keeping requirements in relation to the transport of certain types of waste.	CEMP (App G) – Waste and Resource ECM
Waste Avoidance and Resource Recovery Act 2001	Waste Avoidance	▸ Establish the waste hierarchy. Promotes waste avoidance and resources recovery by developing waste avoidance and resource recovery strategies.	CEMP (App G) – Waste and Resource ECM
Contaminated Land Management Act 1997	Reporting Contamination	▸ S60 - Notify the EPA if; - Contaminants exceed thresholds contained in guidelines or the regulations where contamination has entered or will foreseeably enter neighbouring land, the atmosphere, groundwater or surface water. - Contaminants in soil are equal to or exceed guideline levels with respect to the current or approved use of the land. - Contamination meets other criteria that may be prescribed by the regulations.	Soil and Water Management sub-Plan
Environmentally Hazardous	Hazards and risk	▸ S28 - Obtain a licence to undertake prescribed activities involving environmentally hazardous chemicals or declared chemical wastes.	CEMP (App G) – Hazardous

LEGAL REGISTER			
ACT	**ASPECT**	**REQUIREMENT**	**WHERE ADDRESSED**
Chemicals Act, 1985			Chemicals ECM
Dangerous Goods (Road and Rail Transport) Act 2008	Hazards and risk	▸ S9 - Ensure that dangerous goods are transported in a safe manner.	CEMP (App G) – Hazardous Chemicals ECM
Pesticides Act 1999	Hazards and risk	▸ S12 - Use pesticides in an environmentally sensitive manner.	Biodiversity Management sub-Plan
		▸ S13 - Do not use an unregistered pesticide without a permit.	Biodiversity Management sub-Plan
		▸ S14 - Read the label or permit for the pesticide.	Biodiversity Management sub-Plan
		▸ S15 - Use registered pesticides in accordance with instructions on the label.	Biodiversity Management sub-Plan
		▸ S17 - Do not use any restricted pesticide unless authorised by a certificate of competency or a pesticide control order under the Act.	Biodiversity Management sub-Plan
Heritage Act 1977	Heritage	▸ S56 / S57 - Do not undertake an activity that will affect a place, building, work, relic, moveable object or precinct which is subject to an Interim Heritage Order or is listed on the State Heritage Register without approval from the Heritage Council.	Heritage Management sub-Plan
		▸ S139 - Do not disturb or excavate land with knowledge or reasonable cause to suspect that the disturbance or excavation will or is likely to result in a relic being discovered, exposed, moved, damaged or destroyed; or Do not disturb or excavate land on where a relic has been discovered or exposed	Heritage Management sub-Plan
		▸ S146 - Notify the heritage Council on discovery of a relic.	Heritage Management sub-Plan
National Parks and Wildlife Act 1974	Aboriginal Heritage	▸ S86 - Do not harm or desecrate an Aboriginal object or Aboriginal place without consent.	Heritage Management sub-Plan
		▸ S89A - Notify the NPWS within reasonable time of becoming aware of the location or discovery of certain Aboriginal objects.	Heritage Management sub-Plan
Aboriginal and Torres Strait Islander Heritage Protection Act 1984 (Commonwealth)	Protection of areas and objects	▸ S20 - Report any discovery of Aboriginal remains to the Federal Minister for the Environment and Heritage.	Heritage Management sub-Plan
		▸ S22 - Comply with the provisions of any declaration in relation to a significant Aboriginal area or object.	Heritage Management sub-Plan
Roads Act 1993	Road Work	▸ S138 - Requires the consent of the appropriate road authority for carrying out work on, or disturbing, the surface of a public road. Where the proponent is a public authority, the roads authority must consult with the applicant before making a decision.	Traffic, Transport and Access Management sub-Plan

LEGAL REGISTER			
ACT	**ASPECT**	**REQUIREMENT**	**WHERE ADDRESSED**
Transport Administration Act 1988	Traffic Management	▸ S138 - Obtain a Road Occupancy Licence prior to commencement of traffic related works that require access to roads	Traffic, Transport and Access Management sub-Plan
		▸ S52A - Comply with the functions of TfNSW relating to traffic management and safety.	Traffic, Transport and Access Management sub-Plan
Road Rules 2014	Road Use	▸ Establish the road rules that are applicable to vehicles and road users on roads in NSW.	Traffic, Transport and Access Management sub-Plan
		▸ S310 - Provisions of Road Rules 2014 not applicable to a person at the site of, and engaged in, roadworks.	Traffic, Transport and Access Management sub-Plan
Local Government Act 1993	Fire	▸ In the event of a fire related incident, the Project will comply with the requirements of the Act	Emergency Response Management Plan
Rural Fires Act 1997			

Appendix B Trans4m Rail's Environment, Sustainability and Community Policies

Policy

Environment

Our commitment

To value the natural environment and communities in which we work. Our goal across all business activities is to use resources efficiently, respond to climate change, prevent pollution, enhance and protect the environment and our heritage.

Our approach

Trans4m Rail four values of caring, empowering, imaginative and future-focused are the platform for our everyday interactions. We use these values to guide our approach to the environment.

Environment Policy in practice

Caring

We care deeply about what we do and how it affects the environment now and for the future by:

- Driving a strong culture to respect the environment across the business in our offices, on our projects and with our joint venture partners.
- Prioritising the environment, the community, sustainable products and resource efficiency in our decision making.
- Providing best practice training and education to our people to build awareness and capability to protect the environment and respect the communities in which we work and live.

Empowering

We gain trust through action by:

- Empowering our people, partners and subcontractors to speak up about how we can better protect and enhance the environment.
- Encouraging participation and collaboration to achieve sound environmental performance and outcomes.
- Driving accountability by ensuring everyone is responsible for valuing and protecting the environment.

Imaginative

We push the boundaries by:

- Focusing on continual learning and improvement by reviewing performance, capturing and sharing lessons learnt and celebrating successes.
- Exploring and introducing new technologies and approaches that minimise impacts on the environment and provide cost effective solutions that are resource efficient.
- Having a transparent critical risk management process that helps us to continuously identify opportunities and improvements to our systems and processes.

Future-focused

We're in it for the long, long term by:

- Exceeding our legislative, customer and other mandatory requirements.
- Establishing and maintaining an effective management system.
- Ensuring our work leaves a positive legacy for the communities we serve and the environments we operate in.

Malcolm Tinkler
Operations Manager - Rail Projects
John Holland Group Pty Ltd
October 2020

Joel Barnes
EGM Operations
SEE Group Holdings Pty Ltd
October 2020

Policy

Sustainability

Our commitment

Trans4m Rail is committed to integrating economic growth, environmental resilience, and social progress as priorities into decision-making at every level of the business, with the ambition to create long-term value.

Our approach

Trans4m Rail will undertake its business in a manner that maximises positive social and economic impact for our people and stakeholders. We are adopting a resilient and enduring strategic approach to meet and mitigate the existing and emerging challenges for society and our infrastructure environment. Trans4m Rail acknowledges that sustainability enables long term financial resilience.

Sustainability Policy in practice

- Create a sense of place for communities, by making a positive and meaningful difference to the community by genuinely engaging with the community and stakeholders
- Work closely with our customers to achieve optimal and resilient outcomes for users and society
- Decision making to integrate economic, social, environmental and governance aspects, and seek to achieve positive outcomes in each
- Minimise whole of life asset impact by future proofing our assets and responding to climate change
- Address environment considerations in a manner that is sensitive to the needs of our stakeholders and the environment, creating enhanced environmental outcomes wherever practical
- Be recognised as an industry leader in making our workplaces safer through innovation, collaboration and effective planning and management of risks
- Enhance workforce health and wellbeing and inclusion and diversity, through employee empowerment to deliver sustainable outcomes
- Source sustainably and ethically, including prioritising local industry participation, social procurement initiatives and a commitment to avoiding modern slavery
- Encourage innovation amongst our delivery teams and supply chain to achieve sustainable outcomes
- Manage all activities ethically, measuring and reporting the sustainability performance of the project
- Govern for sustainability by implementing project systems and processes to ensure the effective and efficient delivery and operation of the project
- Support the UN Sustainable Development Goals

A MORE PROSPEROUS AUSTRALIA
WITH A WORLD-CLASS SUPPLY CHAIN
BASED ON A FAST, SAFE, RELIABLE,
CONNECTED INLAND RAIL

Malcolm Tinkler
Operations Manager - Rail Projects
John Holland Group Pty Ltd
October 2020

Joel Barnes
EGM Operations
SEE Group Holdings Pty Ltd
October 2020

Policy

Community and Stakeholder

Our commitment

Trans4m Rail is committed to proactive, genuine and positive community engagement. Successful community engagement is the responsibility of every member of our team and our focus is to minimise disruption and build positive relationships.

Our approach

Trans4m Rail will approach all community and stakeholder engagement with the genuine intent to involve the community in a positive way. Trans4m Rail will collaborate and encourage two-way communication and participation while being clear about our works and the disruptions it may cause.

Community and Stakeholder Policy in practice

- Communicate honestly, transparently and with respect
- Engage and be accessible to all members of the community and our stakeholders
- Consider the community in our decision making
- Ensure our staff, subcontractors and suppliers understand and comply with our community obligations
- Be an active member of the local community by supporting social, cultural, environmental and charitable initiatives
- Review and improve our performance to achieve best-practice community engagement
- Protect the safety of the community who interact with our works
- Work with all parties to constructively resolve any issues arising from our works
- Enhance the reputation of ARTC Inland Rail project and our part in it
- Build positive relationships with the community and all our stakeholders.

A MORE PROSPEROUS AUSTRALIA
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Malcolm Tinkler
Operations Manager - Rail Projects
John Holland Group Pty Ltd
October 2020

Joel Barnes
EGM Operations
SEE Group Holdings Pty Ltd
October 2020

Appendix C Project Location and Key Features

TRANS4.M RAIL

Narrabri to North Star Construction EMP

SHEET 1 OF 15

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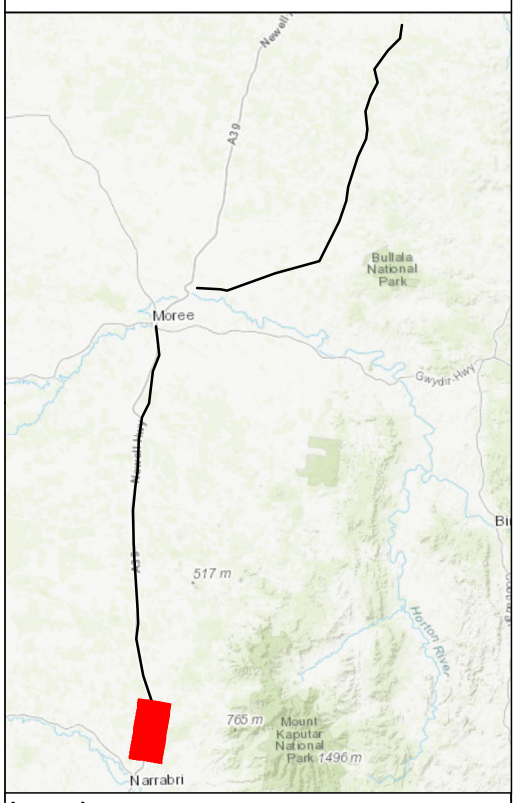

Spring Creek

Very gently inclined slopes

021

Legend

- Threatened Species
- Koala habitat
- Homopholis belsonii
- Digitaria porrecta

Veg Comms Vegetation:

- Zone: Cleared/Non-native Vegetation
- Zone 1: PCT-27 BVT-BR233
- Zone 2: PCT-35 BVT-BR120, NA117
- Zone 3: PCT-39 BVT-BR130, NA129
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- Artefact
- Stations Heritage
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- Heritage Listed Sites
- Archaeology Data
- ACH Landform Constraints
- ACH Landform Constraints Lines
- Archaeological Survey Area
- Additional Niche Survey Areas
- Heritage Listed Sites
- Construction Footprint

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TRANS4M RAIL

Narrabri to North Star Construction EMP

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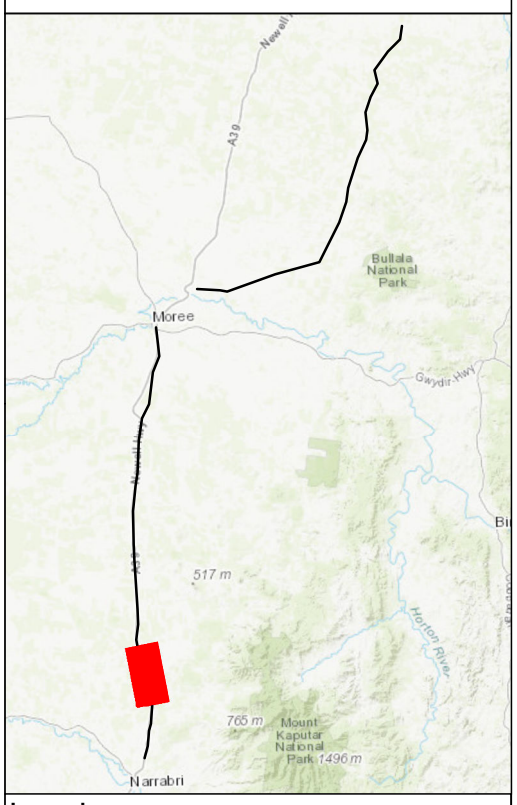

Edgeroi;
Woolenget Station
Galathera Creek
Tarlee Creek North
Edgeroi Station
Tahlee Creek South

Legend

- Threatened Species
- Koala habitat
- Homopholis belsonii
- Digitaria porrecta

Veg Comms Vegetation:

- Zone: Cleared/Non-native Vegetation
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TRANS4.M RAIL

Narrabri to North Star Construction EMP

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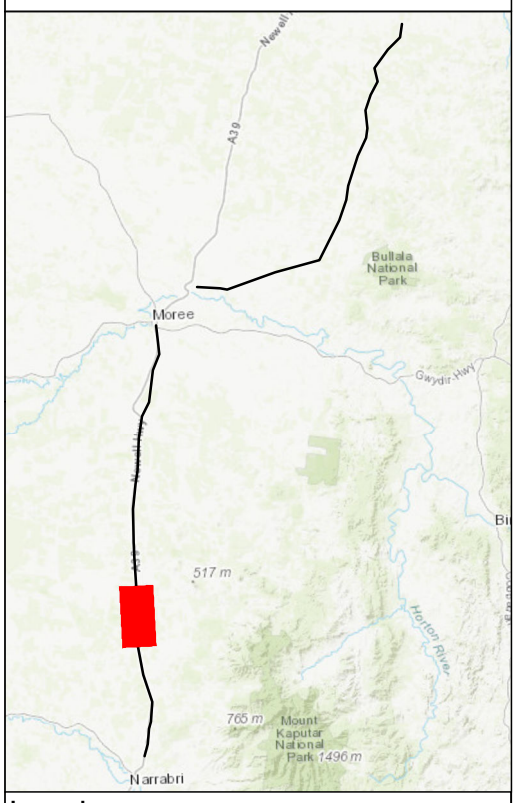

Boggy Creek North

Boggy Creek South

10 Mile Creek North

Gently inclined slopes

10 Mile Creek South

10 Mile Creek (south)

Edgeroi

Legend

- Threatened Species
- Koala habitat
- Homopholis belsonii
- Digitaria porrecta

Veg Comms Vegetation:

- Zone: Cleared/Non-native Vegetation
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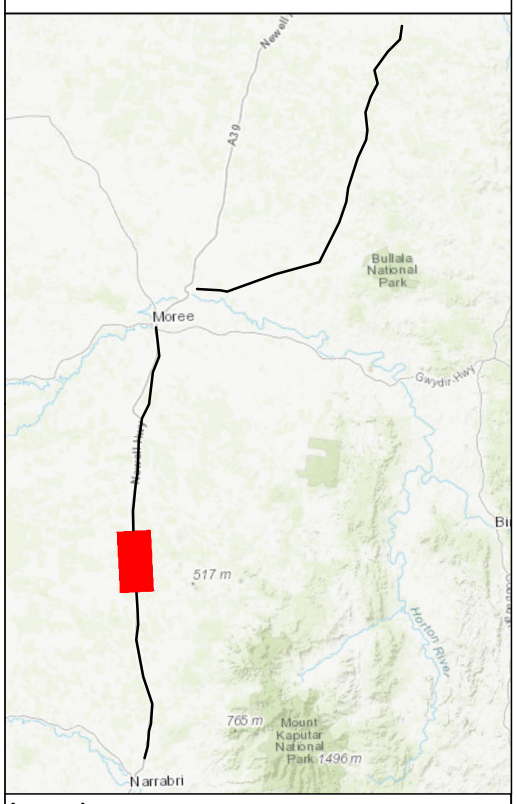

Tookey Creek North and adjoining gently inclined slopes

NNS AS1

NNS IA3

NNS IA2

Lower slopes (gently inclined)

Bellata Station

Bellata;

Bellata;

Myall Hollow Creek

Bellata;

Bellata;

Legend

- Threatened Species
- Koala habitat
- Homopholis belsonii
- Digitaria porrecta

Veg Comms Vegetation:

- Zone: Cleared/Non-native Vegetation
- Zone 1: PCT-27 BVT-BR233
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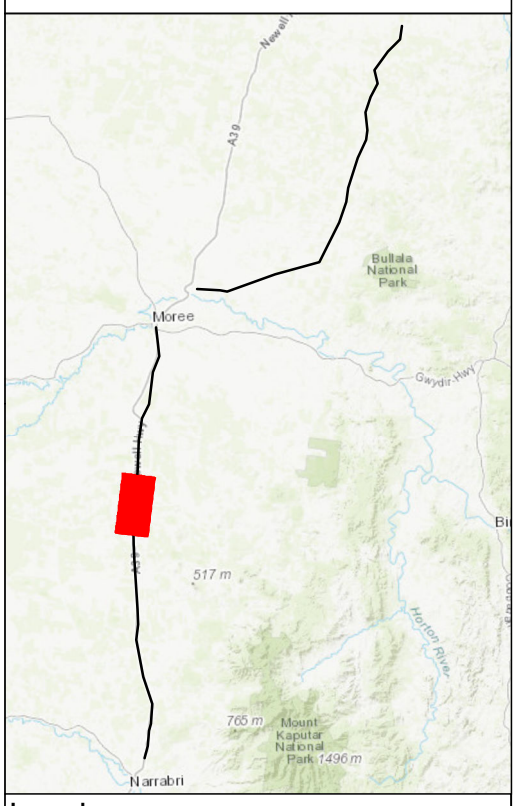

Bumble Creek

Gently inclined slopes

Kilgowla Station

Waterloo Creek

NNS IA5

NNS IA4

Tookey Creek Tributary and adjoining gently inclined slopes

Legend

- Threatened Species
- Koala habitat
- Homopholis belsonii
- Digitaria porrecta

Veg Comms Vegetation:

- Zone: Cleared/Non-native Vegetation
- Zone 1: PCT-27 BVT-BR233
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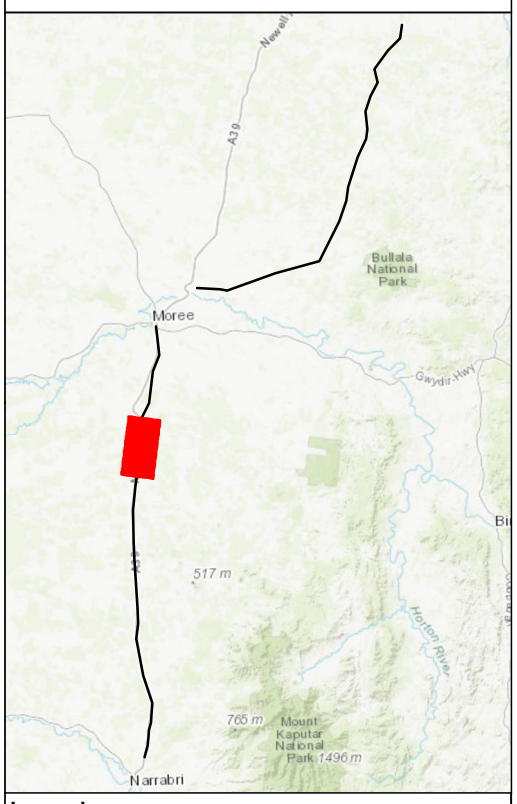

N2NS ST1

NNS AS2

Gently inclined slopes

Gurley Creek

Gurley Station

Legend

- Threatened Species
- Koala habitat
- Homopholis belsonii
- Digitaria porrecta

Veg Comms Vegetation:

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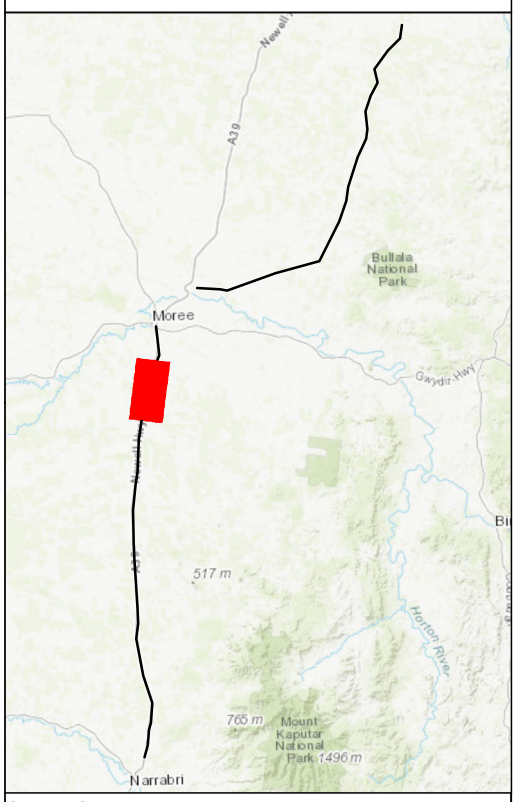

Moree Evergreen Precinct Scarred Tree 1

Very gently inclined slopes and artificial drain

BP Solar Scarred Tree 2

Tycannah Station

Tycannah Creek 3

119

Tycannah Creek

Tycannah Creek 1

Legend

- Threatened Species
- Koala habitat
- Homopholis belsonii
- Digitaria porrecta

Veg Comms Vegetation:

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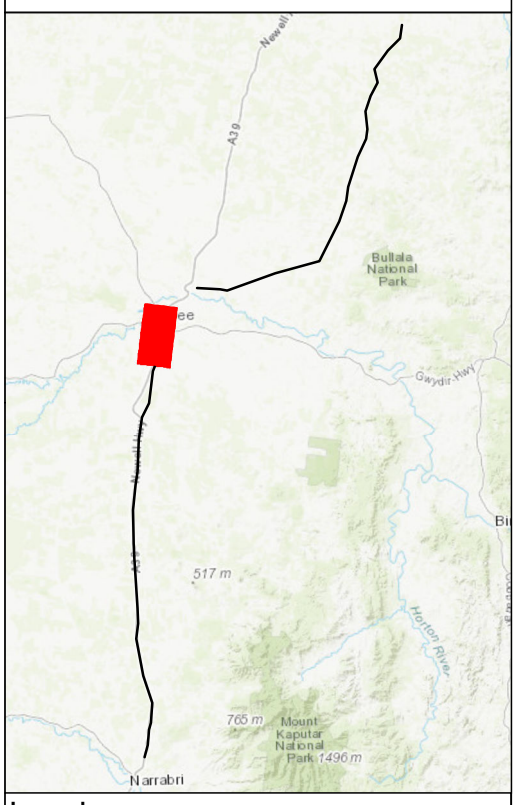

Yarraman gravel pitt ST1
Moree Cohen Street Scarred Trees
SC PAD
SC-IF1
SC-OS1
DC-OS-1
Mehi River Area (extends width of corridor)
Taylor Oval burial
Steelbridge Camp
Moree Showground
Mehi River Bridge
BBS; Moree LALC; Top Camp 1
BBS; Moree LALC; Top camp
Jellicoe Park
Top Camp
BG-WS-1
TC-IF-1
Moree scarred tree 14
Moree Railway Station
Moree Station
Halls Creek and adjoining very gently inclined slopes
HC-IF-1
HC-OS1

Legend

- Threatened Species
- Koala habitat
- Homopholis belsonii
- Digitaria porrecta

Veg Comms Vegetation:

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NNS IA7

NNS IA6

TRANS4M RAIL

Narrabri to North Star Construction EMP

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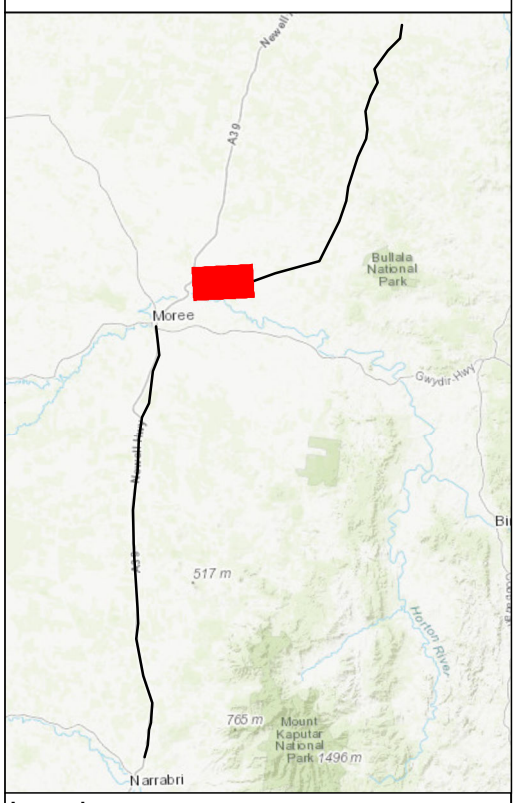

Legend

- Threatened Species
- Koala habitat
- Homopholis belsonii
- Digitaria porrecta

Veg Comms Vegetation:

- Zone: Cleared/Non-native Vegetation
- Zone 1: PCT-27 BVT-BR233
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Narrabri to North Star Construction EMP

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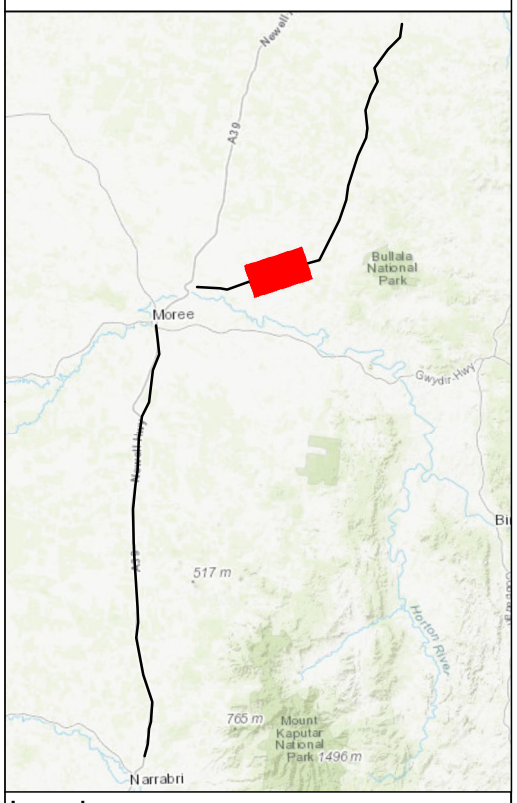

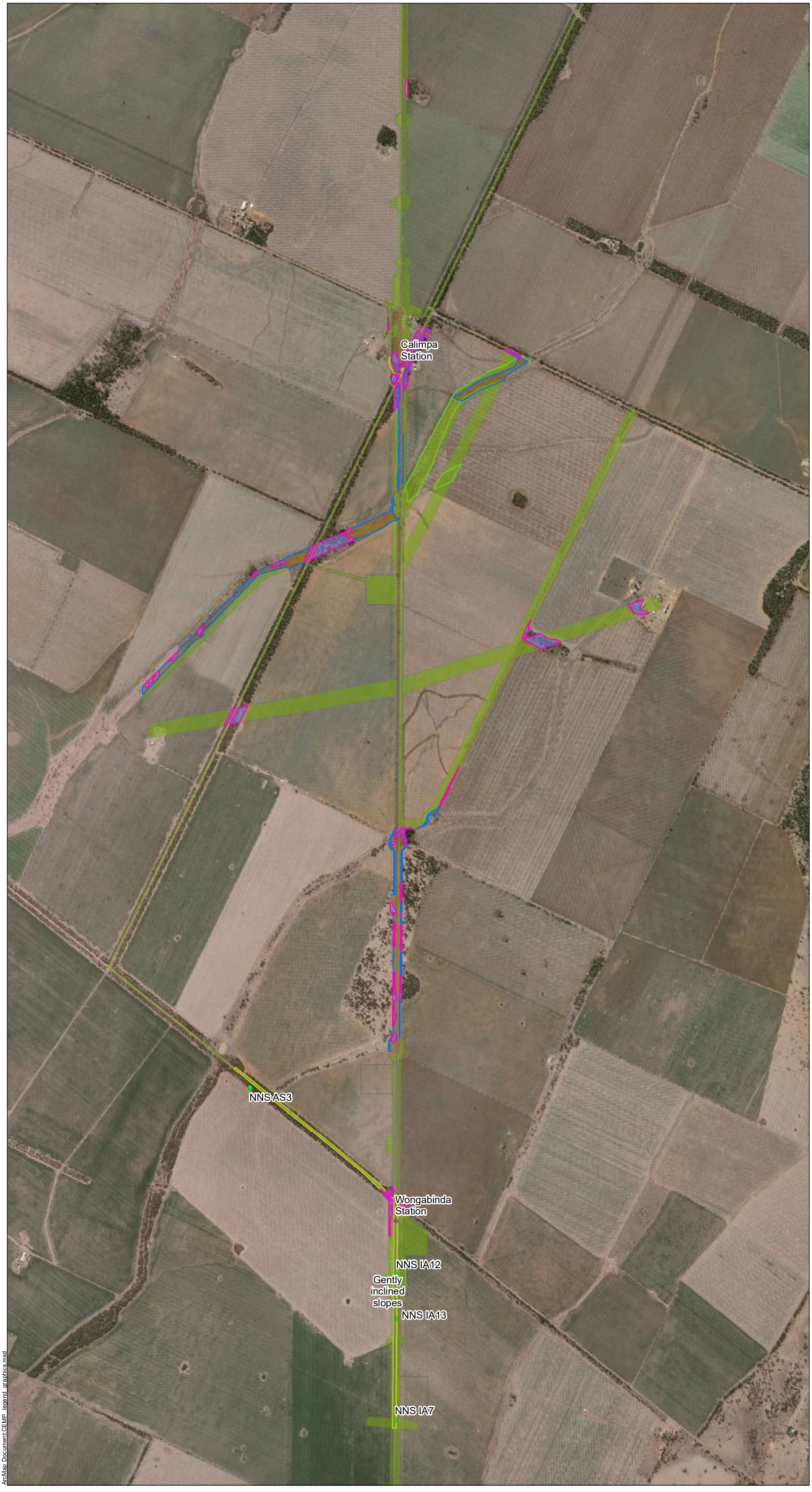

Legend

- Threatened Species
- Koala habitat
- Homopholis belsonii
- Digitaria porrecta

Veg Comms Vegetation:

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NNS AS4

Bunna Creek
209 South
212

NNS IA9
Gently
inclined slopes

Milguy
Station

NNS IA8
Drainage line
(first order)

TRANS4M RAIL

Narrabri to North Star Construction EMP

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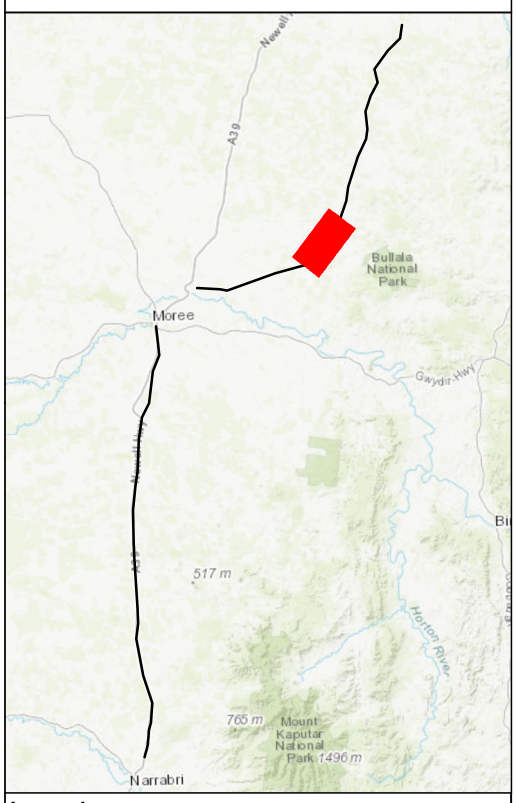

Legend

- Threatened Species
- Koala habitat
- Homopholis belsonii
- Digitaria porrecta

Veg Comms Vegetation:

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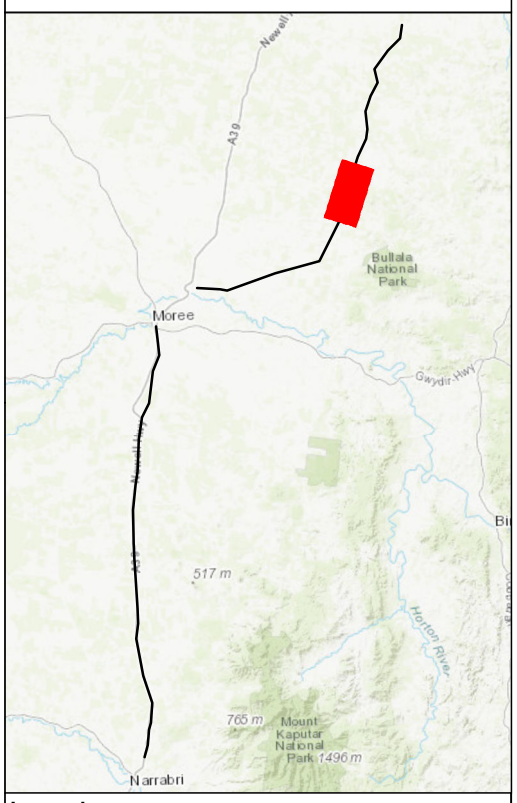

Legend

- Threatened Species
- Koala habitat
- Homopholis belsonii
- Digitaria porrecta

Veg Comms Vegetation:

- Zone: Cleared/Non-native Vegetation
- Zone 1: PCT-27 BVT-BR233
- Zone 2: PCT-35 BVT-BR120, NA117
- Zone 3: PCT-39 BVT-BR130, NA129
- Zone 4: PCT-52 BVT-BR191, NA187
- Zone 5: PCT-56 BVT-BR186, NA182
- Zone 6: PCT-56 BVT-BR186, NA182
- Zone 7: PCT-71 BVT-BR127,NA126
- Zone 8: PCT-78 BVT-BR196, NA193
- Zone 9: PCT-135 BVT-BR284, NA271
- Zone 10: PCT-413 BVT-BR346, NA348
- Aboriginal Cultural Heritage Sites
- Artefact
- Stations Heritage
- AHIMS Results Umwelt
- Heritage Listed Sites
- Archaeology Data
- ACH Landform Constraints
- ACH Landform Constraints Lines
- Archaeological Survey Area
- Additional Niche Survey Areas
- Heritage Listed Sites
- Construction Footprint

Crooble Station

Gil Gil Creek and adjoining lower slopes

NNS AS4

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NOT FOR CONSTRUCTION

Yallaroi Creek

Gently inclined slopes

Croppa Creek and adjoining slopes and terraces. Survey included additional assessment area to east of proposal site

Croppa Creek South and adjoining gently inclined slopes. Survey included additional assessment area to east of proposal site

Croppa Creek Station

TRANS4.M RAIL

Narrabri to North Star Construction EMP

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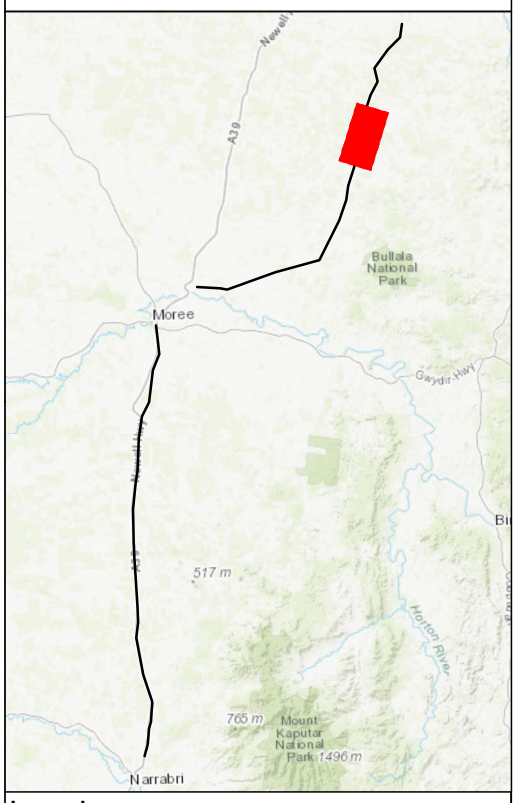

Legend

- Threatened Species
- Koala habitat
- Homopholis belsonii
- Digitaria porrecta

Veg Comms Vegetation:

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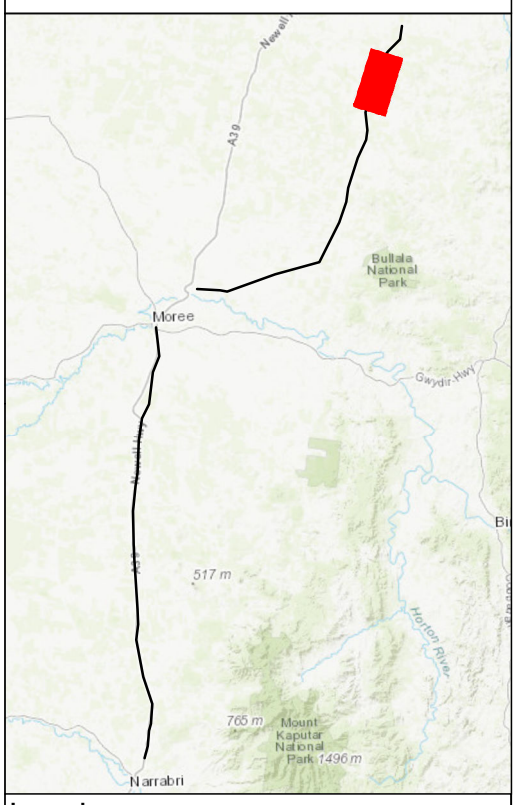

Windridge Station
Mungle Creek South
N2NS IA1
NNS AS7
Gently inclined slopes
Mungle Creek south - tributary
NNS IA11
NNS IA10
Tikitere
Tikitere Station
Tackinbri Creek tributary
176
Yallaroi Creek

Legend

- Threatened Species
- Koala habitat
- Homopholis belsonii
- Digitaria porrecta

Veg Comms Vegetation:

- Zone: Cleared/Non-native Vegetation
- Zone 1: PCT-27 BVT-BR233
- Zone 2: PCT-35 BVT-BR120, NA117
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TRANS4.M RAIL

Narrabri to North Star Construction EMP

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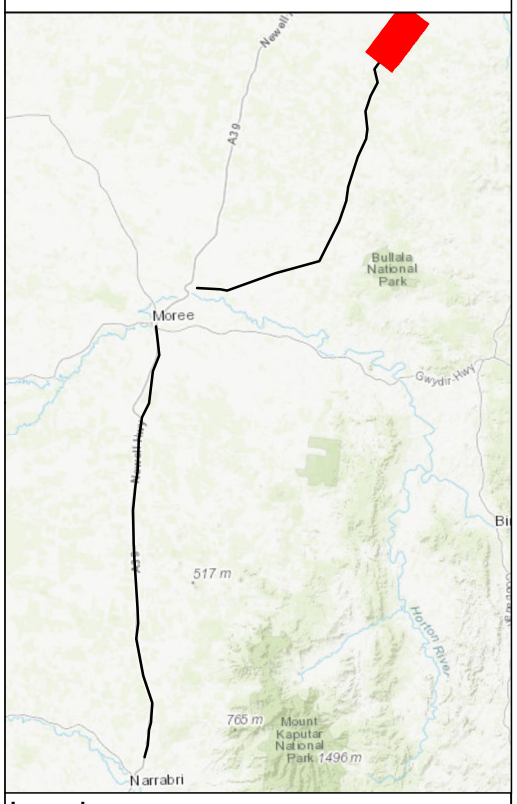

North Star Station

Very gently inclined slopes bordering Bobbiwaa Creek

NNS AS5

NNS AS6

Windridge Station

Mungle Creek South

Legend

- Threatened Species
- Koala habitat
- Homopholis belsonii
- Digitaria porrecta

Veg Comms Vegetation:

- Zone: Cleared/Non-native Vegetation
- Zone 1: PCT-27 BVT-BR233
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Appendix D Environmental Risk Assessment

ISSUE	CONSTRUCTION ACTIVITY/ ASPECT	POTENTIAL IMPACT	RISK LEVEL PRIOR TO MITIGATION	INDICATIVE MITIGATION MEASURES	RISK LEVEL FOLLOWING MITIGATION	DOCUMENTS/PROCEDURES/TRAINING REQUIRED
TRAFFIC, TRANSPORT AND ACCESS						
	Temporary access roads General earthworks and construction ▸ Import of material/ plant/equipment. ▸ Construction site compounds ▸ Construction vehicle movements and deliveries Travel to/from site	Construction traffic impacts, including temporary delays to local and regional traffic	High	▸ Traffic and access would be managed in accordance with Traffic Control at Work Sites (RTA, 2010) and in consultation with Roads and Maritime Services, and local councils. ▸ Adequate road signage would be provided to inform drivers of the work, timing and alternative access arrangements. ▸ 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. ▸ A traffic, transport and access management sub-plan would be prepared and implemented as part of the CEMP. It would include measures to minimise the potential for impacts on the community and the operation of the surrounding road and transport environment. It would address all the aspects of construction relating to the movement of vehicles, pedestrians and cyclists, and the operation of the surrounding road network, ▸ The plan would specify routes to be used by heavy construction-related vehicles to minimise impacts on sensitive land uses and the local community. The plan would include measures to minimise impacts to local roads, including the condition of roads. It would include a requirement to prepare a road dilapidation report for all local public roads proposed to be used by heavy vehicles, and measures to restore any impacted roads to their pre-existing condition. ▸ Construction vehicles would park within the construction compound 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. ▸ Adequate sight lines would be provided to allow for safe entry and exit from the construction sites. ▸ Access to all private properties adjacent to the proposal site would be maintained during construction, unless otherwise agreed with relevant landowners. ▸ Councils, Roads and Maritime Services and emergency services would be liaised with at an early stage to establish requirements and measures to be adopted to maintain emergency vehicle movements. ▸ Contractors, including transport/deliveries contractors, would be provided with a copy of the	Medium	CONSTRUCTION TRAFFIC, TRANSPORT AND ACCESS MANAGEMENT SUB-PLAN SITE ESTABLISHMENT MANAGEMENT PLAN Waste Management Procedure (T4MR-MPR-ENV-007) Waste and Resource ECM (T4MR-FRM-ENV-001-10) Activity Method Statement (AMS) Dust and Air Quality ECM (T4MR-FRM-ENV-001-05) Hazardous Chemical ECM (t4MR-FRM-ENV-001-07) Induction Toolbox Talk – Access and Careful Driving
		Congestion in surrounding road networks due to diversion of road users during construction	Low		Low	
		Reduced pedestrian, cyclist and road user access	Low		Low	
		Loss of parking spaces and loading zones in towns near construction areas	Medium		Medium	
		Impacts to emergency services through delays in access due to works	Medium		Low	
		Impacts on access to private properties	Medium		Low	
		Impacts to rural roads unsuitable for construction	Medium		Medium	

ISSUE	CONSTRUCTION ACTIVITY/ ASPECT	POTENTIAL IMPACT	RISK LEVEL PRIOR TO MITIGATION	INDICATIVE MITIGATION MEASURES	RISK LEVEL FOLLOWING MITIGATION	DOCUMENTS/PROCEDURES/TRAINING REQUIRED
				traffic, transport and access management sub-plan to ensure disruptions to the local community are minimised. ▸ 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 of the work and ensure that the risk of accidents and disruption to surrounding land uses is minimised. ▸ 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. ▸ Access for emergency vehicles would be maintained along key emergency access routes throughout the construction period, with suitable alternative access arrangements provided where required. ▸ Diversions of existing rail traffic would be undertaken in consultation with relevant stakeholders, and alternative arrangements would be provided. ▸ Replacement public transport services would be provided during interruptions to operation of the passenger rail service. ▸ Consultation with relevant stakeholders would be undertaken regularly to facilitate the efficient delivery of the preferred infrastructure and to minimise congestion and inconvenience to road users. Stakeholders would include the relevant local councils, bus operators, Roads and Maritime Services, emergency services, and affected property owners/occupants. ▸ The community would be notified in advance of any proposed road and pedestrian network changes through signage, the local media, and other appropriate forms of communication. ▸ Where changes to access arrangements are required for individual properties, ARTC would advise relevant property owners/occupants and consult with them in advance regarding alternative access arrangements.		
SOIL AND WATER (INCLUDING SITE CONTAMINATION AND SALINE SOILS)						
	▸ Clearing and grubbing ▸ Earthworks ▸ Storage of fuels, chemicals and other dangerous goods ▸ Stockpile Management	Impacts associated with the disturbance of contaminated soil or dispersive soils during construction	Medium	▸ Sediment and erosion control devices would be installed to minimise mobilisation and transport of sediment in accordance with Managing Urban Stormwater, Soils and Construction (Landcom, 2004). ▸ Maintenance and checking of the erosion and sedimentation controls would be undertaken on a regular basis and any subsequent records retained.	Low	CONSTRUCTION SOIL AND WATER MANAGEMENT SUB-PLAN SITE ESTABLISHMENT MANAGEMENT PLAN Environmental Control Maps (ECM's)
		Disturbance of soils and subsequent loss or degradation of soil quality during earth works at construction compound sites	Low		Low	

ISSUE	CONSTRUCTION ACTIVITY/ ASPECT	POTENTIAL IMPACT	RISK LEVEL PRIOR TO MITIGATION	INDICATIVE MITIGATION MEASURES	RISK LEVEL FOLLOWING MITIGATION	DOCUMENTS/PROCEDURES/TRAINING REQUIRED
	▸ Maintenance of plant and equipment, including servicing and refuelling ▸ Sediment basin management ▸ Drainage works ▸ Water use/extraction ▸ Concrete works ▸ Temporary access road construction/ removal from waterway areas. ▸ Waterway crossings ▸ Spill Management ▸ Landscaping	Disturbance of landforms during earthworks reducing the stability of landforms	Low	▸ Sediment would be cleared from behind barriers/sandbags on a regular basis 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. ▸ Work would cease where practicable during heavy rainfall events when there is a risk of sediment loss off site 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. ▸ 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. ▸ Stockpiles would be managed by implementing sediment and erosion control devices in accordance with Managing Urban Stormwater, Soils and Construction. ▸ No stockpiles of materials or storage of fuels or chemicals would be located within high/ medium flood risk areas or flow paths. ▸ Spill kits would be maintained on-site at all times. ▸ 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 designated areas with appropriate controls. ▸ Visual monitoring of local water quality (i.e. turbidity, hydrocarbon spills/slicks) would be undertaken on a regular basis to identify any potential spills. ▸ Vehicle wash down and/or cement truck washout would occur in a designated bunded area or off-site ▸ Any groundwater encountered during construction would be managed and disposed of in accordance with the Waste Classification Guidelines. Groundwater would be managed to ensure it does not cause pollution of waters in accordance with Section 120 of the POEO Act. ▸ If dewatering is required during construction: ▸ Groundwater would be pumped into a holding tank or water truck. Pump out events would be supervised at all times, and the pump would be positioned to prevent the discharge of sediment-laden water settled at the bottom of the trench.	Low	PESCP Bluebook Vol 2D training Practical ESC training Waste Management ECM (T4MR-FRM-ENV-001-10) Water quality, Erosion and Sediment ECM (T4MR-FRM-ENV-001-11) Hazardous Chemical ECM (T4MR-FRM-ENV-001-07) Water Discharge Permit (T4MR-FRM-ENV-001-01) RMS Stockpile Management Protocol and Stockpile Site Management Guideline Induction Toolbox Talk - ESC
		Increased erosion and sedimentation due to excavation activities and vehicle movement	High		Medium	
		Contamination of soils/groundwater due to spills and leaks during construction	Medium		Low	
		Reduced water quality (increased suspended solids and turbidity) due to earthworks and erosion and sedimentation near watercourses.	Medium		Low	
		Impacts on water quality from contamination from spills and leaks during construction	Medium		Low	
		Impacts on groundwater quality and quantity during drawdown/extraction	Medium		Low	

ISSUE	CONSTRUCTION ACTIVITY/ ASPECT	POTENTIAL IMPACT	RISK LEVEL PRIOR TO MITIGATION	INDICATIVE MITIGATION MEASURES	RISK LEVEL FOLLOWING MITIGATION	DOCUMENTS/PROCEDURES/TRAINING REQUIRED
				▸ Groundwater for discharge to surface water would be tested prior to discharge. ▸ Conditions of discharge are likely to include: ▸ No visible sheen or odour is noted. ▸ Water pH is between 6.5 and 8.5. ▸ Total suspended solids are less than 60 mg/L (approximately equivalent to a turbidity level of 50 NTU). Water may be dosed with gypsum, alum or a similar product to reduce sediment levels if required. ▸ All litter and debris must be filtered out and removed prior to discharge. ▸ Water quality would be checked regularly during discharge events to ensure the pH and suspended solids remain within the allowable levels. ▸ Consideration would be given to the hydrological attributes of the receiving water body prior to discharge (i.e. is sufficient water present to allow dilution etc.). ▸ Waste-water that does not meet the criteria in the EPL would be disposed of off-site by a licensed liquid waste contractor in accordance with the Waste Classification Guidelines. ▸ Discharge to surface water would be undertaken in accordance with the environment protection license for Inland Rail, and would consider the hydrological attributes of the receiving waterbody. ▸ Water quality would be monitored during construction in accordance with the surface water monitoring framework. ▸ Works within or near watercourses would be undertaken with consideration given to the Guidelines for Controlled Activities on Waterfront Land (Office of Water, 2012).		
CONTAMINATION AND HAZARDOUS MATERIALS						
	▸ Storage of fuels, chemicals and other dangerous goods ▸ Maintenance of plant and equipment, including servicing and refuelling ▸ Water use/extraction ▸ Concrete works ▸ Spill Management ▸ General contamination management	Disturbance of unidentified contaminated soils	High	▸ A contamination and hazardous materials sub-plan would detail how potential and actual contaminated soils and materials would be managed during construction to minimise the potential for significant on and off-site impacts. It would include the listed management measures. The plan would be reviewed and signed-off by a certified practitioner ▸ Any hazardous materials that are to remain on site would be surveyed and recorded on a hazardous building material register. A risk assessment would be undertaken and a management plan implemented, including any remediation measures. The register and management plan would be maintained and updated in accordance with the relevant WorkCover codes of practice. ▸ Where required, any materials classified as Hazardous Waste would be treated, or an immobilisation approval obtained, in accordance with Part 10 of the *Protection of the Environment Operations (Waste) Regulation 2014* prior to off-site disposal.	Medium	Water, Erosion and Sediment ECM (T4MR-FRM-ENV-001-11) Hazardous Chemicals Procedure (T4MR-MPR-SQE-011) Hazardous Chemicals ECP (T4MR-FRM-ENV-001-07) Incident and Event management (T4MR-MPR-SQE-010) AMS PESCP Induction
		Impacts on soil & water quality from contamination from spills and leaks during construction	Medium		Low	

ISSUE	CONSTRUCTION ACTIVITY/ ASPECT	POTENTIAL IMPACT	RISK LEVEL PRIOR TO MITIGATION	INDICATIVE MITIGATION MEASURES	RISK LEVEL FOLLOWING MITIGATION	DOCUMENTS/PROCEDURES/TRAINING REQUIRED
				▸ In the event synthetic material fibres are found on site, they would be handled and disposed of in accordance with the *National Code of Practice for the Safe Use of Synthetic Mineral Fibres*. ▸ The storage of hazardous materials, and refuelling/maintenance of construction plant and equipment, would be undertaken in clearly marked designated areas that are designed to contain spills and leaks. ▸ The storage of hazardous materials and dangerous goods would be undertaken in accordance with all relevant Australian Standards and regulatory requirements. ▸ Fuels, chemicals and liquids would be appropriately stored, in accordance with the following requirements: ✓ Would be 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. will not react with each other). The safety data sheets would be consulted in this regard. ✓ For liquids, a minimum bund volume requirement of 110% of the volume of the largest single stored volume, within the bund. ✓ 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 fuel, oil and chemical storage locations. ▸ The removal, handling and disposal of any asbestos containing materials would be undertaken by an appropriately licensed contractor, and in accordance with: ✓ How to Safely Remove Asbestos Code of Practice (Safe Work Australia, 2016). ✓ Code of Practice How to Manage and Control Asbestos in the Workplace (SafeWork NSW, 2016).		
BIODIVERSITY						
	▸ Clearing of native vegetation ▸ Management of trees to be retained	Clearing of native vegetation resulting in loss of fauna habitat, habitat fragmentation and loss of connectivity	High	▸ Employee education and training including inductions for staff, contractors and visitors to the site would include the biodiversity issues present at the site and so they know their role and	High	CONSTRUCTION BIODIVERSITY MANAGEMENT SUB-PLAN AMS-Clearing and Grubbing

ISSUE	CONSTRUCTION ACTIVITY/ ASPECT	POTENTIAL IMPACT	RISK LEVEL PRIOR TO MITIGATION	INDICATIVE MITIGATION MEASURES	RISK LEVEL FOLLOWING MITIGATION	DOCUMENTS/PROCEDURES/TRAINING REQUIRED
	▸ Pre-clearance surveys ▸ Tree Felling ▸ Dewatering of pools ▸ Biosecurity management ▸ Stockpile/haul road construction near vegetation ▸ Works near/in creeks and temporary crossings ▸ General earthworks near vegetation ▸ Vehicular movements ▸ Open excavation works ▸ Use of chemicals ▸ Noise impacts ▸ Bushfires	Direct impacts on threatened species and endangered populations and communities (terrestrial) and clearing	High	responsibilities in relation to the protection and/or minimisation of impacts to native biodiversity. ▸ The CEMP and construction plans would clearly document the location and full extent of clearing required. ▸ The management of trees in the vicinity of the construction zone would be consistent with the AS 4970-2009 Protection of trees on development sites (incorporating Amendment No. 1 (March 2010)). ▸ Pre-clearance surveys would be implemented within areas of woody native vegetation that are to be cleared. Pre-clearance surveys will be undertaken by suitably qualified and experienced ecologists and involve the following: ✓ The demarcation of areas approved for clearing to reduce risk of accidental clearing/ disturbance of surrounding native vegetation. ✓ The 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. ✓ The potential presence of threatened flora and fauna species, endangered populations and threatened ecological communities 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. ▸ Pre-clearance surveys would be implemented on the day prior to the disturbance of culverts with the potential to provide roosting habitat for micro-bats, and would involve: ✓ Handling of micro-bats would be kept to a minimum. ✓ If roosting bats are identified, the bats would be left undisturbed until after dusk when the bats have dispersed. When bats have dispersed, entrances would be blocked (for example, by covering the entrance with shade cloth). Any remaining roosting bats would be captured and released at a location to be agreed during pre-clearance surveys.	High	ECM's Flora and Fauna ECM (T4MR-FRM-ENV-001-06) Water, Erosion and Sediment ECM (T4MR-FRM-ENV-001-11) Hazardous Chemicals Procedure (T4MR-MPR-SQE-011) Hazardous Chemicals ECP (T4MR-FRM-ENV-001-07) Environmental Induction Construction Biodiversity Management Sub-Plan
		Increased potential for pest plants and animals during construction from movement of vehicles, machinery, and materials in and out of the site, particularly in greenfield sections as the Cumarra bypass	Medium		Low	
		Impacts to groundwater dependant ecosystems as a result of groundwater drawdown	Low		Low	
		Indirect impacts due to increased dust, sedimentation and erosion, noise and light.	Medium		Low	
		Disturbance to aquatic habitats and reduced water quality as a result of fugitive sediments and altered hydrology	High		Medium	
		Alterations to surface water flow regimes and interruptions to fish passage	Medium		Low	
		Native fauna mortality from vehicle strikes	Medium		Low	
		Domestic fauna mortality from vehicle strikes	Medium		Low	

ISSUE	CONSTRUCTION ACTIVITY/ ASPECT	POTENTIAL IMPACT	RISK LEVEL PRIOR TO MITIGATION	INDICATIVE MITIGATION MEASURES	RISK LEVEL FOLLOWING MITIGATION	DOCUMENTS/PROCEDURES/TRAINING REQUIRED
				✓ Where practicable, Disturbance to culverts and bridges that are micro-bat maternity sites should not occur until the end of the maternity period when the bats have dispersed. ▸ Tree clearing would be completed as close to the completion of pre-clearance surveys as practicable and 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. ✓ 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. ✓ 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 felled habitat trees would remain in place for a least one night to allow any fauna still present to move on. ✓ Works within the riparian zone would maximise, where practicable, the preservation of any existing vegetation and minimise disturbance.		

ISSUE	CONSTRUCTION ACTIVITY/ ASPECT	POTENTIAL IMPACT	RISK LEVEL PRIOR TO MITIGATION	INDICATIVE MITIGATION MEASURES	RISK LEVEL FOLLOWING MITIGATION	DOCUMENTS/PROCEDURES/TRAINING REQUIRED
				✓ Designs for works within or near watercourses would provide for the retention of natural functions and maintenance of fish passage in accordance with Why do fish need to cross the road? Fish passage requirements for waterway crossings (Fairfull and Witheridge, 2003). ▸ Management of sediment that has accumulated upstream to avoid sediment mobilisation. ▸ Any large woody debris in the development footprint would be relocated upstream or downstream in consultation with an appropriately qualified specialist. ▸ A dewatering procedure would be included, detailing methods for collection and relocation of protected fish and euthanasia of pest species. ▸ Any pools in watercourses that would be impacted by construction would be dewatered according to the dewatering procedure. ▸ Weeds would be managed and disposed of in accordance with the requirements of the NSW Biosecurity Act 2015 and/or the Weeds of National Significance Weed Management Guide. ▸ Any herbicides would be applied such that impacts on surrounding agricultural properties are avoided. ▸ Weed control mitigation and management strategies would be documented and implemented in accordance with relevant Biosecurity Act 2015 fact sheets, and the Department of Primary Industries vehicle biosecurity fact sheet, and include: ✓ Vehicles or equipment being brought onto the proposal site and/or travelling around the site must be inspected and cleaned prior to commencing work to limit the spread of seeds and plant material. ✓ Regular inspections to monitor the spread of weed species. ✓ Training of environmental personnel on the identification of target weed species. ✓ Any outbreak of priority weeds would be controlled and eradicated as required under the Biosecurity Act 2015 and relevant fact sheets, and as required by the Local Land Services and other relevant authorities. Weed control and eradication techniques may include: ✓ Spraying with herbicides. ✓ Physical removal e.g. chipping.		

ISSUE	CONSTRUCTION ACTIVITY/ ASPECT	POTENTIAL IMPACT	RISK LEVEL PRIOR TO MITIGATION	INDICATIVE MITIGATION MEASURES	RISK LEVEL FOLLOWING MITIGATION	DOCUMENTS/PROCEDURES/TRAINING REQUIRED
				✓ Minimisation of area available for weed infestation, through prompt revegetation of bare areas ▸ Areas of biodiversity value outside the preferred infrastructure site would be fenced or signposted, where appropriate, to prevent the unnecessary disturbance during the construction phase. ▸ Rehabilitation of disturbed areas would be undertaken progressively and in accordance with the rehabilitation strategy.		
NOISE & VIBRATION						
	▸ Site establishment ▸ Clearing and grubbing ▸ Demolition ▸ Earthworks and drainage ▸ Bridge work ▸ Piling ▸ Paving ▸ Saw cutting ▸ Rock hammering and drilling ▸ Quarrying ▸ OOHW	Noise impacts on local residents and sensitive receivers from construction activities including out of hours works	High	▸ The noise and vibration management sub-plan would detail how potential noise and vibration impacts would be mitigated and managed during construction. The plan would include the listed management measures. ▸ Where the noise and vibration levels are predicted to exceed the criteria after implementation of the general work practices, the additional mitigation measures detailed in the Construction Noise Strategy would be implemented. ▸ The requirements of relevant standards and guidelines, including AS 2436-2010 Guide to noise and vibration control on construction, demolition and maintenance sites and the Interim Construction Noise Guideline (DECC, 2009) would be addressed. ▸ The plan would also reference the complaints management procedures specified in the communication and complaints management plan ▸ Notification undertaken during construction would inform relevant stakeholders of the work locations and timing, and the potential for noise impacts. ▸ Construction sites and compounds located within 200 metres of sensitive receivers would be managed to minimise noise generating activities, including unnecessary shouting, loud stereos/radios, dropping of materials from height, throwing of metal items, and slamming of doors, particularly at the start and finish of shifts. ▸ For work undertaken in the vicinity of receivers where 'highly noise affected' impacts are predicted: ✓ High noise and vibration generating activities would only be carried out in continuous blocks, not exceeding three hours each, with a minimum respite period of one hour between each block. ✓ No more than four consecutive nights of high noise and/or vibration generating work would be undertaken over any seven-day period, unless otherwise approved by ARTC.	Medium	CONSTRUCTION NOISE AND VIBRATION MANAGEMENT SUB-PLAN SITE ESTABLISHMENT MANAGEMENT PLAN AMS Noise and Vibration ECP (T4MR-FRM-ENV-001-09) Complaints procedure Toolbox Talk - Interaction with the Community Site Induction
		Noise impacts on local residents and sensitive receivers from construction traffic	Medium		Medium	
		Damage to structures including heritage structures from vibration caused by construction activities	Medium		Low	

ISSUE	CONSTRUCTION ACTIVITY/ ASPECT	POTENTIAL IMPACT	RISK LEVEL PRIOR TO MITIGATION	INDICATIVE MITIGATION MEASURES	RISK LEVEL FOLLOWING MITIGATION	DOCUMENTS/PROCEDURES/TRAINING REQUIRED
				▸ Quieter and less vibration emitting construction methods would be used where reasonable and feasible. ▸ The noise levels of plant and equipment would have operating sound power or sound pressure levels that comply with the required criteria. ▸ Simultaneous operation of noisy plant within range of sensitive receivers would be avoided. ▸ The offset distance between noisy plant and adjacent sensitive receivers would be maximised as far as practicable. ▸ Plant used intermittently would be throttled down or shut down. ▸ Noise-emitting plant would be directed away from sensitive receivers. ▸ Stationary noise sources (such as pumps, compressors, fans etc.) would be enclosed or shielded whilst ensuring that the health and safety of workers is maintained. ▸ Consider site topography when situating plant and use structures (such as site shed placement, earth bunds, fencing, noise barriers) to shield receivers from noise. ▸ For construction sites located near sensitive receivers, plan traffic flow, parking and loading/unloading areas 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. ▸ Where practicable, delivery vehicles would be fitted with straps rather than chains for unloading. ▸ Attended vibration measurements would be undertaken at the commencement of vibration generating activities located in close proximity to sensitive receptors 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. ▸ Where construction is required within the safe working buffer distance, alternative work methods would be considered, such as the use of smaller equipment. If no alternative work method is feasible or reasonable, then compliance vibration monitoring would be undertaken. ▸ Trial vibration testing would be undertaken as required, prior to undertaking any high vibration activities. Trials would be undertaken in non-sensitive areas and at a range of distances from the source. The results of the trial monitoring would be compared against predicted vibration levels and the potential for impact refined, if deemed appropriate.		

ISSUE	CONSTRUCTION ACTIVITY/ ASPECT	POTENTIAL IMPACT	RISK LEVEL PRIOR TO MITIGATION	INDICATIVE MITIGATION MEASURES	RISK LEVEL FOLLOWING MITIGATION	DOCUMENTS/PROCEDURES/TRAINING REQUIRED
				▸ The trial period may also be used to determine the effectiveness of source-based mitigation measures, such as changing the operating speed of the vibratory roller to generate a higher frequency of vibration, which may allow for a higher vibration threshold at the structure. ▸ For identified properties within buffer distances, or where pre-construction monitoring indicates that vibration levels from construction activities would exceed the target levels, a dilapidation survey of potentially affected structures would be undertaken to enable post-construction verification.		
AIR QUALITY AND DUST						
	▸ Site establishment ▸ General earthworks ▸ Vegetation clearing ▸ Bulk earthworks ▸ Spoil handling ▸ Stockpiling ▸ Vehicular movements ▸ Material haulage ▸ Quarrying ▸ Vehicle emissions ▸ Handling of chemicals, waste and hazardous goods	Generation of dust during construction (from exposed soil/stockpiles, blasting, excavation and vehicles movements).	Medium	▸ The air quality and dust management sub plan would detail how potential impacts on air quality would be mitigated and managed during construction. ▸ Shade cloth would be fastened to the perimeter fence on the proposal site where construction is being undertaken within 100 metres of sensitive receptors to minimise dust transported from the site during construction. ▸ Dust generation would be monitored visually, and where required, dust control measures such as water spraying would be implemented to control the generation of dust. ▸ Dust suppressants would be applied to stockpiled dirt if the pile is inactive for extended periods. ▸ Access points would be inspected to determine whether sediment is being transferred to the surrounding road network. If required, sediment would be promptly removed from roads to minimise dust generation. ▸ Works (including the spraying of paint and other materials) would be suspended during strong winds or in weather conditions where high levels of dust or airborne particulates are likely. ▸ Any exposed surfaces would be stabilised as soon as practicable. ▸ In locations where nearby sensitive receivers may be affected, adopt a site ‘shut down and cover up’ policy during periods of extreme weather conditions, e.g. high winds. ▸ 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. ▸ 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. Surveillance would be undertaken to identify any vehicle, plant or equipment that is causing visible emissions. If any defective vehicles, plant or equipment are	Low	SITE ESTABLISHMENT MANAGEMENT PLAN AMS CONSTRUCTION SOIL AND WATER QUALITY MANAGEMENT SUB-PLAN ESCP Dust and Air Quality ECM (T4MR-FRM-ENV-001-05) N2NS Project Complaints Procedure Site Induction Toolbox Talk – Interaction with the Community Toolbox Talk – Access and Careful Driving
		Emissions from vehicles or plant during construction	Medium		Low	
		Odours/emissions from disturbance of contaminated soils	Low		Low	

ISSUE	CONSTRUCTION ACTIVITY/ ASPECT	POTENTIAL IMPACT	RISK LEVEL PRIOR TO MITIGATION	INDICATIVE MITIGATION MEASURES	RISK LEVEL FOLLOWING MITIGATION	DOCUMENTS/PROCEDURES/TRAINING REQUIRED
				identified, operation of this machinery would cease and service/maintenance would be undertaken. ▸ Advance warning would be provided to sensitive receivers in relation any significant dust generating activities undertaken in close proximity to sensitive receptors, including stock		
HYDROLOGY & FLOODING						
	▸ Waterway crossings ▸ Transverse drainage ▸ General earthworks and construction	Impact of flooding on unprotected areas during construction resulting in wash-outs or erosion	Medium	▸ Construction planning and the layout of construction work sites and compounds would be carried out with consideration of overland flow paths and flood risk, avoiding flood liable land and flood events where possible. ▸ Consultation would be undertaken with relevant stakeholders (including landowners/occupants) prior to construction, and appropriate approvals and agreements would be sought for the extraction of water. Monitoring would be undertaken during extraction to ensure volumes stipulated by license requirements and/or private landholder agreements are not exceeded. ▸ Water used during construction would be sourced from various sources to minimise hydrologic impacts at a single location. ▸ Groundwater monitoring would be undertaken at each extraction location during the period of the extraction and at a less frequent period following the cessation of extraction at each location to identify the groundwater recovery process. ▸ The monitoring process and program would include: ✓ Installation, if not already present, of a water level monitor at each agreed and approved extraction location prior to any extraction being undertaken. ✓ Prior to each load of extracted water, the groundwater level would be measured and recorded, along with the time and date of the start of the extraction. ✓ For each load of extracted water, the extracted volume of water and the groundwater level would be recorded at the completion of the extraction. ✓ The above data would indicate if there is a significant drawdown in the groundwater level or rebound in groundwater level between extractions.	Medium	CONSTRUCTION SOIL AND WATER MANAGEMENT SUB-PLAN CONSTRUCTION FLOOD EMERGENCY MANAGEMENT PLAN AMS ESCP Sensitive Area Plans Establish designs for temporary waterway crossings. Site Induction Water quality, Erosion and Sediment ECM (T4MR-FRM-ENV-001-11) Water Discharge Permit (T4MR-FRM-ENV-001-01) RMS Stockpile Management Protocol and Stockpile Site Management Guideline Toolbox Talk - ESC
		Temporary impact to the behaviour of local surface water systems during construction	Medium		Low	
		Changes to flow patterns and altered hydrology due to construction in water courses	Medium		Low	
		Blockages of flow paths affecting low flows through construction within watercourses and through erosion and sedimentation control structures	Medium		Medium	
		Sedimentation and changes to geomorphology (aggradation in bed channels) in watercourses	High		Low	
ABORIGINAL HERITAGE						
	▸ Early works including non-substantial construction activities e.g. services relocations	Disturbance of known or unidentified items or places of Aboriginal heritage significance	High	▸ The heritage management sub-plan would detail how potential impacts on heritage would be mitigated and managed during construction. ▸ The plan would be prepared in consultation with relevant agencies and Aboriginal groups for management of Aboriginal heritage, listed non-	Medium	CONSTRUCTION HERITAGE MANAGEMENT SUB-PLAN SITE ESTABLISHMENT MANAGEMENT PLAN AMS

ISSUE	CONSTRUCTION ACTIVITY/ ASPECT	POTENTIAL IMPACT	RISK LEVEL PRIOR TO MITIGATION	INDICATIVE MITIGATION MEASURES	RISK LEVEL FOLLOWING MITIGATION	DOCUMENTS/PROCEDURES/TRAINING REQUIRED
	▸ Planned salvage of Aboriginal heritage items ▸ Clearing of vegetation ▸ Initial removal of topsoil ▸ Construction of site compounds and stockpile areas ▸ Temporary access roads			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. ▸ 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. ▸ 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 the Office of Environment and Heritage. Procedures and notification requirements for potential human remains in accordance with relevant guidelines. ▸ The unexpected finds procedure would define requirements relating to potential human skeletal remains, in accordance with relevant guidelines, including: ○ Policy Directive: Exhumation of Human Remains (NSW Health, 2013) ○ Manual for the identification of Aboriginal remains (DEC, 2006b) ○ Skeletal Remains: Guidelines for Management of Human Skeletal Remains under the Heritage Act 1977 (NSW Heritage Office, 1998). ▸ During pre-work briefings, employees would be made aware of the unexpected finds procedures and obligations under the *National Parks and Wildlife Act 1974*.		CONSTRUCTION NOISE AND VIBRATION MANAGEMENT PLAN NSW Unexpected Heritage Items (Heritage Procedure) Heritage ECM (T4MR-FRM-ENV-001-08) Sensitive Area Plans Toolbox Talk – Heritage Site Induction
NON-ABORIGINAL HERITAGE						
	▸ Early works including non-substantial construction	Impacts on listed heritage items or items with heritage values due to demolition, altered historical arrangements and access, visual	Medium	▸ To minimise the potential for accidental impacts, the boundary of Moree, Edgeroi, Bellata, and Gurley stations, Edgeroi Woolshed, and the	Low	CONSTRUCTION HERITAGE MANAGEMENT SUB-PLAN AMS

ISSUE	CONSTRUCTION ACTIVITY/ ASPECT	POTENTIAL IMPACT	RISK LEVEL PRIOR TO MITIGATION	INDICATIVE MITIGATION MEASURES	RISK LEVEL FOLLOWING MITIGATION	DOCUMENTS/PROCEDURES/TRAINING REQUIRED
	activities e.g. services relocations ▸ Planned salvage of Aboriginal heritage items ▸ Clearing of vegetation ▸ Initial removal of topsoil ▸ Construction of site compounds and stockpile areas ▸ Temporary access roads	amenity, landscape and vistas, curtilage, subsidence and architectural noise treatment		surveyor's trees, would be marked on plans and clearly defined during construction. ▸ In the event that unexpected archaeological remains, relics, potential heritage items, or human remains are discovered during construction, all works in the immediate area would cease, and the unexpected finds procedure would be implemented.		CONSTRUCTION NOISE AND VIBRATION MANAGEMENT PLAN NSW Unexpected Heritage Items (Heritage Procedure) Heritage ECM (T4MR-FRM-ENV-001-08) Sensitive Area Plans ENVP15-Heritage Discovery and Protection Toolbox Talk – Heritage Site Induction
		Damage to heritage items from vibration during construction or operation	High		Medium	
		Disturbance of known or unidentified places of non-Aboriginal heritage significance	High		Medium	
VISUAL AMENITY						
	▸ General earthworks and construction ▸ Stockpiling ▸ Open excavation works ▸ Clearing of vegetation ▸ Construction site ▸ Compounds ▸ Rehabilitation of disturbed land ▸ Evening / night works	Impacts to nearby residents and business owners due to the presence of construction compounds and activities	Low	▸ Temporary and any permanent lighting would be designed and sited to comply with: ○ AS 4282-1997 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). ▸ If required, spoil 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. ▸ Work sites would be maintained in a clean and tidy condition at all times. ▸ Temporary hoardings, barriers, traffic management and signage would be removed when required. ▸ On completion of construction, all work sites and other land occupied temporarily would be rehabilitated in accordance with the rehabilitation plan.		SITE ESTABLISHMENT MANAGEMENT PLAN Water quality, Erosion and Sediment ECM (T4MR-FRM-ENV-001-11) AMS Sensitive Area Plans Site Induction
		Light impacts from out-of-hours work during construction	Medium			
		Adverse impacts on landscape character during construction, particularly in greenfield areas	Medium			
SOCIO ECONOMIC, LAND USE AND PROPERTY						
	▸ Early works including non-substantial construction activities e.g. services relocations ▸ General earthworks, structures and construction ▸ Stockpiling ▸ Clearing of vegetation ▸ Construction site ▸ Compounds	Temporary impacts on land use during construction including impacts to local businesses. Impacts include reduced access, reduced amenity, loss of privacy.	High	▸ Contact details for a 24-hour project response line and email address would be provided for ongoing stakeholder contact throughout the construction period. ▸ Provision of accurate public information signs while work is in progress. ▸ Staging of works would be undertaken to minimise disruption, in consultation with relevant stakeholder groups, to minimise impacts to community activities and functions	Medium	COMMUNITY AND STAKEHOLDER ENGAGEMENT MANAGEMENT SUB-PLAN CONSTRUCTION AIR QUALITY MANAGEMENT SUB-PLAN AMS CONSTRUCTION NOISE AND VIBRATION MANAGEMENT PLAN
		Positive impacts due to job creation.	Positive			
		Impacts on services and utilities during construction resulting in a loss of services.	Low		Low	

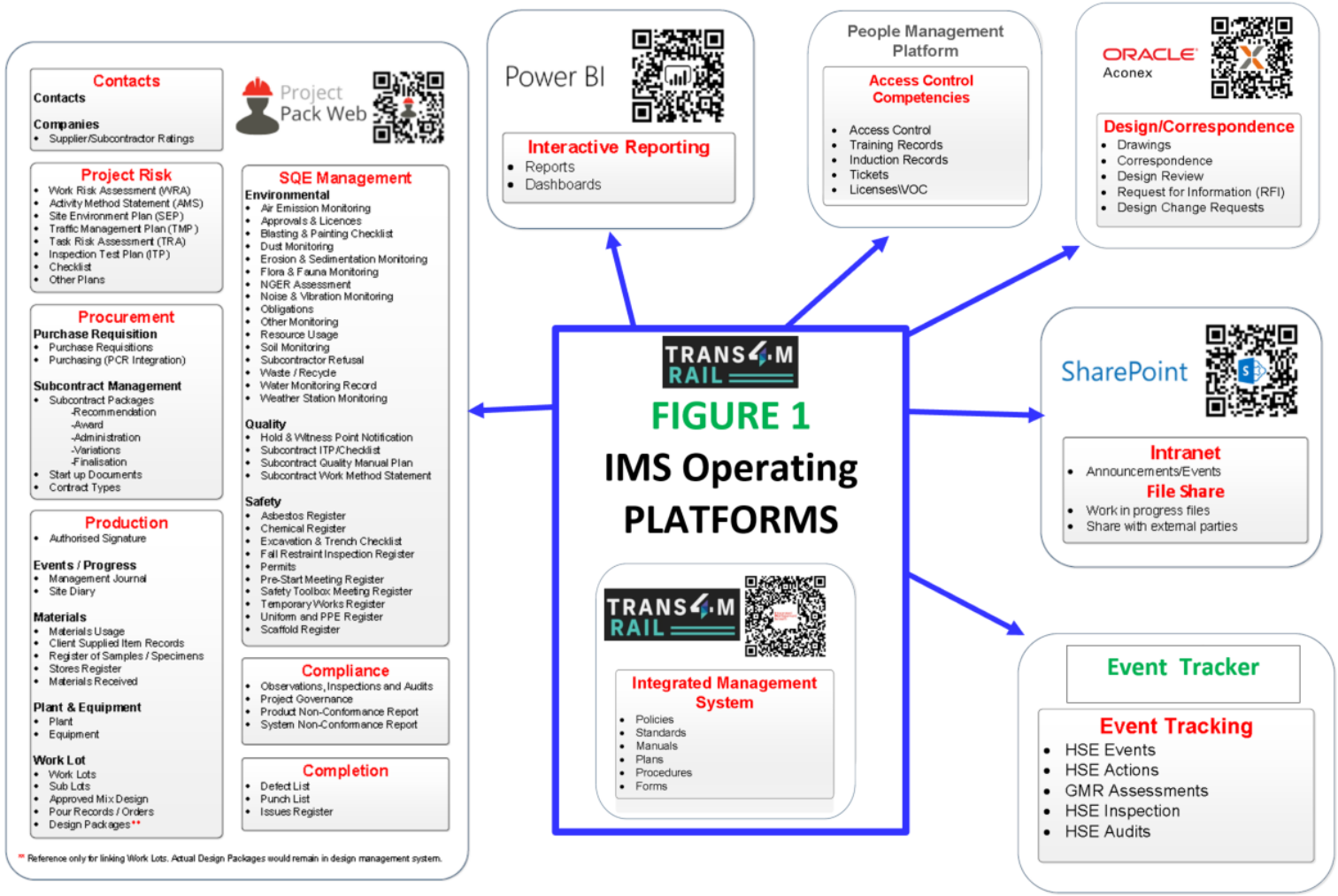
ISSUE	CONSTRUCTION ACTIVITY/ ASPECT	POTENTIAL IMPACT	RISK LEVEL PRIOR TO MITIGATION	INDICATIVE MITIGATION MEASURES	RISK LEVEL FOLLOWING MITIGATION	DOCUMENTS/PROCEDURES/TRAINING REQUIRED
	▸ Rehabilitation of disturbed land ▸ Evening / night works	Impacts on the use and functionality of community facilities	Low	▸ Relevant stakeholders would be notified regarding service disruptions in accordance with the communication management plan. ▸ Complaints would be managed according to the following procedure: ▸ Details of all complaints received will be recorded. ▸ A detailed written response will be provided to the complainant within 14 calendar days. ▸ Property owners/occupants would continue to be consulted during construction ▸ The rehabilitation strategy would include measures to restore disturbed sites as close as possible to the pre-construction condition or better, or to the satisfaction of landowners. ▸ Rehabilitation of disturbed areas would be undertaken progressively, consistent with the rehabilitation strategy and individual property agreements (where relevant) ▸ Local residents, businesses and other stakeholders would be notified before work starts in accordance with the communication management plan and would be regularly informed of construction activities. ▸ Where practicable, the workforce would include workers sourced locally, and opportunities for training potential local employees would be provided. This would include exploring opportunities for local Indigenous participation in consultation with local Indigenous service providers. ▸ A zero-tolerance policy relating to anti-social behaviour would be adopted for work sites. ▸ ARTC would support local employment through the Inland Rail Academy to leverage training programs, upskill local residents, educate young people and connect businesses with Inland Rail opportunities and key regional industries. ▸ Local suppliers would be identified and approached for procurement of goods and services where practicable. ▸ Where practicable, workforce housing and accommodation would be undertaken consistent with the accommodation plan. ▸ A communication management sub-plan would be prepared 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, and local bus operators ✓ consultation actions in relation to access arrangements and servicing requirements	Low	CONSTRUCTION SOIL AND WATER QUALITY MANAGEMENT SUB-PLAN PESCP Water quality, Erosion and Sediment ECM (T4MR-FRM-ENV-001-11)
		Impacts on agricultural land use from construction activities including impacts from reduced access, noise and air pollution.	Medium		Medium	
		Impacts on land use as a result of property acquisition.	Medium		Medium	
		Increased demand for accommodation driving up prices for local residents and potentially causing a shortage of emergency accommodation.	Medium		Medium	
		Increased trade for food and accommodation during construction	Positive			

ISSUE	CONSTRUCTION ACTIVITY/ ASPECT	POTENTIAL IMPACT	RISK LEVEL PRIOR TO MITIGATION	INDICATIVE MITIGATION MEASURES	RISK LEVEL FOLLOWING MITIGATION	DOCUMENTS/PROCEDURES/TRAINING REQUIRED
				✓ complaints handling procedure ✓ procedure to notify adjacent land users for any changed conditions during the construction period such as traffic, pedestrian or driveway access.		
SUSTAINABILITY						
		Increased electricity and fuel use during construction and operation	Medium	▸ Dedicated full-time Project Sustainability Manager resource for the Works ▸ N2NS Project specific sustainability objectives will be developed to align with the IR Program sustainability objectives ▸ Sustainability objectives will be considered throughout the Tender Submission. E.g. engage with their supply chain regarding the sustainability objectives and opportunities ▸ Procurement would be undertaken in accordance with the Inland Rail Sustainable Procurement Policy (ARTC, 2018), the Sustainable Procurement Guide (Australian Government, 2013) and the NSW Government Resource Efficiency Policy (OEH, 2014b). ▸ Sustainability reporting (and corrective action where required) would be undertaken during construction in accordance with the sustainability management plan.	Medium	SUSTAINABILITY MANAGEMENT PLAN
		Increased demand on local and regional resources during construction.	Medium Medium		Medium Medium	
CLIMATE CHANGE RISK						
	▸ General earthworks, structures and construction ▸ Stockpiling ▸ Clearing of vegetation ▸ Construction site ▸ Compounds ▸ Rehabilitation of disturbed land	Greenhouse gas emissions from combustion of fuels during plant/vehicle operation.	Medium	▸ Emergency response sub-plan would be developed as part of the CEMP. The plan would include measures to mitigate potential impacts from emergency situations, including those associated with climate change such as bushfires and extreme weather.	Medium	CEMP FLOOD AND EMERGENCY MANAGEMENTSUB-PLAN
		Increased energy consumption associated with the operation of site compounds	Medium		Medium	
SPOIL AND WASTE						
	▸ General earthworks, structures and construction ▸ Vegetation clearing ▸ Open excavation works ▸ Spoil handling ▸ Stockpiling ▸ Quarrying ▸ Material haulage ▸ Handling of chemicals, waste and hazardous goods	Inappropriate management of waste generated during construction resulting in excessive waste being directed to landfill.	Low	▸ Waste segregation bins (colour coded as listed in Table 24.7 of the EIS) would be located at key construction compounds where practicable, to facilitate segregation and prevent cross contamination. ▸ Resource management hierarchy principles would be followed: ○ Avoid unnecessary resource consumption as a priority. ○ Avoidance is followed by resource recovery (including reuse of materials, reprocessing, recycling and energy recovery). ○ Disposal is undertaken as a last resort. ▸ Waste material, including soil and spoil to be taken off site, would be classified and managed in accordance with the Waste Classification Guidelines (EPA, 2014) and would be disposed of in accordance with the POEO Act.	Low	CONSTRUCTION WASTE MANAGEMENT PLAN SITE ESTABLISHMENT MANAGEMENT PLAN AMS ENVP09 - Spill Management Site Induction

ISSUE	CONSTRUCTION ACTIVITY/ ASPECT	POTENTIAL IMPACT	RISK LEVEL PRIOR TO MITIGATION	INDICATIVE MITIGATION MEASURES	RISK LEVEL FOLLOWING MITIGATION	DOCUMENTS/PROCEDURES/TRAINING REQUIRED
				▸ All waste documentation would be collated and maintained on file in accordance with these guidelines. • Waste material would not to be left on site 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 and other relevant legislation and guidelines. • The removal, handling and disposal of any asbestos containing materials would be undertaken by an appropriately licensed contractor, and in accordance with: ○ How to Safely Remove Asbestos Code of Practice (Safe Work Australia, 2016) ○ Code of Practice How to Manage and Control Asbestos in the Workplace (SafeWork NSW, 2016)		
HEALTH AND SAFETY						
		Impacts from transport, storage and use of hazardous substances and dangerous goods.	Medium	▸ 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. This would include a requirement to provide a minimum bund volume of 110% of the largest single stored volume within the bund. ▸ A 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 SEPP 33 threshold levels. ▸ 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 work health and safety management plans and safe work method statements would be developed and implemented in accordance with work health and safety requirements ▸ The plan would support the contamination and hazardous materials sub-plan ▸ 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). The plans would include:	Low	FLOOD AND EMERGENCY MANAGEMENTSUB-PLAN SWMS
		Reduced safety for road users and pedestrians during construction particularly in the vicinity of houses, businesses and townships.	High		Medium	
		Adverse health from noise and air pollution during construction.	Medium		Low	
		Potential for proposal to exacerbate bushfires (storage of dangerous goods, construction site issues such as smoking or hot works).	Low		Low	
		Potential for environmental damage resulting from a bushfire passing through the site (e.g. explosion of fuel storages/tanks, vehicles and machinery).	Low		Low	

ISSUE	CONSTRUCTION ACTIVITY/ ASPECT	POTENTIAL IMPACT	RISK LEVEL PRIOR TO MITIGATION	INDICATIVE MITIGATION MEASURES	RISK LEVEL FOLLOWING MITIGATION	DOCUMENTS/PROCEDURES/TRAINING REQUIRED
				✓ 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.		

Appendix E HSEQS Operating Platforms



Appendix F Trans4mRail Environment Incident Severity Classification t\Table (T4MR-APP-SQE-010-03)

Environment Incident Severity Classification

Classify according to the most severe outcome

Environment Impact Type		Report Only Pollution or degradation which is not related to John Holland operations	Class 3 Pollution or degradation which has low severity impacts on the community and/or environment in the short-term (< 1 month duration) and is fully reversible with no residual impacts.	Class 2 Pollution or degradation which has moderate severity impacts on the community and/or environment (1 - 3 months duration) but is fully reversible with no residual impacts.	Class 1 Pollution or degradation which has high severity impacts on the community and/or environment and may have irreversible residual impacts.
DMR	Dirt and Mud on Roads	Tracking of soil onto roads resulting from an event that are not related to John Holland activities.	Tracking of soil onto local roads requiring minor clean-up: • Exit controls are in place but ineffective (e.g. rumble grids, wheel-washes) • Clean up regime in place by ineffective (e.g. street-sweepers). • Occasional failure by trucks to cover loads in accordance with project requirements	Tracking of soil material onto local roads requiring significant resources for clean-up works. • Exit controls are required but not in place • Clean up regime required but not in place • Repeated failure by trucks to cover loads in accordance with project requirements • Dangerous road surface has potential to result in an accident • Warning letter or investigation by Local Government or State Government Agency	Tracking of soil onto roads resulting in major clean-up works and major delays to arterial traffic. • Accident resulting from dangerous conditions caused by soil tracked from project site or spoil lost from trucks • Local Government or State Government Agency restricts access/egress to site, significantly affecting program

Environment Environment Incident Severity Classification

ESC	Erosion and Sediment Control	Failure or lack of erosion and sediment controls resulting in alteration of landscape topography external to John Holland site and not related to John Holland activities	Failure or lack of erosion and sediment controls resulting in one or more of the following: • Minor reversible alteration of landscape topography. • Erosion causing minor offsite impacts that are immediately reversible. • Placement of excavated soil or low toxicity materials in a location where it could potentially result in pollution (3P).	Failure or lack of erosion and sediment controls resulting in one or more of the following: • Significant release of sediment off-site into drains or receiving waters, causing significant impacts that are reversible in less than 3 months. • Freshwater or marine water disruptions (up to 3 months). • Placement of contaminated wastes or medium toxicity materials in a location where it could potentially result in pollution (2P).	Failure or lack of erosion and sediment controls resulting in one or more of the following: • Significant irreversible damage to ecological systems. • Erosion causing major irreversible impacts to surrounding environments. • Major clean-up works requiring significant resources (≥ 3 months). • Placement of high toxicity materials in a drainage line or adjacent to a waterway resulting in prosecution (1P).
ASS	Acid Sulphate Soils	Exposure, lack of containment or poor management of acid sulphate soils external to John Holland site and resulting from an event not related to John Holland activities.	Minor exposure of acid sulphate soils: • Unauthorised entry to known acid sulphate soils site. • Exposure of previously unidentified acid sulphate soils during works e.g. during excavation, clear and grub • Noted failure of protective bunding – no run-off resulting	Exposure, lack of containment or poor management of acid sulphate soils: • Significant downstream ecological impact – small fish kill event, or decreased plant productivity; • Runoff from acid sulphate soils entering water bodies or leaching into groundwater; • Demonstrated short term impact to aquatic habitat • Minor human health effects e.g. odour causing nausea,	Mismanagement of acid sulphate soils results in high level or catastrophic downstream impacts: • Major ecological damage e.g. significant fish kill incident • Demonstrated long term changes in aquatic habitat • Significant damage to infrastructure

			• Localised soil degradation	minor skin irritation Disruption of public recreational activities.	• Significant damage to aquatic
CON	Contamination of Land & Groundwater (Inc. spills & contaminated soils)	Spill of ecotoxic or hazardous materials (hydrocarbons, chemicals, effluent, contaminated materials) to land resulting from an event not related to John Holland activities Unexpected find or management of contaminated soil additional to baseline investigation that is not related to John Holland activities	Minor spill of ecotoxic or hazardous materials (hydrocarbons, chemicals, effluent, contaminated materials) to land. • No residual contamination of land; • Spill contained to defined area(s) within site or workplace; • No significant clean-up required other than removal of contaminated material to land farm or approved waste area; • Release of low ecotoxicity substances (refer SDS).	Significant spill of ecotoxic or hazardous materials (hydrocarbons, chemicals, effluent, contaminated materials) to land. Some residual contamination of land; • Spill contained to defined area(s) within site or workplace; • Significant clean-up required over and above removal of contaminated material to land farm or approved waste area; • Release of moderate ecotoxicity substances (refer SDS); • Spill of a volume that must be reported to a regulatory body.	Major spill of ecotoxic or hazardous materials (hydrocarbons, chemicals, effluent, contaminated materials) to land. • Persistent contamination of land; • Residual effects experienced offsite; • Extensive clean-up required; • Release of high ecotoxicity substances (refer SDS);
WAT	Discharges to Surface Waters	Discharge of pollutants to surface water resulting from an event not related to John Holland activities.	Minor pollutant discharge to surface water, no permanent impact on water resources e.g. • Oil spill escapes into offsite stormwater system where it is contained and does not enter a flowing watercourse;	Significant and/or persistent discharge to water; or Short-term/localised impact on water resources e.g. • Oil spill escapes into offsite flowing watercourse; • Uncontrolled discharge from sedimentation basin or site drainage system above	Major and/or multiple discharges of pollutant to water outside site or workplace. Wide spread or long-term impact (=> 3 months) on water resources e.g. • Acid drainage run-off from mining operations; • Tailings dam failure;

			• Controlled discharge from sedimentation basin or site drainage system above allowable limits;	allowable limits (eg pumping untreated water to receiving waters);	• Extensive contamination / pollution of waterways or water catchment areas.
NVL	Noise, Vibration & Light Escape	Generation of, noise, vibration, light or odour exceeding documented limits or controls and causing occasional inconvenience or disruption to community and the environment resulting from an event not related to John Holland activities	Unplanned generation of, noise, vibration, light or odour exceeding documented limits or controls and causing occasional inconvenience or disruption to community and the environment e.g. • Occasional unplanned breach of noise, vibration or light criteria at sensitive receivers e.g. concrete pour takes longer than planned. • Substantiated public complaint satisfactorily resolved at project level • 'Please Explain' received from Regulatory Authority satisfactorily, resolved at project level	Generation of, noise, vibration, light or odour causing sustained periods of inconvenience or disruption to community and the environment e.g. • Sustained noise, vibration or light levels causes confirmed impact to sensitive receivers e.g. nesting or roosting birds, hospitals, schools. • Noise, vibration or light levels continuously in excess of set criteria • Vibration causes confirmed minor damage to property. • Regulatory Authority investigation requiring intervention at Regional or Group level	Generation of, noise, vibration, light or odour causing severe damage to property outside site or workplace, or the environment or severe disruption to the community e.g. • Noise generated causes damage to hearing and human health; • Vibration causes confirmed substantial damage to property.
AIR	Dust, Odour & Emissions to Air	Discharge of pollutant to atmosphere resulting froman event not related to John Holland activities	Minor discharge of pollutant to atmosphere outside site or workplace or in breach of a documented obligation e.g. • Overfill of cement silo, cement dust release; • Occasional/sporadic exceedences of air quality criteria.	Major or persistent releases of pollutant to atmosphere outside site or workplace or in breach of a documented obligation e.g. • Regular exceedences of air quality criteria. • Nuisance dust levels requiring significant offsite clean-up (eg cleaning of inside of houses)	Major or persistent discharge of hazardous pollutant to atmosphere outside site or workplace e.g. • Explosion or leak of hazardous gas; • Possible or actual evacuation of local vicinity; • Continuous exceedence of air quality criteria.

			• Nuisance dust requiring minimal or no offsite clean-up (eg issue of carwash voucher) • Refrigerant gas accidentally released to the atmosphere	• Odour complaints requiring relocation of material or significant changes to waste, earthworks of stockpile management • Refrigerant gas purposely released to atmosphere	
WAS	Waste (solids, liquids, hazardous & non-hazardous classified/ prescribed, etc.) Note: Refer to local dangerous goods legislation for appropriate manifest levels requiring Licences, placarding, etc.	Incorrect storage, transport, treatment or disposal of waste not related to John Holland activities	Unauthorised storage, transport, treatment or disposal of a minor, non-trivial quantity (up to1000 litres, 1000 kg or 1.0 m3) of non-regulated waste in contravention of regulations or project waste management requirements. Examples include: • Disposal of materials in an incorrect waste facility or outside designated area (lay down/landfill areas).	Unauthorised storage, transport, treatment or disposal of a moderate quantity (up to 10,000 litres, 10 tonnes or 10.0 m3) of non-regulated waste, in contravention of regulations or project waste management requirements. Unauthorised storage, transport, treatment or disposal of a minor quantity (refer to legislation) of regulated waste (eg classified, prescribed, hazardous) in contravention of Waste Management Legislation Examples include: • Failure to meet regulatory requirements for environmentally hazardous waste disposal. • Repeated dumping of non-hazardous waste in an	Unauthorised storage, transport, treatment or disposal of a significant quantity (=> 10,000 litres, 10 tonnes or 10.0 m3) of non-regulated waste, in contravention of regulations or project waste management requirements. Unauthorised storage, transport, treatment or disposal of a significant quantity (refer to legislation) of regulated waste (eg classified, prescribed, hazardous) in contravention of waste management Legislation Examples include: • Reasonable probability of being detrimental to public health.

				incorrect waste facility or outside designated areas.	
HER	Aboriginal & European Cultural Heritage	Damage to heritage structures resulting from an event not related to John Holland activities	**European Heritage** • Minor accidental, repairable damage to commonplace structures, or minor infringement of cultural values. **Aboriginal Heritage** • Entering of protected sites	**European Heritage** • Significant damage to registered structures / items of cultural / heritage significance, **Aboriginal Heritage** • Damage to registered sites of significance, to artefacts, or significant infringement of known cultural values / sacred locations.	**European Heritage** • Destruction or irreparable damage to highly valued structures / items / locations of cultural or heritage significance or value. **Aboriginal Heritage** • Destruction or irreparable damage to artefacts, human remains or spiritual overlay.
F&F	Flora & Fauna (inc. weeds & pathogens)	Damage to flora or fauna resulting from an event not related to John Holland activities Introduction or spread of weeds or disease resulting from an event not related to John Holland activities	Minor loss or impact on land or water based flora, fauna & habitat, but no negative effect on the eco-system or habitat. Limited damage to an area of land of no local ecological significance e.g. • Death of a native animal or species, that is not identified as a pest; • Accidental felling of a tree;	Medium impact on land or water based flora, fauna and habitat. Short-term impact on eco-system that is of regional significance. Damage that can be remediated e.g. • Partial destruction of native habitat leading to impact on local species numbers or	Major loss or impact on land or water based flora or fauna. Destruction of ecologically significant habitat that is of national significance. Endangering viability of species, habitat or eco-system. Damage that cannot be remediated without risk of long-term loss e.g.

			• Over clearing of an area that is not native bush; • Localised spread of weeds or pathogens material within site.	disruption to breeding cycles; • Short-term disruption of protected fauna breeding cycle. • Unapproved clearing of an area of remnant native vegetation/Declared Threatened or Rare flora	• Unapproved destruction of habitat in a national park or similar; • Death of an animal or species that is in danger of extinction; • Clearing of a protected area of Declared Rare Flora in excess of 100m2, or the destruction of more than 10 individual specimens of DRF • Long term or permanent disruption of protected fauna breeding cycle
RES	Impact on Availability of Resources	Temporary unplanned disruption to the availability of resources to the community or the environment resulting from an event not related to John Holland activities	Operations cause temporary unplanned disruption to the availability of resources to the community or the environment. Minor impact on other energy / natural resource users outside site or workplace. Examples include: • Rehabilitation area disturbed. • Land-use changed without approval from Client or Regulator • Loss of water supply volume to localised minor environment due to continuous moderate	Operations cause substantial unplanned disruption to the availability of resources to the community or the environment. Significant impact on other energy / natural resource users outside site or workplace. Examples include: • Water usage / de-watering by operations causes loss of pressure or flow to local / adjacent water bores • Disturbance to priority/rare flora • Moderate to major loss of growth medium resources	Operations cause persistent unplanned disruption to the availability of resources to the community or the environment. Exhaustion or serious degradation of natural resources for future use e.g. • Activities cause acid drainage run-off & subsequent deforestation of surrounding land • Operations cause loss of flow in natural watercourses • Continuous loss of supply water volume from non-licensed

			leakage from reservoirs, pipelines, tanks, etc.	• Unrecoverable loss of stockpiled growth medium (e.g. buried, flood) • Loss of minor water supply volume off-site or continuous loss of supply water volume from non-licensed discharge point.	discharge point, with evidence of supply water contamination

Environment Environment Incident Severity Classification

Appendix G DRAFT Environmental Control Plans

NOTE: Appendix G will be populated following the finalisation of the Project's Environmental Control Plans and the Secretary's approval of all sub-Plans. At such time the CEMP (specifically Appendix G) will be updated and resubmitted to the Project ER and approved as a minor amendment.

2600-0018
N2NS-SP1

Flora And Fauna Environmental Control Map

Document No: 7632-T4MR-PL-PES-010

Recommend Documents to be Read in Conjunction
This management plan is to be read in conjunction with the Construction Environment Management Plan, (7632-T4MR-PL-PES-001) and;
Water Quality. Erosion and Sediment Control Map,(7632-T4MR-PL-PES-008)

Distribution
There are no restrictions on the distribution or circulation of this ECP within T4MR.

	Uncontrolled Copy
Authorised By:	Jon Holmes, T4MR Project Director
Date:	05/02/2021

Revisions
Draft issues of this document shall be identified as Revision A, B, C etc. Upon initial issue (generally Contract Award) this shall be changed to a sequential number commencing at Revision 0. Revision numbers shall commence at Rev. 1, 2 etc.

DATE	REV	DETAILS OF CHANGE	SECTION	PREPARED BY	REVIEWED & APPROVED BY
28/10/2020	0	Issue for Construction	All	Pippa Donaldson	Jon Holmes
05/02/2021	1	Issued for Construction (Format and Rebrand Update)	All	Pippa Donaldson	Jon Holmes

1.0 Scope

This Environmental Control Plan is applicable to all construction phase works associated with the Inland Rail Narrabri to North Star SP1 Project (N2NS), (T4MR and subcontractors).

2.0 Objective

- Minimum disturbance to fauna and flora; including habitation, reproductive cycles, and availability of selective food sources;
- Negative impacts on Commonwealth or State listed endangered species or endangered ecological communities outside of the project scope;
- Minimise the loss of flora and ecological communities within, and bordering on, the project area, during construction; and
- Flora and fauna management practices must meet all legislative and contractual requirements.

3.0 Performance Criteria

3.1 General

1. No fauna fatalities resulting from construction activities.
2. Minimise disturbance to onsite fauna by implementing recover and rescue to any injured or orphaned species during construction.
3. No disturbance of native flora outside of the project scope.
4. No disturbance to native flora within the project scope which is outside of project approval conditions.
5. 100% Compliance with T4MR Global Mandatory Requirements

3.2 Listed Flora and Fauna.

Flora / Fauna	Commonwealth Listing	State Listing	Other Notes
Grey-crowned babbler *(Pomatostomus temporalis temporalis)*		Vulnerable	
Varied sittella *(Daphoenositta chrysoptera)*;		Vulnerable	
Koala *(Phascolarctos cinereus);*	Vulnerable	Vulnerable	
Grey-headed flying-fox *(Pteropus poliocephalus);*	Vulnerable	Vulnerable	
Eastern bentwing-bat *(Miniopterus schreibersii oceanensis)*		Vulnerable	
Little pied bat (*Chalinolobus picatus*);		Vulnerable	
Yellow-bellied sheathtail-bat (*Saccolaimus flaviventri)s*		Vulnerable	

Belson's panic (*Homopholis belsonii)*	Vulnerable		
Finger Panic Grass *(Digitaria porrecta)*		Endangered	

4.0 References

4.1 Legislation and Guidance Documentation

Federal Legislation	State legislation	Local Government Laws	Standards / Codes	Other Documentation (Contract, Approvals, Client Specifications, EMP, Procedures)
1. *Environmental Protection & Biodiversity Conservation Act* 1999	1. *Protection of the Environment Operations Act* 1997 (NSW) 2. *Biodiversity Conservation Act* (2016); 3. *Fisheries Management Act* (1994); 4. *Biosecurity Act* (2015). 5. *Threatened Species Conservation Act* (NSW, 1995) 6. *National parks and Wildlife Act* (NSW, 1974) 7. *Native Vegetation Act* (NSW, 2003) 8. *Native Vegetation Regulation* (NSW, 2005) 9. *Forestry Act* (NSW, 1916) 10. *Noxious Weeds Act* (NSW, 1993)		AS4970 -2009 Protection of trees on development sites AS4373-2007 Pruning of amenity trees	1. Environment Protection and Biodiversity Conservation Act 1999, Conditions of Approval (EPBC 2016/7729); 2. Critical State Significant Infrastructure Conditions of Approval (Application No. SSI 7474); 3. Revised Environmental Management Measure (REMMS); and 4. Secretary's Environmental Assessment Requirements Environmental Protection Outcomes, (SEARs EPOs). 5. NSW – Legislation, Guidelines and Policies – Flora and Fauna Management Sub-plans (Australian Rail and Track Corporation Limited, 2020) 6. Biodiversity Guidelines – Protecting and Managing Biodiversity on RTA Projects (Roads and Traffic

				Authority, 2011) 7. Matters of National Environmental Significance – Significant Impact Guidelines 1.1 (Department of the Environment, 2013) 8. RMS QA Specification G36 – Environmental Protection 9. RMS QA Specification G40 – Clearing and Grubbing 10. Guidelines for vegetation management plans on waterfront land (NSW Office of Water, 2012) 11. Guidelines for controlled activities on waterfront land – riparian corridors (Department of Primary Industries, 2018) 12. Why do Fish Need to Cross The Road? Fish Passage Requirements for Waterway Crossings. Fairfull and Witheridge (2003) 13. Australian Standard AS 4373 Pruning of amenity trees 14. Factsheet: Vehicle Biosecurity Kit – Plant Industries (Department of Primary Industries, 2012) 15. Fauna Management Work Instruction (0-0000-900-EEC-00-WI-0004) (Inland Rail, 2019) 16. Biodiversity Management Plan (7632-T4MR-PL-

				PES-001-05) 17. Pest and Weeds Management Appendix

4.2 Definitions & Abbreviations:

- Client – Contract Administrator/Client
- JH –T4MR
- PM – Project Manager
- SM – Site Manager / Superintendant
- Fm – Foreman / Supervisor
- PER – Project Environmental Representative, (Env Manager or Coordinator)
- ARTC - Australian Rail Track Corporation
- WRA – Workplace Risk Assessment
- AMS – Activity Method Statement
- CEMP – Construction Environmental Management Plan
- ECP – Environmental Control Map
- EPA – Environmental Protection Authority
- EPBC – Environmental Protection and Biodiversity Conservation
- GMR – Global Mandatory Requirement
- PESCP – Progressive Erosion & Sediment Control Plan
- JHET – T4MR Event Tracker
- HSEQ – Health, Safety, Environment and Quality

5.0 Management of Flora & Fauna

5.1 Actions

No	Pre-Construction	Staff Responsible	When
1.	Develop ECM/ drawings highlighting sensitive areas and clearly identifying construction boundaries **[Hold point]**	PER	Prior to construction
2.	Define work boundaries and install physical barriers to prevent accidental damage to sensitive habitats, including no-go zones and tree protection measures (GMR 9.2).	SM / PER	Prior to construction
3.	Obtain relevant and current Clearing Permits. **[Hold point]**	SM/ PER	Prior to construction
No	**Inductions and Training**	**Staff Responsible**	**When**
1.	Site inductions will include the following specific components for Biodiversity management and condtions; • Awareness of General Environmental Duty and Dutiy to Notify, (legislative obligations) • Clearing and protected area requirements • Construction exclusion zones/ NO GO areas; • Project identified sensitive flora and fauna locations and responsibilities. • Fauna interaction rules.	Fm / PER	At Site Induction
2.	Identify appropriate local vet or rescue organisation/wildlife carers/facilities. Contact details for this person/company must be available in the relevant Environmental Control Maps and other prominent locations, (e.g crib rooms/ vehicles) and communicated via Tool box talks/ Pre-starts.	PER	Prior to construction
3.	Ensure all key actions of this ECP (eg clearing demarcation, erosion control measures and clearing permit requirements) are incorporated in relevant project HSEQ risk management documentation.	PER	Prior to construction

4.	Site specific flora and fauna awareness training/ information developed and communicated to construction personnel	PER	Project Delivery
	Plant Access and Movement	**Staff Responsible**	**When**
1.	Demarcate construction areas and transport routes as per GMR 9.9.	SM	At site establishment
2.	Adhere to designated speed limit (40km) whilst on site.	Fm	At all times
3.	Limit movement of vehicles and personnel to designated working areas and access routes.	Fm	At all times
4.	Where required, implement tree protection zones (TPZ) as identified on ECM and clearing permits.	Fm / PER	Before plant movements occur in proximity of a protected tree
5.	TPZ must be demarcated by: • Parawebbing – foot traffic • Demarcation / Fencing – vehicle traffic • Padding/physical protection measures installed near excavators and other construction works	FM / PER	Prior to works occurring
	Disturbance and Clearing of Vegetation	**Staff Responsible**	**When**
1.	No disturbance to any vegetation (native and non-native) shall occur outside of the clearing zones or the project boundary	All staff	At all times
2.	Obtain a clearing permit prior to any ground disturbing activity (T4MR-FRM-ENV-001-02 clearing permit).	Fm / PER	Prior to clearing
3.	All approved Clearing Permits to be recorded on project pack web	PER	At all times
4.	Clearly define limits of clearing on construction work plans and on site prior to clearing as per GMR 10.1. Supervisors shall confirm permit boundaries and conditions with the relevant PER prior to commencing clearing work.	Fm / PER	Prior to Clearing
5.	Sensitive biodiversity areas (threatened species habitat/ TECs) occurring in proximity to the clearing boundary would be fenced with appropriate signage to prevent inadvertent access/ impacts.	PER	Prior to Clearing
6.	GMR 9.1 and 10.1 specifies vegetation clearing activities must: ▸ Physically demarcate areas of vegetation to be trimmed or removed ▸ Mark areas of vegetation to remain and 'no go' zones.	Fm / PER	At all times
7.	For any structures identified as potential microbat habitat an additional pre-clearance surveys would be undertaken by a suitably qualified ecologist on the day prior to the disturbance of these structures to determine if microbats are present.	Ecologist/ PER	Prior to structural disturbance

8.	If small numbers (<10) of non-breeding bats are present an ecologist would either: ▸ Install exclusion after the bats have vacated the site at night. ▸ Capture and relocate the bats that evening. (Where larger numbers or breeding microbats are identified a specific plan would be developed and implemented by an ecologist with microbat experience in consultation with ARTC)	Ecologist/ PER	Prior to structural disturbance
9.	Prior to construction commencing, pre-clearing surveys will be undertaken by a suitably qualified ecologist to: ▸ Identify and demarcate habitat trees; ▸ Identify other fauna habitat features including fallen timber/hollow logs and burrows; ▸ Identify habitat features that are suitable for translocation or salvage; ▸ Undertake updated mapping of weed infestations for the project site; ▸ Identify culverts/ bridges to be demolished which represent habitat for microbats; ▸ Identify any threatened flora species within the project site not assessed as part of the EIS; and ▸ Identify and demarcate any threatened flora to be retained occurring in proximity to the CIZ.	PER	Prior to works occurring
10.	A suitably qualified fauna spotter catcher to be present during all clearing activities; *Only suitably qualified ecologists with up to date bat Lyssavirus vaccinations are to handle microbats.*	Fm / PER	At all times
11.	All habitat trees are to be lowered gently to the ground where possible. Additional steps such as bumping the habitat tree three times over a 5-minute period would be undertaken to encourage fauna to vacate prior to felling would be adopted where the potential to lower the tree gently is low. ▸ The fauna spotter catcher would search all habitat trees immediately after felling to identify and capture any fauna present.	Fauna Spotter/ PER	During Clearing
12.	In the event of injury to fauna, PER must be notified immediately, for further notification to RSPCA/ Veterinarian and suitable arrangements made.	PER	At all times
13.	Habitat trees would be subject to a two-stage clearing process involving: ▸ Initial clearing of non-habitat trees around habitat trees within the immediate vicinity of habitat tree. ▸ Allowing habitat trees to stand for at least 48 hours after initial clearing to allow fauna the opportunity to self-relocate.	Fauna spotter/ PER/ SM	During Clearing

<table>
<tr><td>14.</td><td>Transport any injured animal to a licensed wildlife carer or wildlife facility, as per below;

<table><tr><th>Veterinary Clinic</th><th>Address</th><th>Phone</th></tr><tr><td>Narrabri Veterinary Clinic</td><td>24 Francis St, Narrabri NSW 2390</td><td>(02) 67 924 388</td></tr><tr><td>Moree Veterinary Hospital</td><td>106 Heber St, Moree NSW 2400</td><td>(02) 67 521 444</td></tr><tr><th>Wildlife Carers</th><th>Address</th><th>Phone</th></tr><tr><td>WIRES (Central Northern)</td><td>PO Box 734, Tamworth, NSW 2340</td><td>1300 094 737</td></tr></table></td><td>Fm / PER</td><td>At all times</td></tr>
<tr><td>15.</td><td>Minimise areas of exposed earth by only stripping/clearing areas immediately prior to works and rehabilitating the area as soon as possible (GMR 10.3).</td><td>Fm / PER</td><td>At all times</td></tr>
<tr><td>16.</td><td>Where a Koala is located within a clearing area, clearing activities would stop and a 50m buffer established around the animal with no clearing within this area to resume until the fauna spotter/ catcher confirms the animal has left the area of its own volition</td><td>All staff</td><td>At all times</td></tr>
<tr><td>17.</td><td>Notification to the Trans4m Rail Environment manager of Koala sightings within the works area, confirmation ceased of clearing activities and reporting of when works commenced for recording in the Project Fauna register</td><td>All staff</td><td>At all times</td></tr>
<tr><td>18.</td><td>Unexpected threatened Flora/ Fauna identified within the clearing areas will be documented by during the pre clearing surveys, with no clearing approved until further assessment undertaken.</td><td>PER</td><td>Pre clearing survey</td></tr>
<tr><td>19.</td><td>Damage to vegetation outside the Clearing permit conditions will be immediately reported to PER and treated as an incident and non conformance.</td><td>All Staff</td><td>At all times</td></tr>
<tr><td>20.</td><td>Retain all felled trees and hollows where possible for placement to provide further fauna habitat. Where hollows cannot be salvaged, nest boxes will be provided in retained vegetation.</td><td>Fm / PER</td><td>At all times</td></tr>
<tr><td>21.</td><td>No burining of cleared vegetation</td><td>All Staff</td><td>At all times</td></tr>
<tr><th>No</th><th>Works near/in Creeks and Temporary Waterway Crossings</th><th>Staff Responsible</th><th>When</th></tr>
<tr><td>1.</td><td>Works within the riparian zone would maximise, where practicable, the preservation of any existing vegetation and minimise disturbance.</td><td>Fm/SM/PER</td><td>During clearing</td></tr>
<tr><td>2.</td><td>Any instream large woody debris in the development footprint would be relocated upstream or downstream in consultation with the ecologist.</td><td>PER</td><td>During clearing</td></tr>
<tr><td>3.</td><td>Works within watercourses will not commence during periods of rain or high flow events.</td><td>All Staff</td><td>During rainfall or high flow events</td></tr>
</table>

4.	Any pools in watercourses that would be impacted by construction would be dewatered according to a dewatering procedure to be prepared. The dewatering procedure is to include methods for capture/ relocation of native aquatic fauna and euthanasia of exotic species to be undertaken by a suitably qualified aquatic ecologist.	Fm/PER/ Ecologist	Where dewatering of pools is required
No	**Trenches/ Deep Excavations**	**Staff Responsible**	**When**
1.	Where possible trenches/ deep excavation are not to be left open overnight. ▸ If open trench overnight is unavoidable, a fauna escape ramp/ ladder (plastic garden mesh/ timber plank) is to be provided. ▸ Trenches/ excavations left overnight are to be inspected prior to works commencing for fauna with any fauna present to only be captured/ relocated by a suitably qualified fauna spotter/ catcher.	Fm/SM/PER	As required
No	**Cane toads**	**Staff Responsible**	**When**
1.	Any observation of a Cane Toad on the site is to be reported to the relevant regulatory authority with advice on any necessary management actions to be provided by a Cane Toad expert.	All Staff	As required
No	**General**	**Staff Responsible**	**When**
1.	No plant/equipment/materials to be stored within the TPZ.	Fm / PER	At all times
2.	Orientate temporary construction lighting to prevent light overspill in to fauna habitat areas.	Fm / PER	At all times
3.	Re-use uncontaminated topsoil (including any stored seed bank) in any revegetation/landscaping activities.	Fm / PER	At all times
4.	Undertake revegetation during the appropriate planting season for the species being planted.	Fm / PER	At all times
5.	No dumping of soil or vegetative material on top of vegetation to be retained.	Fm / PER	At all times
6.	All erosion sediment control measures detailed within the Progressive Erosion Sediment Control Plan (ESCP) would be implemented.	Fm/SM/PER	At all times
7.	All earthworks are to be undertaken in accordance with the Pest and Weed ECM	Fm/SM/PER	At all times
5.2 Monitoring			
No	**Monitoring Required**	**Staff Responsible**	**When**
1.	Daily informal observations to be recorded in site diaries in project pack web.	Fm/PER	As required
2.	All exclusion barriers, no-go zones, excavations which could contain trapped fauna shall be regularly inspected and maintained as required. Any resulting actions arising shall be raised in JHET through weekly inspections.	PER	Weekly
3.	Inspection of exclusion/buffer zones to occur during weekly inspections and any actions arising recorded in JHET.	PER	Weekly and proceeding any works in buffer zone

4.	General monitoring of construction areas for evidence of adverse impact which may result from construction activities. Any actions arising shall be raised in JHET through weekly inspections	PER	Weekly
5.	Photographic evidence of management practices during substantial flora removal or trimming.	Fm / PER	During clearing

5.3 Reporting

No	Reporting Required	Staff Responsible	When
1.	Details of field observations shall be reported in JHET via the weekly environmental inspection checklist, and communicated to all staff during pre-starts, toolbox and team meetings.	PER	All times
2.	A fauna register will be maintained during clearing by the ecologist/ fauna spotter catcher of: ▸ All habitat trees recorded/ cleared. ▸ All details of fauna captures/ relocation. ▸ All fauna mortalities. ▸ Any fauna taken into care and outcomes.	Fauna Spotter/ PER	During Clearing
3.	A post-clearing report would be completed at the completion of clearing activities documenting all data collected in the fauna register.	Ecologist/ PER	Post clearing
4.	Any death of a State or Commonwealth listed threatened fauna species would be reported to (PER immediately), ARTC and further notification as per; ▸ Environment Protection and Biodiversity Conservation Act 1999, Conditions of Approval (EPBC 2016/7729) and; ▸ Critical State Significant Infrastructure Conditions of Approval (CSSI SSI7474)	PER	At all times
5.	All incidents regarding flora and fauna shall be reported immediately to the PER and recorded in JHET.	All Staff	Following incident
6.	Incidents details shall be entered into JHET in accordance with the Incident Management Procedure (T4MR-MPR-SQE-010).	PER	Following incident
7.	Environmental event, (greater than Report Only or Class 3, as per Trans4mRail Environment Incident Severity Classification table T4MR-APP-SQE-010-03), or potential noncompliance with the Environmental Statutory Requirements will immediately be notified to ARTC Senior Environmental Advisor and/or ARTC Field Advisor and provide enough detail to determine if any Authority notification is required (as per CoA requirements and/or any other Statutory Requirements) to ARTC and additionally **IREnvironmentCompliance@ARTC.com.au**	PER	Following incident
8.	Incidents shall be reported to Regional, Group and External Agencies in accordance with the Incident Notification and Reporting Matrix (refer to Incident and Event Management Procedure). Reporting to the Regional Operations Environment Manager shall occur as follows: 1A/1P incidents: Notify within one hour of incident 2A/2P incidents: Notify prior to end of shift 3A/3P incidents: Complete report in JHET within three days	PM / PER	Following incident
9.	Summary of environmental incident management to be provided in the monthly Project Safety/Quality/Environment Report (refer: Performance Statistics – Safety, Quality & Environment T4MR-MPR-SQE-009)	PER	Monthly

6.0 Suggested Corrective Actions	
Risk / Problem	**Suggested Corrective Action**
Over clearing of flora / Clearing outside of permitted clearing area	▪ Stop work ▪ Re-establish boundaries ▪ Notify the relevant parties, including JHG Regional HSEQ Team ▪ Investigate possibility of rehabilitating the area ▪ Review construction methods, control effectiveness and device design ▪ Re-train staff/operator(s) with regards to keeping within site boundaries and not clearing flora without permission ▪ Enter incident into JHET
Animal injured or killed	▪ Stop work ▪ Attempt to prevent further harm to animal and/or other animals in vicinity - establish a 10m radius no-go zone around injuried animal ▪ Take injured fauna to a wildlife hospital/veterinary surgery ▪ Notify the relevant parties, including JHG Regional HSEQ Team ▪ Investigate incident and implement controls to prevent reoccurrence ▪ Enter incident into JHET
Fauna trapped in active work areas	▪ Remove potential risks to fauna, including temporary stop to works ▪ Contact Project Environment Representative or Supervisor ▪ Determine an escape route for fauna out of the construction area and move all personnel and equipment clear of the route ▪ If fauna does not leave on its own accord, Project Enviroment Representative to organise a registered carer or spotter/catcher to arrange capture and release ▪ Once fauna is removed, inspect and secure fauna exclusion fencing layout or other entry points to prevent fauna entry. ▪ Enter incident into JHET
Inappropriate methods of conducting works to remove flora or handle fauna	▪ Review Site Environmental Plan and implement the appropriate controls and methods. ▪ Evaluate controls and procedures to minimise impact to flora and fauna, and implement the correct methods appropriately.
Insufficient maintenance of controls (eg no go zones)	▪ Repair/reinstate controls ▪ Review maintenance schedule, staff responsible and resources.

2600-0018
N2NS-SP1

Dust and Air Quality Environmental Control Map (CEMP)

Document No: 7632-T4MR-PL-PES-003

Recommend Documents to be Read in Conjunction
This management plan it to be read in conjunction with the Construction Environmental Management Plan, (7632-T4MR-PL-PES-001)

Distribution
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	Uncontrolled Copy
Authorised By:	Jon Holmes, T4MR Project Director
Date:	05/02/2021

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DATE	REV	DETAILS OF CHANGE	SECTION	PREPARED BY	REVIEWED & APPROVED BY
28/10/2020	0	Issue for Construction	All	Pippa Donaldson	David Carberry
05/02/2021	1	Issued for Construction (Format and Rebrand Update)	All	Pippa Donaldson	Jon Holmes

1.0 Scope

This Environmental Control Plan is applicable to all construction phase works associated with the Inland Rail Narrabri to North Star SP1 Project (N2NS), (T4MR and subcontractors).

2.0 Objectives

The objectives of this Dust and Air Quality Environmental Control Plan are to:

- Prevent any adverse impacts from dust on the environment during the construction phase of the Project
- Establish and maintain personal awareness of the importance of dust management practices during the construction phase of the Project.

3.0 Performance Criteria

3.1 General

1. Construction activities undertaken in accordance with this ECP
2. No verified complaints or community concerns relating to dust generation during the construction phase of the Project.
3. No significant visible dust outside of the Project area boundary.
4. All workforce personnel (including subcontractors) to complete a Project induction, which will include an overview of dust management practices.

3.2 Targets

1. The proposal is constructed and operated in accordance with the requirements of the POEO Act and relevant environmental protection licences.
2. Dust generated during construction will not exceed the relevant criteria in the National Environment Protection (Ambient Air Quality) Measure and the Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales (Department of Environment and Conservation, 2005).

4.0 References

4. 1 Legislation and Guidance Documentation

Federal Legislation	State legislation	Local Government Laws	Standards / Codes	Other Documentation
1. *Environmental Protection & Biodiversity Conservation Act 1999*	1. *Protection of the Environment Operations Act 1997* 2. *Protection of the Environment Operations (Clean Air) Regulation 2010* 3. *Road Transport (Vehicle Registration) Regulation 2017* 4. *Heavy Vehicle (Adoption of National Law) Act 2013* 5. *Heavy Vehicle National Law (NSW),*		1. Product Emissions Standards Rules 2017 (Commonwealth)	1. Environment Protection and Biodiversity Conservation Act 1999, Conditions of Approval (EPBC 2016/7729); 2. Critical State Significant Infrastructure Conditions of Approval (SSI 7474); 3. Revised Environmental Management Measure (REMMS); and 4. Secretary's Environmental

				Assessment Requirements Environmental Protection Outcomes, (SEARs EPOs). 5. Progressive ESCP's 6. National Heavy Vehicle Regulator (NHVR) Publication: National Heavy Vehicle Inspection Manual. 7. T4MRail Soil and Water Management Plan (7632-T4MR-PL-PES-001-01)

4.2 Definitions & Abbreviations

1. CA/Client – Contract Administrator/Client
2. JH –T4MR
3. PM – Project Manager
4. SM – Site Manager / Super Intendant
5. Fm – Foreman / Supervisor
6. EM – Project Environmental Representative, (Env Manager or Coordinator)
7. ARTC - Australian Rail Track Corporation
8. WRA – Workplace Risk Assessment
9. AMS – Activity Method Statement
10. TRA – Task Risk Assessment
11. SEMP – Site Establishment Management Plan
12. CEMP –Construction Environmental Management Plan
13. ECM – Environmental Control Map
14. EPA – Environmental Protection Authority
15. SWMP – Soil and Water Management Plan

5.0 DUST AND AIR QUALITY

5.1 Actions

No.	Inductions and Training	Staff Responsible	When
1.	Site inductions will include the following specific components for dust and air quality management: • Dust and air quality management objectives, including the avoidance of dust generation during works. • Key dust and air quality management measures. • Key Monitoring locations	PER	Prior to commencing work
No.	**Avoidance and Suppression**		**When**
1.	GMR 9.7 – Controls must be in place to prevent air pollution, noise, vibration and light impacts to the local community and environment.	All personnel	Project Delivery
2.	GMR 10.7 – Measures to minimise or suppress dust must be implemented and maintained.	All personnel	Project Delivery

3.	Where the avoidance of dust-generating activities is not practicable, dust-suppression techniques to protect vegetation, worker health and amenity must be applied. Techniques may include water application via watercarts and alternative means (i.e. sprinklers, hoses), sealing or stabilisation of highly trafficked areas, dust screens, application of geofabric or jute mat or the application of soil binding agents.	PER/Engineers/Supervisors	Project Delivery
4.	Alternative water sources (i.e. recycled water, stormwater captured in basins and excavations, etc) will be utilised, where compliant with reuse WQ criteria, in preference to potable water for dust suppression and construction purposes.	PER/Supervisors	Project Delivery
5.	Dust and Air quality mitigation measures will be included in the PESCP's	PER	Project Delivery
6.	Where possible, vegetation clearing and removal of groundcover will be staged to minimise the area and duration that surfaces are exposed	PER/ Engineers/ Supervisors	Project Planning
7.	Dust management and suppression will be undertaken during and following vegetation clearing activities.	PER/Engineers/Supervisors	Project Delivery
8.	Concrete batch plants will be fitted with dust filters or similar controls to minimise air quality impacts from batching operations.	PER/Supervisors	
No.	**Haul/Access Road Management**		
1.	Heavily utilised and trafficked areas such as ancillary compounds, laydown areas, carparks and administrative areas will be sealed or sheeted to avoid dust generation and mud tracking issues.	PER/Engineers/Supervisors	Project Delivery
2.	For unpaved roads, the periodic application of water will be used for dust suppression. The frequency of application will be dependent on weather conditions and traffic volumes. For paved roads, the removal of accumulated material from roadways may occur via cleaning with spray trucks with brushes.	PER/Engineers/Supervisors	Project Delivery
3.	Stabilised site access, rumble grids and large aggregate will be utilised at construction (and laydown) entry and exit points to avoid mud being tracked onto public roads.	PER/Engineers/Supervisors	Project Delivery
	Materials Handling and Management	**Staff Responsible**	**When**
1.	Multiple handling of soil and rock materials will be minimised.	PER/Engineers/Supervisors	Project Delivery
2.	Loads in trucks transporting soil, aggregate or other dust generating materials to and from the construction area must be wetted down or covered.	All personnel	Project Delivery
3.	All trucks entering and leaving the site of works are to have any loads constrained in such a manner as to prevent the dropping or tracking of materials onto roads. This shall include ensuring that all wheels, tracks and body surfaces are free of mud and other accumulated contaminants before entering the sealed road network (including the use of shaker screens or rubble pads).	All personnel	Project Delivery

4.	Dust generation from offloading/handling materials will be reduced by minimising the height of the drop, and by use of a chute, screens, enclosures, sprays, covers, dust guards, and dust extraction systems etc. as appropriate.	All personnel	Project Delivery
	Stockpile, Spoil and Laydown Area Management	**Staff Responsible**	**When**
1.	Dust from open sources will be minimised by implementing control measures such as compaction, enclosures and covers, and by increasing moisture content. Stockpiles will be managed to reduce dust-generation. Controls may include: • Locating stockpiles in areas protected from wind. • Minimising the number and size of stockpiles. • Using watering sprays, surface binders and/or covers on piles if wind is lifting material. Stockpile management shall be in accordance with the requirements of the Water Quality, Erosion and Sediment Environmental Control Map.	PER/Engineers/Supervisors	Project Delivery
2.	Lime stockpiles shall be contained in site storage containment ISO tank or otherwise.	PER/Engineers	Procurement Project Delivery
3.	Delivery vehicles of lime will be fitted with dust containment mitigation measures.	Procurement	Procurement/ Project Delivery
4.	Disturbed areas will be progressively rehabilitated as soon as reasonably practical.	PER/Supervisors	Project Delivery
	Vehicle, Equipment, Machinery and Vessel Emissions	**Staff Responsible**	**When**
1.	All vehicles and machinery will be fitted with appropriate emissions-control equipment, will be maintained frequently and will be serviced to the manufacturer's specifications. Pre-start checklists and equipment maintenance logs indicating maintenance schedule shall be completed.	All personnel	Project Delivery
2.	Exhaust systems of construction plant, vehicles and machinery will be maintained in accordance with manufacturer's specifications to ensure that emissions do not exceed EPA regulations. Periodic visual checks will be undertaken daily.	All personnel	Project Delivery

	Atmospheric Emissions	Staff Responsible	When
1.	Construction activities will be managed to minimise the generation of air emissions, if practicable. Measure may include: • Efficient use of fuel and electricity • Establishing plant and machinery maximum idling times • Coordinating vehicle movements to alleviate site, or entry/exit point congestion • Recycling and reusing construction materials • Selection of materials and consumables with a lower greenhouse gas footprint • Load detection equipment for automatic for automatic starting and stopping of power generating sets with demand • Inspections and preventative maintenance • Visual monitoring	All personnel	Project Delivery
2.	Emissions of pollutants/contaminants to the atmosphere from welding, grinding, cutting, post weld heat treatment, abrasive blasting, painting and other related works will be minimised by the use of emission controls such as encapsulation, filtration, blast chambers, grinding shrouds and fume extractors.	All personnel	Project Delivery
3.	Burning off of waste, including vegetative waste matter is not permitted.	All personnel	Project Delivery
6.0 Monitoring			
No	**Monitoring Required**	**Staff Responsible**	**When**
1.	**CoA C14**- Air Quality Monitoring Program - Local air quality will be monitored prior to, during and following construction at representative locations along the construction alignment.	PER	Workplace Planning
2.	Dust deposition gauges (DDG) will be established at least one month prior to the commencement of construction, remain in place for the duration of construction and be removed at the completion of construction or where sufficient stabilisation has been achieved across the site.	PER	Workplace Planning/Project Delivery
3.	Weather forecast will be monitored, and additional measures implemented where unfavourable weather conditions (i.e. hot, dry weather, high wind speed are anticipated.	PER/ Supervisors	Project Delivery
4.	Visual inspection for airborne dust and dust deposition will be undertaken daily to assess the effectiveness of dust-suppression controls, where necessary observations shall be entered into site diaries in Project Pack Web.	PER/Engineers/Supervisors	Daily during Project Delivery
5.	Vehicles, plant, equipment and machinery shall be regularly inspected daily to ensure good working order.	PER/Engineers/Supervisors	Daily
6.	Visual inspection of airborne dust and dust deposition shall be undertaken as part of the weekly environmental inspection, with observations and any necessary actions entered into the T4MR Event Tracker (JHET)	PER/Engineers/Supervisors	Weekly

7.	Visual inspection of roads/ access controls/ stabilisation methods will be undertaken in in the weekly Environmental inspection	PER	Weekly

7.0 Reporting			
No	**Reporting Required**	**Staff Responsible**	**When**
1.	Details of field observations shall be reported via the Weekly Environmental Inspection Checklist, and communicated to staff during pre-starts, toolbox and team meetings as appropriate.	PER	Project Delivery
2.	Monthly Dust deposition monitoring results will be maintained in Project Pack Web and reported to ARTC, the Project ER and the NSW EPA along with any exceedances and corrective actions taken.	PER	Monthly/ Following and Incident
3.	All monitoring results are to be maintained in Project Pack Web.	PER	Project Delivery
4.	All environmental incidents/ events/ complaints regarding dust and/or air quality shall be reported immediately to the PER.	All Staff	Following complaint/incident
5.	Incidents details shall be entered into JHET in accordance with the Incident Management Procedure (MPR-SQE-010)	PER	Following Incident
6.	Environmental event, (greater than Report Only or Class 3, as per Trans4mRail Environment Incident Severity Classification table T4MR-APP-SQE-010-03), or potential noncompliance with the Environmental Statutory Requirements will immediately be notified to ARTC Senior Environmental Advisor and/or ARTC Field Advisor and provide enough detail to determine if any Authority notification is required (as per CoA requirements and/or any other Statutory Requirements) to ARTC and additionally **IREnvironmentCompliance@ARTC.com.au**	PER	Following Incident
7.	Incidents shall be reported to Regional, Group and External Agencies in accordance with the Incident Notification and Reporting Matrix (refer to Incident Management Procedure). Reporting to the Regional Operations Environment Manager shall occur as follows: 1A/1P incidents: Notify within one hour of incident 2A/2P incidents: Notify prior to end of shift 3A/3P incidents: Complete report in JHET within three days	PM / PER	Following incident
8.	Summary of environmental incident management to be provided in the monthly Project Safety/Quality/Environment Report (refer: Performance Statistics – Safety, Quality & Environment (T4MR-MPR-SQE-009)	PER	Monthly

8.0 Suggested Corrective Actions

Problem	Suggested Corrective Action
Excessive dust from excavation	Increase frequency of water truck spraying Avoid excavation during high wind events, particularly if wind direction is likely to impact on any sensitive receivers. Erect temporary dust screens, particularly between dust sources and sensitive receivers.
Excessive dust creation from hauling operations	Spray haul roads with water, use soil stabilisation binder, apply crushed rock or a combination of these measures. Reduce vehicle speeds. Cover loads causing dust impacts. Consider relocation of haul roads to less sensitive areas. Clean dirty road surfaces increase frequency of spraying/chemical application. Install shakedown devices at entry and exit points.
Excessive dust from stockpiles	Spray stockpiles with water/water trucks. Hydromulch/seed or stabilise stockpiles, cover stockpiles with geofabric (or similar) where appropriate. Locate stockpiles away from sensitive receivers. Leave larger buffer zones. Erect temporary dust screens, particularly between the source and sensitive receivers.
Creation of excessive vehicle emissions	Repair or undertake maintenance on equipment, plant and vehicles where necessary. Remove non-compliant equipment, plant and vehicles from operation where repair or maintenance is not practicable. Restrict equipment, plant and vehicle hours of operation when working in the vicinity of sensitive receivers.

2600-0018-N2N-SP1

Hazardous Chemicals Environmental Control Map (CEMP)

Document No: 7632-T4MR-PL-PES-004

Recommend Documents to be Read in Conjunction
This management plan is to be read in conjunction with the Construction Environmental Management Plan, (7632-T4MR-PL-PES-001)

Distribution
There are no restrictions on the distribution or circulation of this ECM within T4MR.

	Uncontrolled Copy
Authorised By:	Jon Holmes, T4MR Project Director
Date:	05/02/2021

Revisions
Draft issues of this document shall be identified as Revision A, B, C etc. Upon initial issue (generally Contract Award) this shall be changed to a sequential number commencing at Revision 0. Revision numbers shall commence at Rev. 1, 2 etc.

DATE	REV	DETAILS OF CHANGE	SECTION	PREPARED BY	REVIEWED & APPROVED BY
28/10/2020	0	Issue for Construction	All	Pippa Donaldson	David Carberry
05/02/2021	1	Issued for Construction (Format and Rebrand Update)	All	Pippa Donaldson	Jon Holmes

1.0 Scope

This Environmental Control Plan is applicable to all construction phase works associated with the Inland Rail Narrabri to North Star SP1 Project (N2NS), (T4MR and subcontractors).

2.0 Objectives

The objectives of this Hazardous Substances & Dangerous Goods ECM is to:

- Prevent adverse environmental impacts from hazardous substances and dangerous goods.

3.0 Performance Criteria

3.1 General

1. No environmental incidents resulting from mismanagement of hazardous substances and/or dangerous goods.
2. All personnel subject to a workplace induction.

4.0 References

4. 1 Legislation and Guidance Documentation

Federal Legislation	State legislation	Local Government Laws	Standards / Codes	Other Documentation
1. *Industrial Chemicals Act 2019 (Commonwealth)* 2. *Industrial Chemicals (General) Rules 2019 (Commonwealth)* 3. *Fuel Quality Standards Act 2000 (Commonwealth)*	1. *Environmental Planning and Assessment Act 1979 (EP&A Act)* 2. *Environmentally Hazardous Chemicals Act, 1985* 3. *Protection of the Environment Operations Act 1997 (POEO Act)* 4. *Work Health and Safety Act 2011* 5. *Work Health and Safety Regulation 2017* 6. *Pesticides Act 1999* 7. *Contaminated Land Management Act 1997*		1. Transport for NSW's Chemical Storage and Spill Response Guidelines (9TP-SD-066) (TfNSW 2015)	1. Environment Protection and Biodiversity Conservation Act 1999, Conditions of Approval (EPBC 2016/7729); 2. Critical State Significant Infrastructure Conditions of Approval (Application No. SSI 7474)s; 3. Revised Environmental Management Measure (REMMS); and 4. Secretary's Environmental Assessment Requirements Environmental Protection Outcomes, (SEARs EPOs). 5. T4MRMPR-SQE-011 Hazardous Chemicals Management 6. Labelling Dangerous Goods and Hazardous Chemicals (refer to Hazardous Chemicals Management

				Procedure) 7. GHS and Dangerous Goods Segregation Chart (refer to Hazardous Chemicals Management Procedure) 8. Hazardous Chemical Disposal Requirements (refer to Hazardous Chemicals Management Procedure) 9. Hazardous Chemical Risk Management (refer to Hazardous Chemicals Management Procedure) 10. Storage and Control of Hazardous Chemicals (refer to Hazardous Chemicals Management Procedure) 11. Fuel Handling, Transport and Storage (refer to Hazardous Chemicals Management Procedure)

4.2 Definitions & Abbreviations

- CA/Client – Contract Administrator/Client
- JH –T4MR
- JHET – T4MR Event Tracker
- PM – Project Manager
- SM – Site Manager / Super Intendant
- Fm – Foreman / Supervisor
- EM – Project Environmental Representative, (Env Manager or Coordinator)
- ARTC - Australian Rail Track Corporation
- WRA – Workplace Risk Assessment
- AMS – Activity Method Statement
- TRA – Task Risk Assessment
- CEMP – Construction Environmental Management Plan
- SEMP – Site Establishment Management Plan
- ECM – Environmental Control Map
- EPA – Environmental Protection Authority
- WQO – Water Quality Objectives

5.0 Hazardous Substances & Dangerous Goods Management			
5.1 Actions			
No.	**Inductions and Training**	**Staff Responsible**	**When**
1.	Site inductions will include the following specific components for hazardous chemcials: ▸ Summary of hazardous chemicals that are likely to be present on Site. ▸ Key requirements for handling, transportation and storage. ▸ Identification of hazardous and other chemicals including awareness of other items/substances such known or suspected ground contamination and the findings of any surveys for such materials that have been conducted.	PER, Safety Advisor/Manager	Workplace Planning
2.	First aiders and all workers who store or handle hazardous chemicals must be adequately trained to ensure they are aware of the associated risks and requirements for the safe use and handling of hazardous chemicals.	PER, Project Safety Advisor/Manager, First Aiders	Project Delivery
3.	All personnel who store or handle hazardous chemicals must be aware of actions to be taken in the event of a spill or other incident involving the hazardous chemical.	All personnel	Project Delivery
4.	All persons working with hazardous chemicals must be adequately trained in the TRA and correct use of controls.	Supervisors	Project Delivery
5.	All personnel who may be exposed to a hazardous chemical, including persons who are not directly involved in the storage and handling of hazardous chemicals but who may be affected by them, e.g. workers in the vicinity, must be adequately briefed on the risks and the actions to be taken in the event of an emergency.	PER, Project Safety Advisor/Manager, Supervisors	Project Delivery
No.	**Hazardous Chemicals/Dangerous Goods Selection and Risk Management**		**When**
1.	GMR 9.1 – All relevant approvals, licenses and permits must be in place prior to commencing works and monitored and complied with at all times.	All personnel	Workplace Planning
2.	The requirements to use, handle and/or store a hazardous chemical at a workplace must be initially identified and planned in the WRA and relevant AMS for the Workplace. As part of these assessments, consideration is given to whether a similar, less hazardous product can be used to substitute the hazardous chemical. Refer: Hazardous Chemical Risk Management (refer to Hazardous Chemicals Management Procedure).	PER, Project Safety Advisor/Manager, Site Engineers	Workplace Planning
3.	If a substance cannot be eliminated or substituted, a TRA and Hazardous Chemical Risk Assessment must be developed. The Hazardous Chemical Risk Assessment is to assess only the chemical being used. This does not replace the TRA, but sits alongside it to ensure specific requirements around the chemicals storage, health surveillance and PPE requirements are adequately addressed.	PER, Project Safety Advisor/Manager, Site Engineers	Project Delivery

4.	During development of the TRA – verify that the hazardous chemicals have been approved for use in the AMS and also consider information that has been included in the Hazardous Chemicals Risk Assessment	PER, Project Safety Advisor/Manager, Site Engineers	Project Delivery
5.	Potential incidents or emergencies involving hazardous chemicals listed in the WRA/ MAS are identified. Procedures to respond to and mitigate incidents and emergencies identified are Hazardous Chemicals Procedure (T4MR-MPR-SQE-011);.	PER, Safety Advisor/Manager	Workplace Planning
6.	Emergency response procedures will include, at a minimum: • Containment of the hazardous chemical and any solid or liquid effluent; • Notification of relevant authorities and third parties; • Disposal of containment materials; • Protection of persons involved in the clean-up operations.	PER, Safety Advisor/Manager	Workplace Planning
7.	The Workplace Emergency Response Plan will reflect possible emergencies arising from the full range of hazardous chemicals on the site, including spills.	PER, Safety Advisor/Manager	Workplace Planning
No.	**Receipt**		
1.	Ensure that any hazardous chemical proposed to be brought to Site complies with site-specific approval conditions	All personnel	Project Delivery
2.	The PER and Safety Advisor/Manager must ensure that a copy of the manufacturer's Safety Data Sheet is obtained before a chemical is brought to Site. Note: SDSs are accessible through Chemwatch	All personnel	Project Delivery
3.	A Register of all chemicals in the workplace must be established and maintained. This may be either the chemical register in Project Pack Web, or Chemwatch. The Chemicals Register Form can also be used if Project Pack Web and Chemwatch are not available.	PER, Safety Advisor/Manager	Project Delivery
4.	Before accepting any hazardous chemicals on Site ensure that a Hazardous Chemical Risk Assessment has been completed and that the Chemicals Register has been updated to include the chemical.	All personnel	Project Delivery
5.	Any container containing hazardous chemicals must be inspected to ensure it is in a sound condition, can safely contain the chemical, cannot be mistakenly identified as containing food or beverages.	All personnel	Project Delivery
	Hazardous Chemical Storage and Labelling	**Staff Responsible**	**When**
6.	GMR 9.5 – When planning the location of facilities, plant lay down areas, refuelling areas, stockpiles or chemical storage, areas that drain towards surface water or stormwater systems must be avoided in order to minimise risk of pollution.	All personnel	Workplace Planning
7.	GMR 9.13 – Chemicals and fuel must be labelled and stored in bunded areas in accordance with the safety data sheet (SDS)	All personnel	Project Delivery
8.	GMR 9.14 – Spill kit and fire response equipment must be located where chemicals and fuelled plant or equipment is being stored, operated or maintained.	PER, Safety Advisor/Manager, Supervisors	Project Delivery

9.	All chemical storage containers will display the appropriate placarding, labelling and markings. When decanting a hazardous chemical into a temporary container, the product name will be clearly marked and other relevant information will be included.	All personnel	Project Delivery
10.	Each bulk container or packaged storage area is to be uniquely identifiable, e.g. 'Store 1', 'Tank 105'. This identifier is to be recorded in the 'Storage Location' column of the Chemicals Register.	PER, Safety Advisor/Manager	Project Delivery
11.	Storage areas and containers are to be checked regularly to ensure they comply with Australian Standard AS 1940.	PER, Safety Advisor/Manager	Project Delivery
12.	All chemicals will be stored with the appropriate SDS sheet available.	All personnel	Project Delivery
13.	The GHS & Dangerous Goods Segregation Chart (refer to Hazardous Chemicals Management Procedure) is to be used to ensure all chemicals are segregated as required and quantities are appropriate for the storage environment.	All personnel	Project Delivery
	Hazardous Chemical Storage	**Staff Responsible**	**When**
1.	Quantities of chemicals are to be monitored against the placard and manifest requirements under the Model Work Health and Safety Regulations. Refer: Storage and Control of Hazardous Chemicals (refer to Hazardous Chemicals Management Procedure) for further information on Manifest, Placarding and notification requirements.	PER, Safety Advisor/Manager	Project Delivery
2.	Bulk containers and bulk storage units will comply with the requirements of AS 1940 – *The storage of flammable and combustible liquids*.	PER, Safety Advisor/Manager	Project Delivery
3.	Bulk containers/tanks: Hoses, nozzles and connectors will be appropriate for the application and free of damage.	PER, Safety Advisor/Manager	Project Delivery
4.	Lime stockpiles shall be contained in site storage containment ISO tank or otherwise.	PER/ Engineers	Procurement/ Project Delivery
5.	Sufficient spill containment equipment and material will be available at all times.	PER, Safety Advisor/Manager	Project Delivery
6.	For storage of portable containers at work sites and depots, dangerous goods approved storage cabinets with spill containment will be used. Portable containers in storage units will be stored upright, and separated and protected from other items in the same storage unit.	PER, Safety Advisor/Manager	Project Delivery
7.	All containers will be appropriately bunded. The bunded area must have a minimum capacity equal to the capacity of the bulk container. If more than one bulk container is held within a single bunded area, the bund must have a minimum capacity equal to the largest container and 10% of the next largest container.	PER/Engineers/Supervisors	Project Delivery

8.	Incompatible hazardous chemicals will not be contained within the same bund. Refer: GHS & Dangerous Goods Segregation Chart (refer to Hazardous Chemicals Management Procedure).	PER, Safety Advisor/Manager	Project Delivery
	Fuel Handling, Transport and Storage	**Staff Responsible**	**When**
1.	Fuel handling, transport and storage will be managed in accordance with Fuel Handling, Transport and Storage (refer to Hazardous Chemicals Management Procedure, T4MR-MPR-SQE-011).	PER, Safety Advisor/Manager	Project Delivery
2.	Location of Hazardous Chemical Storage and Refuelling areas will be clearly marked on ECM's	PER	
3.	The appropriate SDS will be available wherever fuels are being transported, stored or handled.	All personnel	Project Delivery
4.	Refuelling areas will be positioned > 20m from any waterway edge/entry point (drain).	All personnel	Project Delivery
5.	Fuel storage will be outside of overland water flow paths.	All personnel	Project Delivery
6.	Refuelling will occur in designated hardstand areas and over appropriate bund/spill tray.	All personnel	Project Delivery
7.	Large volume refuelling will use a refuelling bund collar or blow back collar.	PER, Safety Advisor/Manager	Project Delivery
8.	Hydrocarbon spill kit and appropriate fire extinguisher will be positioned near all refuelling or storage locations.	PER, Safety Advisor/Manager	Project Delivery
	Disposal of Contaminated Materials		
1.	The transport and disposal of hazardous chemicals is to be undertaken in accordance with relevant Manufacturer SDS disposal requirements and relevant NSW legislation. Refer: Hazardous Chemical Disposal Requirements (refer to Hazardous Chemicals Management Procedure).	PER, Safety Advisor/Manager	Project Delivery

6.0 Monitoring

No	Monitoring Required	Staff Responsible	When
1.	Hazardous chemicals management and storage are to be inspected as part of a weekly environment or HSE site inspection, or after a significant rainfall event. (The Hazardous Chemicals Storage Audit may be used for this purpose).	PER, Safety Advisor/Manager, Engineers, Supervisors	Weekly

7.0 Reporting

No	Reporting Required	Staff Responsible	When
1.	Details of field observations will be reported via the Weekly Environmental Inspection Checklist, (or after a significant rainfall event), and communicated to staff during pre-starts, toolbox and team meetings as appropriate.	PER, Safety Advisor/Manager	Project Delivery
2.	All inspection records are to be maintained in JHET.	PER, Safety Advisor/Manager	Project Delivery
3.	Complaints / incidents regarding hazardous chemicals will be reported immediately to the PER and/or Safety Advisor/Manager.	All personnel	Following incident
4.	Incident details will be entered into JHET in accordance with the Incident and Event Management Procedure (T4MR-MPR-SQE-010)	PER, Safety Advisor/Manager	Following Incident

5.	Environmental event, (greater than Report Only or Class 3, (as per Trans4mRail Environment Incident Severity Classification table T4MR-APP-SQE-010-03), or potential noncompliance with the Environmental Statutory Requirements will immediately be notified to ARTC Senior Environmental Advisor and/or ARTC Field Advisor and provide enough detail to determine if any Authority notification is required (as per CoA requirements and/or any other Statutory Requirements) to ARTC and additionally IREnvironmentCompliance@ARTC.com.au	PER	Following Incident
6.	Incidents will be reported to Regional, Group and External Agencies in accordance with the Incident Notification and Reporting Matrix (Refer to Incident Management Procedure). Reporting to the Regional HSE Manager shall occur as follows: 1A/1P incidents: Notify within one hour of incident 2A/2P incidents: Notify prior to end of shift 3A/3P incidents: Complete report in JHET within three days	Workplace Manager, PER, Safety Advisor/Manager	Following incident
7.	Summary of environmental incident management to be provided in the monthly Project Safety/Quality/Environment Report (refer: Performance Statistics – Safety, Quality & Environment T4MR-MPR-SQE-009)	Workplace Manager, PER, Safety Advisor/Manager	Monthly

8.0 Suggested Corrective Actions

Problem	Suggested Corrective Action
Inappropriate storage	• Upgrade facility • Clean-up, rectify facility • Notify and train personnel
Inappropriate transport/handling	• Notify / train staff through toolbox meetings on the appropriate handling and transport techniques / methods
Inadequate clean-up materials	• Order more materials. • Investigate types of chemicals on site and consult a supplier for appropriate equipment. • Develop or revise spill material ordering system.
Leaks and spillage to ground/soils, ground or surface water	• Isolate source and contain spill. • Determine extent and degree of contamination. • Remedial as required by EPA / Local Government / Management requirements. • Transport and dispose of in accordance with EPA/ Local Government requirements. • Determine reasons why spill and future preventative action.
Inappropriate disposal	• Identify appropriate disposal facilities/service providers. • Notify / train staff.
Inaccurate records	• Update records, advise personnel

2600-0018
N2NS-SP1

Heritage Environmental Control Map (CEMP)

Document No: 7632-T4MR-PL-PES-005

Recommend Documents to be Read in Conjunction
This management plan is to be read in conjunction with the Construction Environmental Management Plan, (7632-T4MR-PL-PES-001)

Distribution
There are no restrictions on the distribution or circulation of this ECM within T4MR.

	Uncontrolled Copy
Authorised By:	Jon Holmes, T4MR Project Director
Date:	05/02/2021

Revisions
Draft issues of this document shall be identified as Revision A, B, C etc. Upon initial issue (generally Contract Award) this shall be changed to a sequential number commencing at Revision 0. Revision numbers shall commence at Rev. 1, 2 etc.

DATE	REV	DETAILS OF CHANGE	SECTION	PREPARED BY	REVIEWED & APPROVED BY
28/10/2020	0	Issue for Construction	All	Pippa Donaldson	David Carberry
05/02/2021	1	Issued for Construction (Format and Rebrand Update)	All	Pippa Donaldson	Jon Holmes

1.0 Scope

This Environmental Control Plan is applicable to all construction phase works associated with the Inland Rail Narrabri to North Star SP1 Project (N2NS) (T4MR and subcontractors).

2.0 Objectives

The objectives of this Heritage ECM is to:

- Ensure that any item or place of heritage significance is protected and recorded;
- Ensure that appropriate heritage management practices are implemented as required; and
- Ensure that appropriate parties are consulted in the event of an unanticipated heritage discovery.

3.0 Performance Criteria

3.1 General

1. No loss of heritage value outside of the Project scope.
2. Unanticipated heritage discoveries are recorded, communicated and managed appropriately.
3. Appropriate stakeholders are engaged to advise on unanticipated discoveries.

3.2 Targets

1. Maximise awareness of Aboriginal and non-Aboriginal heritage values for all involved in the Trans4m Rail project
2. Ensure appropriate controls and procedures are implemented during construction activities to avoid or minimise potential adverse impacts to Aboriginal and non-Aboriginal heritage within the construction footprint.

4.0 References

4. 1 Legislation and Guidance Documentation

Federal Legislation	State legislation	Local Government Laws	Standards / Codes	Other Documentation
1. *Environment Protection and Biodiversity Conservation Act, 1999* 2. *Aboriginal and Torres Strait Islander Heritage Protection Act 1984*	1. *Heritage Act, 1977* 2. *Environmental Planning and Assessment Act, 1979* 3. *National Parks and Wildlife Act 1974* 4. *National Parks and Wildlife Amendment (Aboriginal Objects and Aboriginal Places) Regulation, 2010*		1. Code of Practice for the archaeological investigation of Aboriginal objects in NSW (OEH 2010) 2. Aboriginal cultural heritage consultation requirements for proponents 2010 (OEH 2010)	1. Environment Protection and Biodiversity Conservation Act 1999, Conditions of Approval (EPBC 2016/7729); 2. Critical State Significant Infrastructure Conditions of Approval (Application No. SSI 7474); 3. Revised Environmental

			3. Due Diligence Code of practice for protection of Aboriginal objects in NSW (OEH 2010)	Management Measure (REMMS); and 4. Secretary's Environmental Assessment Requirements Environmental Protection Outcomes, (SEARs EPOs). 5. T4MR Heritage Management Plan 6. T4MR Global Mandatory Requirements (GMR #9) 7. Unexpected Heritage Items Heritage Procedures 02 (RMS 2015) 8. Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW (OEH 2010) 9. Guide to Aboriginal Heritage Impact Permit processes and decision making (OEH 2010) 10. Assessing Heritage Significance (NSW Heritage Office 2001) 11. Levels of Heritage Significance (NSW Heritage Office 2008) 12. Assessing Significance for Historical Archaeological Sites and Relics (NSW Heritage Branch, Department of Planning 2009) 13. Investigating Heritage Significance (NSW Heritage Office 2001) 14. NSW Government's Aboriginal Participation in Construction Guidelines (2007) 15. How to Prepare Archival Recording of Heritage Items

				(Heritage Branch 1998) 16. Photographic Recording of Heritage Items Using Film or Digital Capture (Heritage Branch 2006) 17. Guidelines for the Management of Human Skeletal Remains under the Heritage Act 1977.

4.2 Definitions & Abbreviations

- CA/Client – Contract Administrator/Client
- JH –T4MR
- JHET – T4MR Event Tracker
- PM – Project Manager
- SM – Site Manager / Superintendent
- Fm – Foreman / Supervisor
- PER – Project Environmental Representative, (Env Manager or Coordinator)
- ARTC - Australian Rail Track Corporation
- WRA – Workplace Risk Assessment
- AMS – Activity Method Statement
- TRA – Task Risk Assessment
- SEMP – Site Establishment Management Plan
- CEMP – Environmental Management Plan
- ECM – Environmental Control Plan
- EPA – Environmental Protection Authority

5.0 Heritage

5.1 Actions

No.	Inductions and Training	Staff Responsible	When
1.	Site inductions will include the following specific components for cultural heritage: • Heritage, (Aboriginal and Non- Aboriginal) values in the Project area, and the importance of protecting and preserving these values; • Identification of exlusion areas • The requirements of this Heritage ECM, as well as any other legislative and contractual obligations; • The procedure in the event of an unanticipated discovery or accidental damage of a heritage item or place.	PER, Safety Advisor/Manager	Project Delivery
No.	**General**		**When**
1.	GMR 9.1 – All relevant approvals, licenses and permits must be in place prior to commencing works and monitored and complied with at all times.	PER, Engineers, Supervisors	Workplace Planning

2.	GMR 9.2 – Identified, protected heritage areas are identified, physically demarcated and clearly signed to prevent unauthorised access.	PER, Engineers, Supervisors	Project Delivery
3.	GMR 9.3 – The heritage significance of the area will be regularly communicated to staff and effective engagement with relevant stakeholders undertaken, (via the CSEMP)	PER, Engineers, Supervisors	Project Delivery
4.	Heritage monitors will be on site during clearing in areas of high risk, (as identified by ARTC and CHMP).	PER/ Supervisors	Project Delivery
5.	All known Aboriginal cultural heritage objects within immediate vicinity of the construction work zones will be clearly identified in ECM's and barricaded off as No Go zones.	PER	
No.	**Unanticipated Discovery – Aboriginal/Indigenous**		
1.	• NSW: ○ http://www.rms.nsw.gov.au/documents/about/environment/protecting-heritage/managing-development/unexpected-heritage-items-procedure.pdf	PER	Project Delivery
2.	Where the proposal will involve clearance of mature native trees in areas that were not subject to archaeological survey (i.e. in areas where access was not available at the time of the EIS survey), any such trees subject to clearance should be inspected for any evidence of cultural v scarring. Where any scarred trees are identified, efforts should be made to avoid impact.	PER	Project Delivery
3.	Should any unexpected finds of potential significance to Aboriginal cultural heritage (e.g. places or objects) be discovered during the Project; • Works will cease immediately. • The site of the discovery will be demarcated and communicated to workers as a no-go area • Advise the responsible ARTC representative immediately of the unanticipated discovery • Where the discovery includes human remains, report the incident to the police immediately	All personnel	Project Delivery
4.	The PER will formally advise the appropriate Aboriginal Government Body and/or traditional owner group for the region	PER/ Project Manager	Project Delivery
5.	Document the discovery in JHET, ensuring that photographic evidence of the scene and location is recorded	PER, Supervisor	Project Delivery
6.	Work shall not recommence until the advice from a suitably qualified and experienced person is provided, and approval has been received from the relevant authorities and the PER.	PER, Project Manager	Project Delivery

7.	Maintain the integrity of the discovery during operations, ensuring to prevent any unauthorised entry and follow the directions of the Police and appropriate Government or traditional owner group/s	All personnel	Project Delivery
8.	Communicate necessary information to project personnel as appropriate, ensuring that sensitive information (such as the location/s of places of heritage significance) is disseminated only as necessary.	PER, Project Manager	Project Delivery
	Unanticipated Discovery – Non-Aboriginal/Indigenous	**Staff Responsible**	**When**
9.	Trans4m Rail will utilise the Unexpected Heritage Items Heritage Procedure 02 (Roads and Maritime Service, November 2015) to manage any unexpected heritage or human skeletal remains finds. This procedure can be found here www.rms.nsw.gov.au/documents/about/environment/protecting-heritage/managing-development/unexpected-heritage-items-procedure.pdf.	PER	Project Delivery
10.	Should any unexpected finds of potential significance to Non Aboriginal cultural heritage (e.g. places or objects) be discovered during the Project; • Works will cease immediately. • The site of the discovery will be demarcated and communicated to workers as a no-go area • Advise the responsible ARTC representative immediately of the unanticipated discovery • Where the discovery includes human remains, report the incident to the police immediately	All personnel	Project Delivery
11.	Where the discovery includes human remains, report the incident to the police immediately	PER, Project Manager	Project Delivery
12.	Formally advise the appropriate Government body	PER, Project Manager	Project Delivery
13.	Document the discovery in JHET, ensuring that photographic evidence of the scene and location is recorded	PER, Supervisor	Project Delivery
14.	Work shall not recommence until the advice from a suitably qualified and experienced person is provided, and approval has been received from the relevant authorities and the PER.	PER, Project Manager	Project Delivery
15.	Maintain the integrity of the discovery during operations, ensuring to prevent any unauthorised entry and follow the directions of the Police and appropriate Government body.	All personnel	Project Delivery

16.	Communicate necessary information to project personnel as appropriate, ensuring that sensitive information (such as the location/s of places of heritage significance) is disseminated only as necessary.	PER, Project Manager	Project Delivery

6.0 Monitoring

No	Monitoring Required	Staff Responsible	When
1.	Heritage management, (exclusion/ No Go barriers), will be inspected as part of the environment or HSE site inspection. Results of the weekly inspection will be entered into JHET.	PER, Safety Advisor/Manager, Engineers, Supervisors	Weekly
2.	Identified areas of Non Aboriginal Heritage to be monitored (as listed below), will be managed in accordance with the Heritage Management Plan, (HMP). Works being undertaken in these locations will be subject to a hold point, prior to works commencing, and vibration monitoring requirements as per the Noise and Vibration Management Plan, (NVMP) • Moree Railway Station • Croppa Creek Underbirdge • Edgerois Station • Bellata Station • Gurely Station • North Star Station • Surveyor tree Milguy • Surveyor Tree Tikitere	PER/Engineers	Pre construction

7.0 Reporting

No	Reporting Required	Staff Responsible	When
17.	Details of field observations will be reported via the Weekly Environmental Inspection Checklist, and communicated to staff during pre-starts, toolbox and team meetings as appropriate.	PER, Safety Advisor/Manager	Project Delivery
18.	All inspection records are to be maintained in JHET.	PER, Safety Advisor/Manager	Project Delivery
19.	All environmental incidents/ events/ complaints regarding dust and/or air quality shall be reported immediately to the PER and Supervisor	All personnel	Following incident
20.	Incident details will be entered into JHET in accordance with the Incident and Event Management Procedure (T4MR-MPR-SQE-010)	PER, Safety Advisor/Manager	Following Incident

21.	Environmental event, (greater than Report Only or Class 3, (as per Trans4mRail Environment Incident Severity Classification table T4MR-APP-SQE-010-03), or potential noncompliance with the Environmental Statutory Requirements will immediately be notified to ARTC Senior Environmental Advisor and/or ARTC Field Advisor and provide enough detail to determine if any Authority notification is required (as per CoA requirements and/or any other Statutory Requirements) to ARTC and additionally **IREnvironmentCompliance@ARTC.com.au**	PER	Following Incident
22.	Incidents will be reported to Regional, Group and External Agencies in accordance with the Incident Notification and Reporting Matrix (see Incident Management Procedure). Reporting to the Regional HSE Manager shall occur as follows: 1A/1P incidents: Notify within one hour of incident 2A/2P incidents: Notify prior to end of shift 3A/3P incidents: Complete report in JHET within three days	Workplace Manager, PER, Safety Advisor/Manager	Following incident
23.	Summary of environmental performance to be provided in the monthly Project Safety/Quality/Environment Report (refer: Performance Statistics – Safety, Quality & Environment T4MR-MPR-SQE-009)	Workplace Manager, PER, Safety Advisor/Manager	Monthly

8.0 Suggested Corrective Actions

Problem	Suggested Corrective Action
Unanticipated Aboriginal or indigenous heritage discovery	• Adhere to the unanticipated discovery protocol in this ECM.
Unanticipated heritage discovery (archaeological or other)	• Adhere to the unanticipated discovery protocol in this ECM.
Incident or event relating to the management of Aboriginal, indigenous or non-indigenous heritage	• Manage event in accordance with the Incident and Event Management Procedure (T4MR-MPR-SQE-010)

2600-0018
N2NS-SP1

Noise and Vibration Environmental Control Map (CEMP)

Document No: : 7632-T4MR-PL-PES-006

Recommend Documents to be Read in Conjunction
This management plan is to be read in conjunction with the Construction Environmental Management Plan, (7632-T4MR-PL-PES-001)

Distribution
There are no restrictions on the distribution or circulation of this ECPM within T4MR.

	Uncontrolled Copy
Authorised By:	Jon Holmes, T4MR Project Director
Date:	05/02/2021

Revisions
Draft issues of this document shall be identified as Revision A, B, C etc. Upon initial issue (generally Contract Award) this shall be changed to a sequential number commencing at Revision 0. Revision numbers shall commence at Rev. 1, 2 etc.

DATE	REV	DETAILS OF CHANGE	SECTION	PREPARED BY	REVIEWED & APPROVED BY
28/10/2020	0	Issue for Construction	All	Pippa Donaldson	Dave Carberry
05/02/2021	1	Issued for Construction (Format and Rebrand Update)	All	Pippa Donaldson	Jon Holmes

1.0 Scope

This Environmental Control Plan is applicable to all construction phase works associated with the Inland Rail Narrabri to North Star SP1 Project (N2NS) (T4MR and subcontractors).

2.0 Objectives

The objectives of this Noise and Vibration Environmental Control Plan are to:

- Minimise the impacts of construction noise and vibration on local communities (nearby sensitive receivers).
- Minimise impacts to neighbourhood amenity.
- Protect buildings from vibration impacts.

3.0 Performance Criteria

3.1 General

1. No verified complaints or community concerns regarding noise and/or vibration.
2. No regulatory action initiated against the Project due to noise and/or vibration.

3.2 Targets

The construction hours for N2NS are defined by **CoA E1** to **E7**. The standard construction hours of work are defined in CoA E1. Works may be carried out outside standard construction hours under Project Planning Approval Conditions. Permitted exceptions are detailed in CoA E2 through to E6. The table below consolidates the information provided in the CoA regarding construction working hours generally for the Project.

APPLICABLE CONSTRUCTION PERIOD	RELEVANT COA	WORKING HOURS APPLICABLE TO COA		
		Monday to Friday	Saturday	Sunday/ Public holiday
Standard construction hours	E1	7:00am to 6:00pm	7:00am to 6:00pm	No work[1]
Out of hours work (OOHW)	E1	6:00pm to 10:00pm 10:00pm to 7:00am	6:00pm to 10:00pm 10:00pm to 8:00am	8:00am to 6:00pm 6:00pm to 10:00pm 10:00pm to 7:00am
Highly noise intensive works[5]	E7	8:00am to 6:00pm (+ respite[2])	8:00am to 1:00pm (+ respite[2])	No work[1]
Permitted hours CoA E2 period[4]	E2	6:00am/ 7.00am[3] to 6:00pm	6:00am to 6:00pm	No work[1]

Notes:

1. No work unless approved in accordance with the CoA.
2. Minimum respite from highly noise intensive works of not less than one (1) hour between each continuous block of works not exceeding three (3) hours. For works relating to this condition, 'continuous' includes any period during which there is less than a one-hour respite between ceasing and recommencing.
3. Works on Mondays are to commence 7.00am.

4. Notwithstanding Condition E1, works affecting any given receiver may be undertaken during the hours of 6.00am to 6.00pm each day over a three (3) month period provided that there is no work between the hours of 6:00pm on a Saturday and 7:00am on a Monday every second week.

5. Except where permitted by a negotiated agreement in accordance CoA E4 and E5, an EPL, or approved through an Out of Hours Works Protocol (for works not subject to an EPL)

4.0 References

4. 1 Legislation and Guidance Documentation

Federal Legislation	State legislation	Local Government Laws	Standards / Codes	Other Documentation
1. *Environmental Protection & Biodiversity Conservation Act 1999*	1. *Environmental Planning and Assessment Act 1979* 2. *Protection of the Environment Operations Act 1997 (POEO Act*		1. Australian Standard AS 2436:2010 Guide to noise and vibration control on construction, maintenance and demolition sites. 2. Environmental Criteria for Road Traffic Noise (EPA 1999) 3. NSW Noise Policy for Industry 2017 4. RTA Environmental Noise Management Manual (RTA 2001) 5. Interim Construction Noise Guideline (DECC 2009) 6. Assessing Vibration: A Technical Guideline (DECC 2006) 7. AS1055.1 – 1997 Acoustics – Description and Measurement of Environmental Noise 8. AS2436 – 2010 Guide to Noise and Vibration Control on Construction, Demolition and Maintenance Sites 9. AS1055 Acoustics – Description and Measurement of Environmental Noise	1. Environment Protection and Biodiversity Conservation Act 1999, Conditions of Approval (EPBC 2016/7729); 2. Critical State Significant Infrastructure Conditions of Approval (SSI 7474); 3. Revised Environmental Management Measure (REMMS); and 4. Secretary's Environmental Assessment Requirements Environmental Protection Outcomes, (SEARs EPOs). 5. Inland Rail Noise and Vibration Management Strategy (01-9000-PE-P11-ST-0003-V3.3) (ARTC 2016) 6. Inland Rail NSW Construction Noise & Vibration Management

			10. AS2659.1 – 1998 Guide to the use of sound measuring equipment – portable sound level meters 11. AS2775 Mechanical Mounting of Accelerometers 12. International Standard IEC 61672.1 Electroacoustic – Sound Level Meters – Specifications 13. International Standard IEC 60942 'Electroacoustics – Sound calibrators 14. ISO 3744 Acoustics – Determination of sound power levels and sound energy levels of noise sources using sound pressure – Engineering methods for an essentially free field over a reflecting plane 15. ISO 3746 Acoustics – Determination of sound power levels and sound energy levels of noise sources using sound pressure – Survey method using an enveloping measurement surface over a reflecting plane 16. ISO 6393 Earth-moving machinery – Determination of sound power level – Stationary test conditions 17. ISO 6395 Earth-moving machinery – Determination of sound power level – Dynamic test conditions.	Framework (0-9000-ENV-00-RP0001) (ARTC 2018) 7. RMS QA Specification G36 – Environmental Protection (Management System)

			18. NATA General Accreditation Guidance – General Equipment – Calibration and Checks, General Equipment Table 2018.	

4.2 Definitions & Abbreviations

1. CA/Client – Contract Administrator/Client
2. JH –T4MR
3. PM – Project Manager
4. SM – Site Manager / Super Intendant
5. Fm – Foreman / Supervisor
6. PER – Project Environmental Representative, (Env Manager or Coordinator)
7. ARTC - Australian Rail Track Corporation
8. WRA – Workplace Risk Assessment
9. AMS – Activity Method Statement
10. TRA – Task Risk Assessment
11. SEMP – Site Establishment Management Plan
12. CEMP –Construction Environmental Management Plan
13. ECM – Environmental Control Map
14. WQO – Water Quality Objectives
15. CAF – Construction Ancillary Facilities
16. CSEM – Community, Stakeholder Engagement Manager

5.0 Noise, Vibration

5.1 Actions

No.	Inductions and Training	Staff Responsible	When
1.	Site inductions will include the following specific components for noise and vibration management: • Noise and vibration sources during construction. • Approved Construction work hours	PER, Safety Advisor/Manager	Workplace Planning
No.	**Site Access**		**When**
1.	**CSSI CoA E1** - Construction activities will be carried out in accordance with the hours in Section 3	PER/ Construction Manager	Project Delivery
2.	Outside of hours work may only be carried out in accordance with: • The Project's Out-of-Hours-Works Protocol; or • The Project's EPL	PER/ Construction Manager	Project Delivery
3.	Traffic flow, parking and loading/unloading areas will be designed to minimise reversing movements within the site.	Engineer	Project Planning
No.	**General**		

1.	GMR 9.7 – Controls must be in place to prevent air pollution, noise, vibration and light impacts to the local community.	PER/Engineers/Supervisors	Workplace Planning
2.	GMR 9.12 – All operations, including deliveries, must not occur outside approved working hours or exceed noise, vibration or light criteria, without prior approval and consultation with relevant stakeholders.	All personnel	Project Delivery
3.	**CSSI CoA E73** - The Proponent must undertake dilapidation surveys on the current condition of surface and subsurface structures owned by third parties and identified at risk from vibration. The dilapidation surveys must be prepared by a suitably qualified and experienced person(s).	PER/ Engineers/ Supervisors	Project Planning
4.	All construction personnel to consider sensitive receptors when undertaking daily activities, in particular at start and end of shifts.	All personnel	Project Delivery
5.	The number of vehicle trips to and from site will be optimised to reduce noise impacts and occur during less sensitive time periods for the receiver adjacent to the Project traffic routes.	All personnel	Project Delivery
6.	Blasting will not be undertaken at any time	All personnel	At all times
7.	Temporary haul roads will be designed to minimise the need for reversing.	Engineers, Supervisors	Workplace Planning
8.	Noise and vibration intensive activities will consider nearby sensitive receivers and structures and implement appropriate mitigation strategies as required.	PER/Engineers/Supervisors	Project Delivery
9.	Vibration management on sensitive receptors will be implemented as per the NVMP	PER/ Supervisor	Project Delivery
	Plant and Equipment	**Staff Responsible**	**When**
1.	All vehicles, plant and equipment will undergo a Plant Hazard Assessment (PHA) prior to gaining access to the site.	Safety Advisor/Manager	Project Delivery
2.	Vehicles, plant and equipment will be regularly inspected and maintained to ensure optimal operation. Daily pre-start inspections and plant/vehicle logbooks will be used to record and determine inspection and maintenance suitability and schedules.	All personnel	Project Delivery
3.	All plant and equipment (including trucks) are to minimise any idling and shall be turned off (or throttled down if appropriate) when not in use.	All personnel	Project Delivery
4.	Where practical, equipment selection will favour the use of quieter and less vibration emitting construction methods, for example, excavator with pulveriser instead of rockhammer; operate vibratory rollers with the vibratory mode switched off to reduce vibration impact.	Plant operators	Project Delivery
5.	Equipment with directional noise characteristics (emits noise strongly in a particular direction) are to be orientated so that the noise is directed away from sensitive receivers.	All personnel	Project Delivery
6.	Where practical, implement the use of reasonable enclosures or acoustic barriers to reduce the noise impacts of stationary noise sources, (pumps, compressors, generators etc).	All personnel	Project Delivery

7.	Horns shall not be used as communication devices, two-way radios or hand signals shall be the preferred method of communication between plant/vehicle operators and other work crew members.	All personnel	Project Delivery
6.0 Monitoring			
No	**Monitoring Required**	**Staff Responsible**	**When**
1	**CoA C14-**A Noise and Vibration Monitoring Plan must be prepared to compare actual performance of construction of the CSSI agains performance predicted in Condition 1A	**PER**	**Project PLanning**
2.	Vibration and noise monitoring may be required in response to complaints. ▸ Noise or vibration monitoring in response to complaints will be undertaken where the results or the process assist in resolving or understanding the receiver's issue.	PER/ CSEM	On receipt of complaint or community concern
3.	Effectiveness of noise and vibration controls shall be regularly reviewed for adequacy having regard for changing circumstances.	PER/Engineers/Supervisors	Regularly during Project Delivery
4.	Physical noise and vibration monitoring results to be maintained in Project Pack Web, and made available to relevant parties upon request.	PER	As required
7.0 Reporting			
No	**Reporting Required**	**Staff Responsible**	**When**
1.	All monitoring results are to be maintained in Project Pack Web.	PER	Project Delivery
2.	All complaints / incidents regarding noise and vibration shall be reported immediately to the PER.	All Staff	Following complaint/incident
3.	Incidents details shall be entered into JHET in accordance with the Incident and Event Management Procedure (T4MR-MPR-SQE-010)	PER	Following Incident
4.	**CSSI CoA-** On becoming aware of the need for emergency works in accordance with Condition E3(b), the Proponent must notify the Department in writing to **compliance@planning.nsw.gov.au**, the ER and the EPA of the need for that work. The Proponent must use best endeavours to notify all affected sensitive receivers of the likely impact and duration of those works.	Safety Manager	Following Incident
5.	Environmental event or potential noncompliance with the Environmental Statutory Requirements occur, Trans4m will immediately inform the ARTC Senior Environmental Advisor and/or ARTC Field Advisor and provide enough detail to determine if any Authority notification is required (as per CoA requirements and/or any other Statutory Requirements) to ARTC and additionally **IREnvironmentCompliance@ARTC.com.au**	PER	Following Incident

6.	Incidents shall be reported to Regional, Group and External Agencies in accordance with the Incident Notification and Reporting Matrix (refer to Incident and Event Management Procedure). Reporting to the Regional Operations Environment Manager shall occur as follows: 1A/1P incidents: Notify within one hour of incident 2A/2P incidents: Notify prior to end of shift 3A/3P incidents: Complete report in JHET within three days	PM / PER	Following incident
7.	Summary of environmental incident management to be provided in the monthly Project Safety/Quality/Environment Report (refer: Performance Statistics – Safety, Quality & Environment (T4MR-MPR-SQE-009)	PER	Monthly

8.0 Suggested Corrective Actions

Problem	Suggested Corrective Action
Community concern received relating to noise and/or vibration	• Investigate • Consult with Supervisors, plant/equipment Operators, Project Engineers, Construction Manager • Conduct physical monitoring (be undertaken under the guidance of a suitably qualified person) • Implement appropriate management and mitigation measures • Enter details of event into JHET
Physical property damage determined to be caused by the Project construction works	• Carry out rectification works along with any reasonable requirements of the structure or sub-surface structure owner within three (3) months of the completion of the post-dilapidation survey

2600-0018
N2NS-SP1

Waste and Resource Environmental Control Map

Document No: 7632-T4MR-PL-PES-007

Recommend Documents to be Read in Conjunction
This management plan is to be read in conjunction with the Construction Environment Management Plan: (7632-T4MR-PL-PES-001)

Distribution
There are no restrictions on the distribution or circulation of this ECP within T4MR.

	Uncontrolled Copy
Authorised By:	Jon Holmes, T4MR Project Director
Date:	05/02/2021

Revisions
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DATE	REV	DETAILS OF CHANGE	SECTION	PREPARED BY	REVIEWED & APPROVED BY
28/10/2020	0	Issue for Construction	All	Pippa Donaldson	David Carberry
05/02/2021	1	Issued for Construction (Format and Rebrand Update)	All	Pippa Donaldson	Jon Holmes

1.0 Scope

This Environmental Control Plan is applicable to all ancillary and construction phase works associated with the 2600-0018/-N2NS-SP1; (T4MR and subcontractors).

2.0 Objectives

The objectives of this Waste ECP is to:

- Prevent environmental impacts from waste generated during all phases of the Project.
- Maximise waste reuse and recycling.

3.0 Performance Criteria

3.1 General

1. No environmental incidents resulting from waste management.
2. Identify and implement measures to minimise waste during construction.
3. Recycling and re-use of waste wherever practicable.
4. Quantity of waste delivered to landfill minimised wherever practicable.
5. Hazardous and non-hazardous chemicals and substances used during all phases of the Project will be selected and managed to minimise the potential adverse environmental impacts associated with their disposal.
6. Monitoring of all wastes is undertaken.

3.2 Targets

Optimise resource efficiency and waste management

- Identify and implement opportunities to reduce material use and maximise the use of materials with low embodied environmental impact.
- Reduce construct greenhouse gas (GHG) emissions by 15%.
- Landfill diversion targets:
  - 80-100% by volume of spoil
  - 50-90% by volume of inert and non-hazardous waste
  - 40-60% by volume of office waste
- Reduce potable water by 10%across the project from the base case
- Reuse 50% of wastewater on site.

4.0 References

4. 1 Legislation and Guidance Documentation

Federal Legislation	State legislation	Local Government Laws	Standards / Codes	Other Documentation
1. Hazardous Waste (Regulation of Exports and Imports) Act 1989 2. National Environment Protection (Used Packaging Materials) Measure 2011 (Commonwealth)	1. Protection of the Environment Operations Act 1997 2. Protection of the Environment Operations (Waste) Regulation 2014 3. Waste Classification Guidelines (EPA, 2014). 4. Waste Avoidance and Resource Recovery Act 2001 5. Work Health and Safety Regulation 2017,		1. Construction and Demolition Waste: A Management Toolkit 2. Environmental Guidelines: Solid Waste Landfills, Second Edition 2016 3. Tracking and Transporting Hazardous Waste 4. NSW Asbestos Waste Strategy 2019-21 5. Waste Avoidance and Resource Recovery Strategy 6. WasteLocate: Asbestos 7. WasteLocate: Tyres	1. *Environment Protection and Biodiversity Conservation* Act *1999*, Conditions of Approval (EPBC referral reference 2016/7729); 2. Critical State Significant Infrastructure Conditions of Approval (Application No. SSI 7474)and Res; 3. Revised Environmental Management Measure (REMMS); and 4. Secretary's Environmental Assessment Requirements Environmental Protection Outcomes, (SEARs EPOs). 5. T4MR Global Mandatory Requirements (GMR #11)

4.2 Definitions & Abbreviations

- CA/Client – Contract Administrator/Client
- JH –T4MR
- JHET – T4MR Event Tracker
- PM – Project Manager
- SM – Site Manager / Superintendent
- Fm – Foreman / Supervisor
- PER – Project Environmental Representative, (Env Manager or Coordinator)
- TRA – Task Risk Assessment
- SEMP – Site Establishment Management Plan
- CEMP –Construction Environmental Management Plan
- ECM – Environmental Control Map
- EPA – Environmental Protection Authority
- AMS – Activity Method Statement

• ARTC - Australian Rail Track Corporation • EC – Environment Coordinator • CM- Commercial Manager • WRA – Workplace Risk Assessment	

5.0 Waste and Resource Management			
5.1 Actions			
No.	**Pre Construction**	**Staff Responsible**	**When**
1.	**CSSI Conditions of Approval A21** - Facilities including lunch sheds, office sheds, material lay down sites, stockpile areas, areas used to assemble infrastructure, and portable toilet facilities can be established and operated where they satisfy the following criteria i. low environmental impact with respect to waste management and flooding,	EM/ Engineers	Pre construction
No.	**Inductions and Training**	**Staff Responsible**	**When**
1.	Site inductions will include the following specific components for waste management: • Identification of waste types, including non-hazardous waste, hazardous waste and Listed/Controlled/Regulated wastes. • Key requirements for handling, transportation and storage, including segregation of wastes. • Waste storage facilities on the Site.	EM	Project Delivery
2.	Personnel who routinely handle hazardous chemicals or hazardous or Listed/Controlled/Regulated waste (e.g. refuelling personnel, pump operators, mechanics and stores personnel) will receive training in handling, transporting and storing hazardous chemicals or hazardous Listed/Controlled/Regulated wastes; in reporting and documentation requirements; and in spill clean-up techniques and practice.	EM/EC Project Safety Advisor/Manager, First Aiders	Project Delivery
3.	All subcontractors that will produce waste will be provided with an NGER Data Letter and Subcontractor Energy, Water and Waste Report prior to commencing on site. Refer: T4MR-MPR-ENV-002 Resource Use Reporting	EM/ CM	Workplace Planning
No.	**Waste Avoidance and Reduction**		**When**
1.	GMR 11.1 – A plan, describing methods to minimise waste and maximise efficient use of resources must be implemented and monitored.	EM, Engineers	Workplace Planning
2.	GMR 11.5 – All workplaces must recycled construction and demolition waste, paper, cardboard, electronics, printer cartridges, fluorescent lights, glass, plastics and batteries, where recycling services are available.	All personnel	Project Delivery
3.	GMR 11.7 – Material for re-use, recycling or disposal must be segregated and located in areas that are clearly defined and well signed.	All personnel	Project Delivery
4.	Waste minimisation measures will be included in tendering, subcontracting and procurement processes wherever practicable.	EM, Engineers, Supervisors	Workplace Planning

5.	Existing items will be re-used wherever practicable to reduce wherever practicable to reduce the need for additional purchases.	All personnel	Project Delivery
6.	**CSSI Conditions of Approval E87-** Waste generated during construction and operation is to be dealt with in accordance with the following priorities: (a) waste generation is to be avoided and where avoidance is not reasonably practicable, waste generation is to be reduced; (b) where avoiding or reducing waste is not possible, waste is to be re-used, recycled, or recovered in accordance with the requirements of the Protection of the Environment Operations Act 1997 and its regulations; and (c) where re-using, recycling or recovering waste is not possible, waste is to be treated or disposed of at a waste management facility or premise lawfully permitted to accept the materials or in accordance with a Resource Recovery Exemption or Order issued under the Protection of the Environment Operations (Waste) Regulation 2014, or to any other place that can lawfully accept such waste.	All personnel	Project Delivery
7.	All waste wherever practicable will be either segregated on-site or comingled and separated off-site. Waste will then be reused, recycled or disposed of in an appropriate manner at licensed facilities. Waste segregation measures will consider separate bins for: • General waste (construction and other) • Concrete/masonry waste • Metals • Paper, cardboard etc. • Plastics • Glass • Hazardous wastes	All personnel	Project Delivery
8.	Recycling bins will be provided in office and crib rooms.	EM/EC, Engineers	Project Delivery
9.	Recycling skips (co-mingled or otherwise) will be provided within the vicinity of on-site works.	EM/EC, Engineers, Supervisors	Project Delivery
10.	**CSSI Conditions of Approval E88-** The importation of waste and the storage, treatment, process, reprocessing or disposal of such waste must comply with the conditions of the current EPL for the CSSI, or be done in accordance with a Resource Recovery Exemption or Order issued under the Protection of the Environment Operations (Waste) Regulation 2014, as the case may be.	EM/EC, Engineers, Supervisors	Project Delivery

11.	**CSSI Conditions of Approval E89-** Waste must only be exported to a site licensed by the EPA for the storage, treatment, processing, reprocessing or disposal of the subject waste, or in accordance with a Resource Recovery Exemption or Order issued under the Protection of the Environment Operations (Waste) Regulation 2014, or to any other place that can lawfully accept such waste. Note: Notice must be given to the relevant site/s as soon as possible, and no more than 14 days before the proposed waste disposal.	EM/EC	Project Delivery
12.	**Key Issue (as Listed in the SEARS)-** Any soil waste is assessed, classified, managed and disposed of in accordance with the Waste Classification Guidelines (EPA, 2014).	EM/EC	Project Delivery
No.	**General Waste Handling, Housekeeping and Storage**		
1.	GMR 11.8 – Spoil and inert waste to be reused off-site must be risk assessed and meet legal requirements prior to transportation.	EM/EC, Safety Advisor/Manager, Supervisors	Project Delivery
2.	GMR 11.9 – Spoil and waste for disposal must be classified and transported by appropriately licensed contractors to licensed or approved facilities.	EM/EC, Safety Advisor/Manager, Supervisors	Project Delivery
3.	Waste bins and skips will be provided for all office and crib facilities. Wastes will be separated into recyclable waste, non-recyclable waste and Listed/Controlled/Regulated waste.	All personnel	Project Delivery
4.	Waste skips/bins will meet the following provisions: • Adequate number for waste segregation (recycling, re-use and disposal) and sufficient volume; • Labelled to clearly identify the contents; • Appropriate for the waste being contained – be compatible, leak-proof and fit for purpose; • Be accessible and appropriately located; • Be covered (where necessary) to prevent ingress of rain and prevent animals from entering.	EM/EC, Safety Advisor/Manager, Engineers, Supervisors	Project Delivery
5.	Sanitary waste facilities will be provided for all female ablutions.	All personnel	Project Delivery

6.	Waste will be removed by an appropriately licensed waste subcontractor and taken to an appropriately licensed recovery or disposal facility. The subcontractor is to provide monthly reports detailing: • Date(s) of waste collection • Description of waste • Cross reference to relevant waste transport documentation • Quantity of waste collected • Origin of waste • Destination of waste (for listed/controlled/regulated wastes) • Intended fate of waste, e.g. re-use, recycling or disposal. Refer: T4MRMPR-ENV-002 Resource Use Reporting	EM/EC, Safety Advisor/Manager	Project Delivery
7.	No waste is to be burned or buried on Site.		
	Listed/Controlled/Regulated Waste Management	**Staff Responsible**	**When**
1.	**CSSI Conditions of Approval E90-** All waste generated during construction and operation must be classified in accordance with the EPA's Waste Classification Guidelines, with appropriate records and disposal dockets retained for audit purposes.	EM/EC, Engineers, Supervisors	Project Delivery
2.	**EIS/SPIR Component- Soils and Contamination-** Soils in the vicinity of location **TP305** would be classified as Special Waste (Asbestos). Soils sampled at other test pit locations along the rail corridor are consistent with a General Solid Waste classification.	EM/EC, Engineers, Supervisors	Project Delivery
1.	Listed/Controlled/Regulated waste which will require segregation typically include, but are not limited to: • Waste oil • Oil filters • Grease • Coolant • Solvents • Oily-water mixtures • Empty hydrocarbon drums • Absorbent materials contaminated with hydrocarbons • Contaminated soil • Tyres • Sanitary and clinical wastes • Sewage	All personnel	Project Delivery

2.	Dedicated waste receptacles suitable for storage and segregation of Listed/Controlled/Regulated wastes will be provided as necessary. Containers and storage areas will comply with storage requirements as per SDS and relevant Australian Standards. Refer Storage and Control of Hazardous Chemicals (refer to Hazardous Chemical Management Procedure) and Hazardous Chemical Disposal Requirements (refer to Hazardous Chemical Management Procedure).	EM/EC, Safety Advisor/Manager	Project Delivery
3.	All Listed/Controlled/Regulated waste will be removed by an appropriately licensed waste contractor who holds a current license to transport such waste. The waste contractor will provide: • A copy of their current license (record to be retained) • Records for all Listed/Controlled/Regulated waste (in the form of a Waste Transport Certificate or equivalent)	EM/EC, Safety Advisor/Manager	Project Delivery
4.	Soil contaminated with hydrocarbons will be managed as Listed/Controlled/Regulated waste. Depending on the size of contamination appropriate protection, storage, testing and remediation are to occur.	EM/EC, Safety Advisor/Manager	Project Delivery
5.	Where applicable, waste transport certificate documentation will be completed for each load of Listed/Controlled/Regulated waste removed from Site.	EM/EC, Safety Advisor/Manager	Project Delivery

6.0 Monitoring

No	Monitoring Required	Staff Responsible	When
1.	Waste management will be monitored daily, with observations entered into daily diaries where necessary.	EM/EC, Safety Advisor/Manager, Engineers, Supervisors	Daily
2.	Waste management will be inspected as part of a weekly environment or HSE site inspection. Results of the weekly inspection will be entered into JHET.	EM/EC, Safety Advisor/Manager, Engineers, Supervisors	Weekly

7.0 Reporting

No	Reporting Required	Staff Responsible	When
1.	All subcontractors will provide an Energy, Water and Waste Report in accordance with T4MR-MPR-ENV-002 Resource Use Reporting	CM/Subcontractors	Monthly
2.	Records of waste quantities generated (including that reported by subcontractors) and any associated waste transport certificate documentation will be entered into Project Pack Web in accordance with T4MR-MPR-ENV-002 Resource Use Reporting.	EM/EC	Project Delivery

3.	Details of field observations will be reported via the Weekly Environmental Inspection Checklist, and communicated to staff during pre-starts, toolbox and team meetings as appropriate.	EM/EC, Safety Advisor/Manager	Project Delivery
4.	All inspection records are to be maintained in JHET.	EM/EC, Safety Advisor/Manager	Project Delivery
5.	Complaints / incidents regarding waste will be reported immediately to the EM/EC and/or Safety Advisor/Manager.	All personnel	Following incident
6.	Environmental event or potential non-compliance with Environmental Statutory Requirements occur, Trans4m will immediately inform the ARTC Senior Environmental Advisor and/or ARTC Environmental Field Advisor and provide enough detail to determine if any Authority notification is required (as per CoA requirements and/or any other Statutory Requirements) to ARTC and additionally IREnvironmentCompliance@ARTC.com.au.	EM/EC, Safety Manager	Following Incident
7.	Incident details will be entered into Project EMS in accordance with the Incident and Event Management Procedure (T4MR-MPR-SQE-010)	EM/EC, Safety Advisor/Manager	Following Incident
8.	Incidents will be reported to Regional, Group and External Agencies in accordance with the Incident Notification and Reporting Matrix (refer to Incident Management Procedure). Reporting to the Regional HSE Manager shall occur as follows: 1A/1P incidents: Notify within one hour of incident 2A/2P incidents: Notify prior to end of shift 3A/3P incidents: Complete report in JHET within three days	Workplace Manager, EM/EC, Safety Advisor/Manager	Following incident
9.	Summary of environmental performance to be provided in the monthly Project Safety/Quality/Environment Report (refer: Performance Statistics – Safety, Quality & Environment T4MRMPR-SQE-009)	Workplace Manager, EM/EC, Safety Advisor/Manager	Monthly

8.0 Suggested Corrective Actions

Problem	Suggested Corrective Action
Wastes incorrectly separated/segregated	• Inspect facilities for adequacy • Notify and train personnel
No/inadequate collection	• Arrange for collection by approved/licensed waste contractor • Segregate and reuse or recycle wastes wherever practicable
Reuse or recycling opportunity not recognised	• Train/re-train personnel • Arrange for recycling collection by approved/licensed waste contractor
Unlicensed operator	• Confirm operator license/s are appropriate for the required service.

Incorrect disposal	• Confirm suitability of waste removal contractor. • Confirm/inspect disposal facilities for suitability. • Notify/train personnel.
Contamination of the Site	• Notify client, assess degree and real extent of contamination. • Prevent access to the area. • Cover contamination to prevent exposure to rain. • Remove contaminated material and remediate in accordance with Regulator/Client requirements.
Inaccurate records management	• Update records • Improve reporting system • Train personnel

2600-0018
N2NS-SP1

Water Quality, Erosion And Sediment Environmental Control Map

Document No: 7632-T4MR-PL-PES-008

Recommend Documents to be Read in Conjunction
This management plan it to be read in conjunction with the Construction Environment Management Plan, (7632-T4MR-PL-PES-001)

Distribution
There are no restrictions on the distribution or circulation of this ECM within T4MR.

	Uncontrolled Copy
Authorised By:	Jon Holmes, T4MR Project Director
Date:	05/02/2021

Revisions
Draft issues of this document shall be identified as Revision A, B, C etc. Upon initial issue (generally Contract Award) this shall be changed to a sequential number commencing at Revision 0. Revision numbers shall commence at Rev. 1, 2 etc.

DATE	REV	DETAILS OF CHANGE	SECTION	PREPARED BY	REVIEWED & APPROVED BY
28/10/2020	0	Issue for Construction	All	Pippa Donaldson	Jon Holmes
05/02/2021	1	Issued for Construction (Format and Rebrand Update)	All	Pippa Donaldson	Jon Holmes

1.0 Scope

This Environmental Control Plan is applicable to all construction phase works associated with the Inland Rail Narrabri to North Star SP1 Project (N2NS) (T4MR and subcontractors).

2.0 Objectives

The objectives of this Water Quality, Erosion and Sediment Environmental Control Plan are to:

- Minimise the risk of increased erosion and/or sediment deposition on the surrounding environment;
- Introduce appropriate measures to prevent surface and groundwater degradation;
- Ensure that water quality objectives (WQOs) defined in this ECM are met throughout all construction activities;
- Ensure compliance with all contractual and legislative requirements; and
- Through all of the above, reduce the impact of construction activities on the environment.

3.0 Performance Criteria

3.1 General

1. Construction activities undertaken in accordance with this ECM
2. All sites stable with no uncontrolled sediment leaving the worksite
3. Compliance with relevant contractual requirements, legislation, standards and codes
4. Watercourses protected to prevent deterioration, sedimentation and contamination
5. Vegetation retained to the fullest extent possible – where vegetation is to be cleared, erosion controls are immediately implemented
6. The Project embodies and promotes a positive, responsible image and practices to the Client and observing community

3.2 Targets and Water Quality Objectives (WQO)

The following WQO will be used to establish the minimum standard any construction water on site to meet before active discharge offsite:

Discharge to Stormwater / Watercourse				Dispersed Discharge to Land	
Water Parameter	Objective	Units		Objective	Units
pH	6.5 – 8.5	pH		6.5 – 8.5	pH
Turbidity	< 50	TSS		N/A	N/A
Hydrocarbons	No hydrocarbon sheens observed	N/A		No hydrocarbon sheens observed	N/A

4.0 References

4. 1 Legislation and Guidance Documentation

Federal Legislation	State legislation	Local Government Laws	Standards / Codes	Other Documentation
1. *Environmental Protection & Biodiversity Conservation Act 1999*	1. *Protection of the Environment Operations Act 1997* 2. *Protection of the Environment Operations (General) Regulation 2009* 3. *Water Act 1912* 4. *Water NSW Act 2014* 5. *Water NSW Regulation 2020* 6. *Water Management Act 2000* 7. *Environmental Planning and Assessment Act (1979);* 8. *Biodiversity Conservation Act (2016);* 9. *Fisheries Management Act (1994);*	1. *Local Government Act 1993*	1. Best Practice Erosion and Sediment Control (IECA, 2008) 2. Managing Urban Stormwater: Soil and Construction (Landcom, 2004) ('Blue Book') 3. Australia and New Zealand Guidelines for Fresh and Marine Water Quality (Australian and New Zealand Environment and Conservation Council, 2000) 4. AS/NZS 5667.1:1998 – Water quality – Sampling – Guidelines on the design of sampling programs, sampling techniques and the preservation and handling of samples 5. AS/NZS 5667.12:1998 – Water quality – Sampling – Guidance on sampling bottom sediments 6. AS/NZS 5667.11:1998 – Water quality – Sampling – Guidance of sampling of groundwaters	1. Environment Protection and Biodiversity Conservation Act 1999, Conditions of Approval (EPBC 2016/7729); 2. Critical State Significant Infrastructure Conditions of Approval (Application No. SSI 7474); 3. Revised Environmental Management Measure (REMMS); and 4. Secretary's Environmental Assessment Requirements Environmental Protection Outcomes, (SEARs EPOs). 5. Primary Sediment and Erosion Control Plan (7632-T4MR-PL-PES-009) 6. Progressive ESCP's 7. Constrution Environmental Management Plan 8. RMS QA Specification G38 – Soil and Water Management 9. RMS Code of Practice for Water Management, the RMS Erosion and Sedimentation Procedure (1999)

4.2 Definitions & Abbreviations

- CA/Client – Contract Administrator/Client
- JH –T4MR
- PM – Project Manager
- SM – Site Manager / Super Intendant
- Fm – Foreman / Supervisor
- PER – Project Environmental Representative, (Env Manager or Coordinator)
- ARTC - Australian Rail Track Corporation
- WRA – Workplace Risk Assessment
- AMS – Activity Method Statement
- TRA – Task Risk Assessment
- SEMP – Site Establishment Management Plan
- CEMP –Construction Environmental Management Plan
- ECM – Environmental Control Map
- EPA – Environmental Protection Authority
- WQO – Water Quality Objectives
- PESCP – Progressive Erosion & Sediment Control Plan
- CPESC – Certified Professional Erosion & Sediment Control
- SWMP – Soil and Water Management Plan

5.0 Water Quality, Erosion and Sediment Management

5.1 Actions

No.	Design and Planning	Staff Responsible	When
1.	Site specific progressive ESCP's are to highlight the construction work area limits of works, No-GO zones and type and location of site wide erosion and sediment controls.	PER	Workplace Planning
2.	PESCP's will be designed, developed and installed in accordance with the Civil Drawings and Landcom 'Blue Book'/IECA Best Practice Erosion and Sediment Control Guidelines.	PER/Engineers/CPESC	Workplace Planning
3.	As per references above, PESCP's will be developed in accordance to: • Local climatic conditions and seasonal variations; • Soil types, particularly dispersive, sodic or saline soils; • Local hydrology affecting the construction zone; • Local drainage, including temporary and overland flow paths and quantities.	PER/Engineers/ CPESC	Workplace Planning
4.	Works will limit as far as practicable the disturbance of vegetation, waterways and drainage lines	PER/CPESC	Workplace Planning

5.	Works within or over designated watercourses will be assessed against the relevant jurisdictional regulations, codes, standards and/or guidelines to assess whether permits or licensing applies. The relevant planning, fisheries or waterways authorities must be identified and consulted during the planning and design phases.	PER/Engineers	Workplace Planning
No.	**Inductions and Training**		**When**
1.	Site inductions will include the following specific components for surface water and erosion & sediment control management: • Awareness of General Environmental Duty and Dutiy to Notify, (legislative obligations) • Site requirements relating to stormwater and construction water management, including the requirement for water quality validation prior to recycling or re-use and prior to active discharge from Site to the environment. • General understanding of mechanisms by which erosion and sedimentation occur, and the associated environmental impacts • The purpose of erosion and sediment control devices to mitigate impacts, and ideal operation of these devices • The requirement for erosion and sediment control devices to be implemented and maintained in accordance with Soil and Water Management Plan and Erosion & Sediment Control Maps	PER	Project Delivery
2.	All personnel involved in active discharge of surface water from Site will be appropriately trained including in monitoring, treatment and discharge requirements.	PER	Project Delivery
3.	Surface water and erosion & sediment control toolbox talks will be implemented as relevant and required to reinforce information provided during site inductions.	PER	Project Delivery
No.	**Site Preparation/Clearing**		
1.	GMR 10.1 – Clearing limits must be clearly identified and physically demarcated.	PER/Engineers/Supervisors	Workplace Planning
2.	Vegetation to be protected/retained shall be clearly marked and identifiable both on an ECM and physically.	PER/Engineers/Supervisors	Workplace Planning
3.	Clearing shall be planned in accordance with approved design documentation and further minimised – retaining grass and other vegetation to the fullest extent practicable.	PER/Engineers/Supervisors	Project Delivery
4.	Stabilised construction access/egress points shall be installed as per PESCP's	PER/Engineers/Supervisors	Project Delivery
5.	Where practicable, staging of any clearing of vegetation shall be implemented to reduce the potential for erosion and sediment movement, reducing dependency on erosion and sediment controls.	PER/Engineers/Supervisors	Project Delivery
6.	Where practicable, clearing shall occur immediately prior to construction activities to minimise the potential for erosion.	PER/Engineers/Supervisors	Project Delivery

7.	PESCP's controls will be installed in conjunction with clearing works or immediately after.		
	Plant movement and access	**Staff Responsible**	**When**
1.	GMR 9.8 – Controls must be in place to prevent tracking dirt and mud onto roads.	PER/Engineers/Supervisors	Project Delivery
2.	GMR 9.9 – Mobile plant and vehicles, including deliveries must use designated travel routes, site access routes, site access tracks and lay down areas.	All personnel	Project Delivery
3.	GMR 9.10 – Mobile plant and vehicles must be clean of any mud or organic material prior to arriving or departing from site to prevent the spread of weeds and disease.	All personnel	Project Delivery
4.	Access roads to be clearly marked using star pickets, wire tape or flagging. Location of access roads to be marked on ECM's and PESCP's.	PER/Engineers/Supervisors	Project Delivery
5.	Whilst on site, vehicles to remain on the designated roadways and observe the site speed limits.	All personnel	Project Delivery
6.	No plant or machinery is to work in flowing waterways unless authorised by relevant government waterway or fisheries authority.	All personnel	Project Delivery
7.	Vehicle and plant to park in designated hard stand zones when not in use.	All personnel	Project Delivery
8.	During periods of wet conditions, suitable construction activities and plant movements to be considered such as to minimise the movement of vehicles on site during these periods.	All personnel	Project Delivery
9.	Spoil, mud or the like spilt onto sealed roads to be removed within a reasonable timeframe through use of a street sweeper or other means.	PER/Engineers/Supervisors	Project Delivery
	General Requirements	**Staff Responsible**	**When**
1.	GMR 9.4 – When working in or over water, within flood affected areas or intersecting groundwater, controls (PESCP), must be in place and maintained to prevent pollution.	PER/Engineers/Supervisors	Project Delivery
2.	GMR 9.6 – Washout facilities must be in place and used for cleaning plant and equipment, concrete, paint or other environmentally hazardous substances.	PER/Engineers/Supervisors	Project Delivery
3.	GMR 10.2 – Water diversion controls (PESCP), must be in place to prevent water entering the work area to minimise erosion and prevent pollution.	PER/Engineers/Supervisors	Project Delivery
4.	GMR 10.3 – Areas of exposed earth must have erosion and sediment controls designed, installed, maintained and continually monitored for effectiveness.	PER/Engineers/Supervisors	Project Delivery
5.	Erosion and sediment controls shall be cleaned or replaced prior to accumulated sediments and obstructions reducing their effective operating capacity by 60%.	PER/Engineers/Supervisors	Project Delivery
6.	Removed sediment to be added to existing stockpiles, redistributed to land outside of overland flow paths or appropriately disposed form Site.	PER/Engineers/Supervisors	Project Delivery
7.	Sediment controls that are damaged or otherwise rendered ineffective shall be immediately replaced.	PER/Engineers/Supervisors	Project Delivery
8.	Prolonged open excavations shall have berms and/or diversion drains on their perimeter to divert overland storm water runoff away from the excavation. Where possible, suitable controls to reduce flow velocity and minimise erosion to be utilised within the drainage channel. (Ref PESCP)	PER/Engineers/Supervisors	Project Delivery

9.	PESCP's will be developed to include reasonable and practical prevention, and will consider the receiving environment, water quality objectives, quality and quantity of water, location and accessibility, and any other site specific requirements.	PER/Engineers/Supervisors	Project Delivery
10	The PER will provide direction for the location, installation, maintenance and removal of erosion and sediment control devices in accordance with PESCP's, this ECM and other associated ECMs. Control devices shall remain in place until approval is given for their removal by the PER.	PER/Engineers/Supervisors	Project Delivery
	Stockpiling, Stabilisation, Rehabilitation and De-mobilisation	**Staff Responsible**	**When**
1.	GMR 10.4 – Excavated materials of different types must be segregated, stockpiled, stabilised and/or bunded. (Ref PESCP)	PER/Engineers/Supervisors	Project Delivery
2.	No temporary construction stockpiles to be located within drainage lines, flood zones or any area otherwise likely to be inundated with water.	PER/Engineers/Supervisors	Project Delivery
3.	Suppress earthworks, batters, access tracks and other exposed areas with a bonding agent or water on dry windy days to minimise soil erosion and dust.	PER/Engineers/Supervisors	Project Delivery
4.	Long term (> 10 days) stockpiles, batters and other erosion sensitive areas shall be adequately stabilised through velocity reduction covering, grassing, vegetation, soil binding, water diversion or other as appropriate.	PER/Engineers/Supervisors	Project Delivery
5.	Where suitable, silt fencing or equivalent measures shall be installed around the perimeter of exposed/disturbed soil stockpiles and at the toe of exposed batters.	PER/Engineers/Supervisors	Project Delivery
6.	Vegetation to be progressively re-established as soon as practicable to prevent erosion and slope degradation during construction.	PER/Engineers/Supervisors	Project Delivery
7.	Revegetation species shall be in accordance with any contractual requirements.	PER/Engineers/Supervisors	Project Delivery
8.	Erosion and sediment controls shall remain in place until 70 % or more of natural ground cover has recovered	PER/Engineers/Supervisors	Project Delivery
9.	All cleared areas to be stabilised/restored as soon as practicable following completion.	PER/Engineers/Supervisors	Project Delivery
	Materials Handling and Storage	**Staff Responsible**	**When**
1.	GMR 9.5 – When planning the location of facilities, plant laydown areas, refuelling areas, stockpiles or chemical storage, areas that drain towards surface water or stormwater systems must be avoided in order to minimise risk of pollution. (Ref PESCP)	PER/Engineers/Supervisors	Workplace Planning
2.	GMR 9.13 - Chemicals and fuel must be labelled and stored in bunded areas in accordance with the safety data sheet (SDS)	All personnel	Project Delivery
3.	GMR 9.14 – Spill kits and fire response equipment must be located where chemcials and fuelled plant or equipment is being stored, operated or maintained.	All personnel	Project Delivery
4.	Refuelling shall wherever practicable occur in designated hardstand areas or over appropriate bunds.	All	Project Delivery

5.	Where refuelling of mobile plant in the field is required, it shall take place on level ground, an appropriate distance from watercourses and shall be accompanied by a spotter and suitable spill kit. Measures shall be taken to contain fuel drip during transfer.	All	Project Delivery
	De-watering and Discharge	**Staff Responsible**	**When**
1.	GMR 10.6 – All dewatering systems must be planned and monitored to avoid spills, overflows and pollution.	PER/Engineers/Supervisors	Project Delivery
2.	All runoff emanating from the site must be effectively treated via PESCP controls or if actively discharged, treated so that the water quality meets water discharge limits specified in Section 3.2.	PER/Engineers/Supervisors	Project Delivery
3.	No discharge of ponded water is to occur unless the water quality is within project WQO limits set out in Section 3.2. Where compliance with WQOs is not met, water shall be treated as per detail in Section 6.0. Field testing by the PER shall record compliance with project WQOs prior to discharge.	PER/Engineers/Supervisors	Project Delivery
	Groundwater	**Staff Responsible**	**When**
4.	In the event groundwater is intercepted, related works shall cease and the PER and, where necessary, Regional Operations Environment Manager shall be immediately consulted.	Engineers/Supervisors	Project Delivery
6.0 Monitoring			
No	**Monitoring Required**	**Staff Responsible**	**When**
1.	General observations for the daily management of erosion and sediment controls shall be documented in site dairies.	PER/Engineers/Supervisors	Daily during Project Delivery
2.	Regular, (or after a significant rainfall event), inspections of erosion and sediment controls shall be undertaken using the Weekly Environmental Management Inspection Checklist and uploaded to Project Pack Web.	PER/Engineers/Supervisors	Weekly and during and after storm events >10mm
3.	Effectiveness of erosion and sediment controls shall be regularly reviewed for adequacy having regard for changing circumstances.	PER/Engineers/Supervisors	Regularly during Project Delivery
4.	Prior to any off-site discharge, water to be tested and adjusted as appropriate to meet WQO limits. Records to be maintained in Project Pack Web.	PER/Engineers/Supervisors	Prior to discharge
5.	Water quality monitoring results to be maintained in Project Pack Web, and made available to relevant parties upon request.	PER	As required
7.0 Reporting			
No	**Reporting Required**	**Staff Responsible**	**When**
1.	Details of field observations shall be reported via the Weekly Environmental Inspection Checklist, and communicated to staff during pre-starts, toolbox and team meetings as appropriate.	PER	Project Delivery
2.	All monitoring results are to be maintained in Project Pack Web.	PER	Project Delivery
3.	All complaints / incidents regarding water quality, erosion and sediment control shall be reported immediately to the PER.	All Staff	Following complaint/incident
4.	Incidents details shall be entered into JHET in accordance with the Incident Management Procedure (T4MR-MPR-SQE-010)	PER	Following Incident

5.	Environmental event, (greater than Report Only or Class 3, as per Trans4mRail Environment Incident Severity Classification table T4MR-APP-SQE-010-03), or potential noncompliance with the Environmental Statutory Requirements will immediately be notified to ARTC Senior Environmental Advisor and/or ARTC Field Advisor and provide enough detail to determine if any Authority notification is required (as per CoA requirements and/or any other Statutory Requirements) to ARTC and additionally **IREnvironmentCompliance@ARTC.com.au**	PER	Following Incident
6.	Incidents shall be reported to Regional, Group and External Agencies in accordance with the Incident Notification and Reporting Matrix (refer to Incident and Event Management Procedure). Reporting to the Regional Operations Environment Manager shall occur as follows: 1A/1P incidents: Notify within one hour of incident 2A/2P incidents: Notify prior to end of shift 3A/3P incidents: Complete report in JHET within three days	PM / PER	Following incident
7.	Summary of environmental incident management to be provided in the monthly Project Safety/Quality/Environment Report (refer: Performance Statistics – Safety, Quality & Environment T4MR-MPR-SQE-009)	PER	Monthly

8.0 Suggested Corrective Actions

Problem	Suggested Corrective Action
Contamination of surface water identified.	• Associated construction activities to cease immediately upon becoming aware of an environmental incident. • Manage the incident in accordance with Incident and Event Management Procedure (T4MR-MPR-SQE-010). • Revision of construction activities, PSECP and further mitigation measures to be considered and implemented as appropriate to prevent further environmental harm from occurring.
Sustained exceedance of water quality criteria	• Investigate and identify potential sources causing the exceedance. • Control the source. • Clean up or rehabilitate any impacts. • Implement appropriate controls. • Review construction methods, control effectiveness and device design. • Report exceedances as necessary.
Poor quality of erosion and sediment controls	• Repair/reinstate controls. • Review maintenance, staff responsible and resources.
Spills or leaks of chemicals or hydrocarbons	• Spills/Leaks to be contained, cleaned up and reported. • Spill kits to be used as appropriate. • Review refuelling/plant maintenance practices and modify if appropriate.
Failure of erosion and sediment controls	• Repair or replace controls

	• Clean up or rehabilitate any impacts • Evaluate failure, investigate alternative controls, site, soils and required water quality levels.

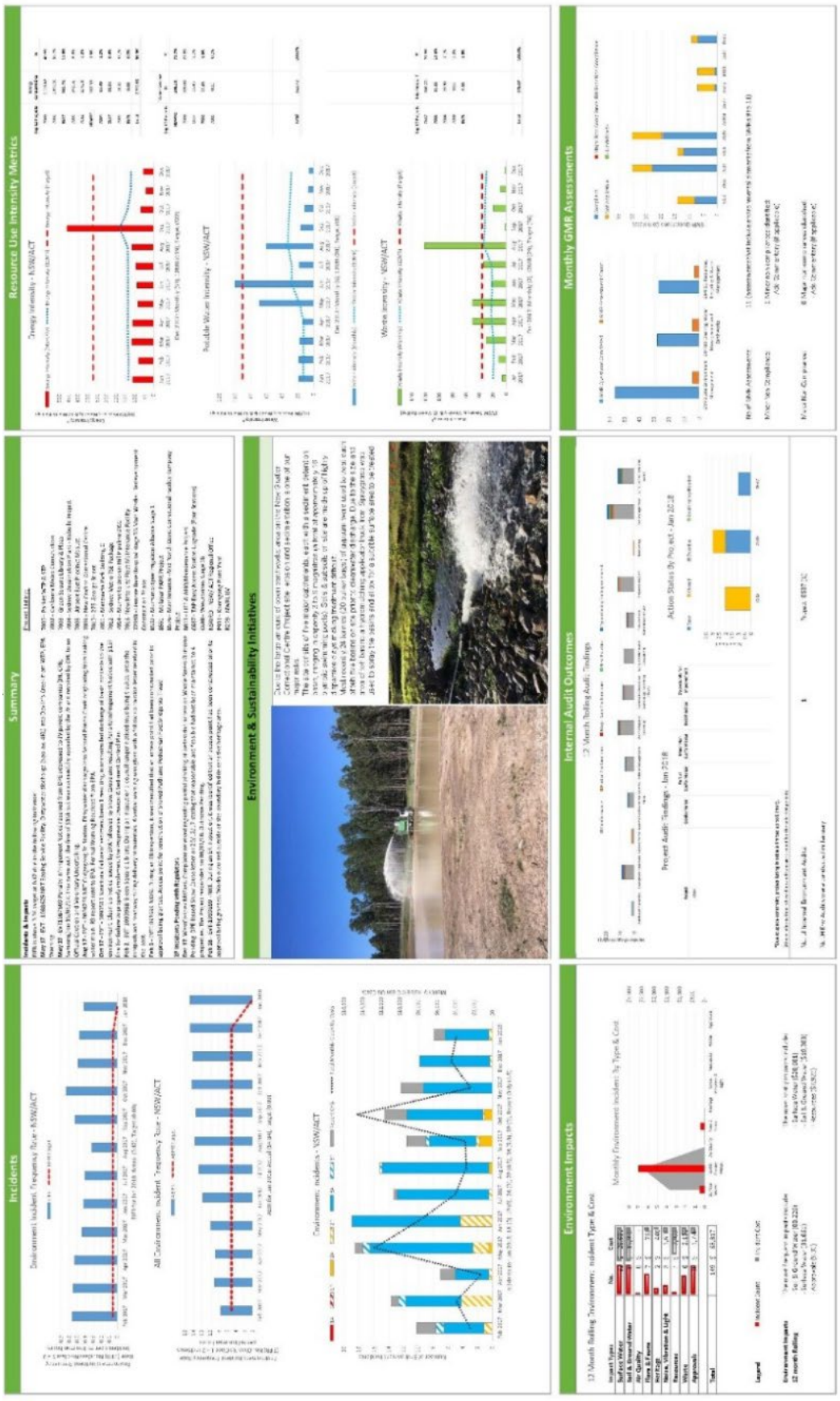
pH levels outside WQO	• pH under WQO, need to increase the pH by adding a base such as agricultural lime.
	  ○ *Note. Aglime can take time to become soluble. Other, more soluble products may be available, but ensure pH is not exceeded.
	• pH over WQO, need to lower the pH by adding hydrochloric acid.
	  ○ As a guide, 500mL hydrochloric acid lowers 7000L of water by a pH of approximately 1.5pH. To apply the acid safely all handling and PPE requirements specified in SDS must be followed (refer: Hazardous Chemicals Management Procedure (T4MRMPR-SQE-011).
	• When adjusting water levels any additive is to be be evenly dispersed throughout. Limit the amount of adjustments done as this may affect other water qualities. Determine the correct adjustment amounts first and apply accordingly and sparingly.

Turbidity outside WQO	• Refer to the Hazardous Chemicals Management Procedure (T4MR-MPR-SQE-011) prior to procuring or handling chemicals. • Initially, wait for water to settle naturally or floc the water to speed up the process. Treating water with flocculent (e.g. gypsum, liquid alum or flocculent blocks) will cause sediments to descend to the bottom. • Gypsum: Can take 48hrs+ to act, dissolve into a slurry before dispersed into a holding tank/pond to increase its absorption/solubility. Dosing rates of 30kg per 100m3 (100,000L) can be used as a guide. Quantities are tested prior in a sample bucket or drum. • Liquid Alum: Faster acting, however the addition of Alum to acidic waters may cause environmental damage. Ensure pH is checked, it must be above 5.5 after treatment regardless of use. • Floc blocks: Can be situated in flow paths to ensure incoming water is dosed with flocculent upon entry to holding pond/tank, fine tuning of flocculent can then be completed on the pond/tank. Floc blocks are not be left permanently in a pond/tank, instead they are in a flow path leading to the pond/tank that is dry when no water is flowing into the system. • Synthetic flocculants: Many products are available for floccing purposes, when using other products, ensure they are suitable for your application and approved for site use. • Always re-test pH levels after you have allowed the flocculent to work and adjust accordingly. Most flocculants will lower the pH level, further lime application may be required. Avoid overfloccing.

Appendix H Additional Mitigation Measures (Specific to the Site Establishment Management Plan)

NOTE: Appendix H will be populated following the Secretary approval of the SEMP, at such time the CEMP will be resubmitted to the Project ER and approved as a minor amendment.

Appendix I Environmental Dashboard (Example)



Appendix J Summary of Environmental Constraints, Aspects and Impacts

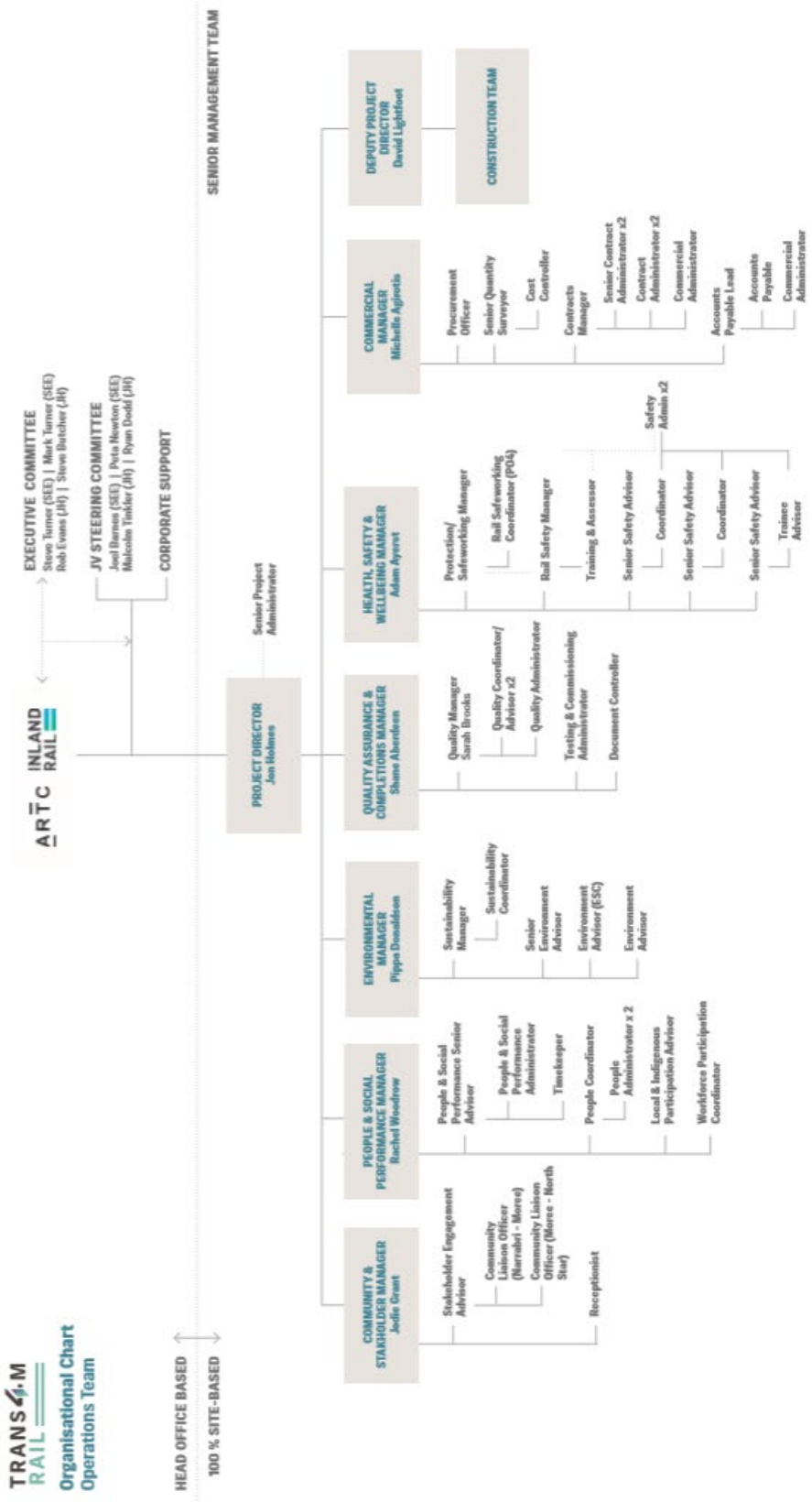
EIS/SPIR COMPONENT	SUMMARY
Traffic, transport and access	▸ Even with growth, construction traffic and potential seasonal variation in traffic patterns, a level of service B on Newell Highway would be maintained. The road network has spare capacity to cater for the estimated construction and operation traffic and no significant network impacts are predicted.
Biodiversity	▸ The majority of the study area has been heavily modified by past and ongoing disturbances associated with the active rail corridor and surrounding rural and agricultural activities. Clearance and maintenance of the rail corridor has resulted in fragmentation, a high level of disturbance and degradation of vegetation communities within the rail corridor. The majority of the proposal site (69 per cent) is cleared or consists of non-native vegetation. Patches of native vegetation exist sporadically within and near the proposal site, and are typically associated with travelling stock reserves, road reserves, or farm woodland remnants. ▸ 932ha of native plant community types (including 174ha of Koala habitat) listed under the Biodiversity Conservation Act 2016 and the Commonwealth EPBC Act will be impacted. ARTC will offset this impact with the purchase of ecosystems and species credits through biodiversity stewardship agreements. ▸ Four of the vegetation communities in the project area conform to threatened ecological communities listed under the Biodiversity Act, comprising: Myall Woodland in the Darling Riverine Plains, Brigalow Belt South, Cobar Peneplain, Murray-Darling Depression, Riverina and NSW South Western Slopes Bioregions (EEC); Brigalow within the Brigalow Belt South, Nandewar and Darling Riverine Plains Bioregions (EEC); Coolibah - Black Box Woodland in the Darling Riverine Plains, Brigalow Belt South, Cobar Peneplain and Mulga Lands Bioregions (EEC); Carbeen Open Forest community in the Darling Riverine Plains and Brigalow Belt South Bioregions (EEC). ▸ The main impacts on aquatic ecological systems would be as a result of the removal and construction of new watercourse crossing structures along the proposal site and access over watercourses for movement of construction equipment and personnel. An assessment of significance of impact of the Project on aquatic communities identified that the Project is unlikely to have an adverse residual impact on threatened species and endangered populations. There are no State significant or important wetlands within the Project Boundary. ▸ The project occurs in a landscape that is dominated by crop land and introduced pastures and contains only a small proportion of woodland and scattered tree cover. Patches of native woodland habitat exists sporadically and are typically associated with road verges or small woodland patches on farmland. As such, native fauna habitats within the project are minimal. No critical habitat listed under the Biodiversity Act occurs within the project area. ▸ Seven threatened fauna species, listed as vulnerable under the Biodiversity Act, were recorded in the project area during field surveys: grey-crowned babbler (*Pomatostomus temporalis temporalis)*; varied sittella (*Daphoenositta chrysoptera*); Koala (*Phascolarctos cinereus*); grey-headed flying-fox (*Pteropus poliocephalus*); eastern bentwing-bat (*Miniopterus schreibersii oceanensis*); little pied bat (*Chalinolobus picatus*); and yellow-bellied sheathtail-bat (*Saccolaimus flaviventris*). ▸ One threatened flora species listed as vulnerable under the EPBC Act was recorded during field surveys - Belson's panic. ▸ Two threatened fauna species, listed as vulnerable under the EPBC Act, were recorded during field surveys – the koala and the grey-headed flying-fox. ▸ No protected areas, defined as areas/reserves managed by OEH and/or DPI NSW Fisheries under the National Parks and Wildlife Act 1974 (NPW Act), are located near the project. ▸ The EIS lists 21 areas of key fish habitat (this includes areas found in the Separable Portion 2 works). These are areas classified as class 3 (minimal key fish habitat) or above, in accordance with the Policy and guidelines for fish habitat conservation and management (Department of Primary Industries, 2013).
Noise and vibration	▸ There is the potential for construction noise to exceed relevant criteria at various sensitive receivers along the proposal site. Although construction noise would be

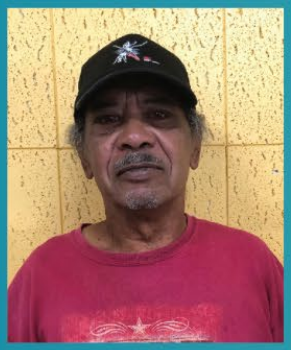
EIS/SPIR COMPONENT	SUMMARY
	temporary and localised in nature, the potential impacts would be managed through the implementation of noise control measures. ▸ Activities such as pre-possession, skim track reconditioning, full depth reconditioning, and drainage construction, are likely to impact the largest number of receivers due to the higher level of noise emitted by the anticipated equipment. ▸ Construction activities undertaken outside of the primary proposal construction hours (i.e. 6am to 6pm) increase the impacted receivers to those within about 1,500 metres for bridge works and 700 metres for other activities. ▸ For works within primary proposal construction hours: ✓ Construction activities have the potential to exceed the noise management level in residential areas, but less so in rural areas; ✓ Construction activities have the potential to exceed the noise management level at non-residential sensitive receivers including educational, child-care and hospital facilities. Construction noise management levels are applicable as an internal level only when the facilities are in use; and ✓ Construction activities have the potential to exceed the noise management level at recreational areas including bushland areas, parks and sporting facilities when these areas are in use. ▸ In relation to vibration from general construction activities, the expected magnitude of ground vibration is not expected to be sufficient to cause structural damage if the equipment operates at distances greater than 18 metres from standard residential buildings or structures of similar construction. ▸ The expected magnitude of ground vibration at heritage structures is not expected to be sufficient to cause structural damage if the equipment operates at distances greater than 35 metres from heritage buildings and structures. However, many items are potentially within this distance from the works and may therefore be affected. ▸ Noise and vibration management needs to be in accordance with the IR Noise and Vibration Strategy (Appendix M of the EIS).
Air Quality	▸ The main potential impact on air quality during construction would occur as a result of the generation of dust from construction works and the movement of equipment and machinery. ▸ Standard air quality management controls are recommended.
Soils and contamination	▸ Published soil units for the project site include deep reactive clays, including black earths, occurring on flat alluvial and undulating plains west of the Goondiwindi Fault. East of the fault are variable soil conditions including deep reactive clays, basaltic soils, red and brown sandy and silty clay soils. Of the soils present in the project site, the main potential issue relates to dispersive alluvial and residual soils, which were found in a significant proportion of the tested soils. ▸ The erosion potential of the alluvial and residual soils was assessed to be moderate to high. Construction of the project has the potential to result in erosion and sedimentation and contamination of soils and surface waters. ▸ Contamination assessment was undertaken at 111 test pits along the N2NS alignment for contamination assessment. All samples, except one, had laboratory results either below the limit of reliability or below the relevant human health-based screening criteria. ▸ One site recorded the presence of chrysotile asbestos in gravel fill material consisting of ash and slag (site TP305 – located on the rail corridor directly south of the crossing with Gurley Creek). This ash fill layer was found beneath the ballast at the majority of locations, at depths between 0.4 and 1.6 metres below top of rail. ▸ Soils in the vicinity of location TP305 would be classified as Special Waste (Asbestos). Soils sampled at other test pit locations along the rail corridor are consistent with a General Solid Waste classification. ▸ The contamination assessments confirmed that the soils are considered suitable to remain within the proposal site for the use proposed (that is, for railway purposes). ▸ Based on the findings of the contamination assessment, the proposal site does not contain gross contamination and does not meet the criteria requiring it to be notified to the EPA under section 60 of the CLM Act.

EIS/SPIR COMPONENT	SUMMARY
	▸ There are six sites listed on the EPA's Contaminated Sites Register and 11 sites on the list of contaminated sites. The majority of these properties are service station sites located in Moree. Eleven sites located in the townships of Narrabri, Bellata, North Star and Moree have been listed on ARTC's contaminated sites register. The majority of these sites have been leased from ARTC for use as either service stations, grain storage or fuel storage. ▸ Generally no saline soils were evident at sample locations in the vicinity of the project site (within 1 kilometre).
Hydrology and Flooding	▸ The project site is characterised by relatively flat land and the existing rail corridor is subject to flooding. Existing level crossings are also inundated during some flood events. ▸ Flood events in the area are generally influenced by two sources: ▸ Regional flood events associated with the Namoi or Gwydir Rivers (including the Mehi River); and ▸ Local flooding associated with over local catchments draining to an individual underbridge or group of culverts in isolation of the regional flooding behaviour. ▸ During local flood events, modelling shows that the existing rail line can be overtopped by 0.63m to 0.75m for a length of 122m to 11,124m for the scenarios modelled. ▸ Flow velocities during flood events that do not overtop the existing rail line would be low (i.e. less than 2m per second). ▸ It generally takes about nine hours for flood levels to fall to less than 0.1 metres deep at culverts for smaller catchments and up to 36 hours for larger catchments. Regional flood events, which are typically a result of flooding from major rivers and watercourses after rainfall over a significant portion of catchment, can extend for several days or more. ▸ The presence of construction work sites and compounds in floodplains has the potential to impact on surrounding properties. ▸ During construction, there is also the potential for works to be impacted by flooding. The project has been designed to minimise the duration of on-site work in watercourses, which would enable increased flexibility when scheduling works around forecast rain periods. ▸ The impact of construction on flood behaviour is expected to be negligible compared to regional flood levels and behaviour.
Water quality	▸ There is no existing water quality data for the watercourses crossing the project site. ▸ The National Water Quality Assessment (SKM, 2011) classified the water quality in the Gwydir River and Namoi River catchments as being relatively poor, exceeding the ANZECC 2000 guidelines for a number of criteria. ▸ The potential impacts of construction relate mainly to erosion and sedimentation, and release of entrained contaminants (particularly during watercourse crossings, construction of new culverts/underbridges and construction of the proposed new rail bridge over Croppa Creek) and pollution associated with any spills or leaks. ▸ Construction is not anticipated to impact on groundwater resources. Excavation would be relatively shallow compared to the likely depth of the water table and is not likely to intercept groundwater aquifers or their flow systems. In locations where piling is required (such as for bridge piers), the detailed design would consider methods to minimise or avoid the potential requirement for dewatering where perched groundwater is encountered. ▸ Water quality guidelines are contained in Technical Report 7 (Water quality assessment). ▸ Standard erosion and sediment control measures are recommended.
Aboriginal heritage	▸ A review of key environmental factors associated with the project demonstrates that the portions of the project associated with water resources would have provided an environmental context attractive to Aboriginal people and that the north-eastern portion of the project may have provided access to lithic (i.e. stone tools) resources. However, historical land use of the proposal site and surrounds has the potential to have significantly impacted any archaeological deposits that may be present

EIS/SPIR COMPONENT	SUMMARY
	▸ 14 new Aboriginal sites were identified within the project site during field surveys. Of these sites, eight are isolated artefacts with low significance, three are artefact scatters with low significance and one is an artefact scatter with low to moderate significance ▸ Five areas of moderate or higher archaeological potential were identified within the proposal site ▸ It was predicted that stone artefact scatters and scarred trees are the most likely site types to be identified within the project site. Stone artefact scatters will be most frequent in number and will be larger in size within proximity to reliable sources of water. Quarry sites may also occur where suitable rock outcrops are present. Within the project site, the potential for quarry sites is greatest in the section between Croppa Creek and North Star where geological mapping indicates rock types suitable for artefact manufacture (silcrete, basalt, dolerite and porcellanite) may be present ▸ It is noted that the project site has been subject to significant disturbance. Within the existing rail corridor, the construction and maintenance of the existing rail line is likely to have resulted in the removal/relocation of archaeological evidence that may have been present (if any). Similarly, in adjoining farmland within the project site and additional assessment areas outside the existing rail corridor, clearance, grazing and cultivation of the landscape will have impacted on archaeological potential, compromising the integrity of any archaeological sites that may have been present ▸ Based on currently available information, the proposal is likely to result in harm to archaeological sites NNS IA6-13, NNS AS1, 5, 6, 7, 10-3-0032 and 10-3-0035, with sites NNS IA4 and NNS AS2 and 4 also considered likely to be impacted (located within 10 metres of the proposal site). In addition, the proposal may result in disturbance to areas of moderate or higher archaeological potential within survey areas 15 (containing the proposed Newell Highway overpass that is located outside the existing rail corridor), 42 (Gwydir River terraces), 55 (Croppa Creek terraces), 56 (Mehi River terraces) and 57 (Camurra bypass on Gwydir River terraces).
Non-Aboriginal heritage	▸ The potential non-Aboriginal heritage resources of the proposal site generally reflects the documented history of the surrounding region and the extant Narrabri to North Star rail alignment ▸ The project site and its' individual surviving component elements such as the extant steel truss underbridges, timber constructed underbridges and remnant evidence of former stations, is considered to generally be of local significance ▸ With the exception of Moree, Edgeroi, Bellata and Gurley railway stations the majority of the former stations have been previously removed with only occasional earthen embankments or loading banks remaining as evidence of their former locations ▸ One locally listed heritage item is located within the project site – Moree Station, which is listed on both the Moree Plains Local Environmental Plan 2011 and Railcorp's section 170 heritage register. Moree Station is considered by the Moree Plains LEP to have State significance ▸ The main potential for indirect impacts relates to vibration generated by construction. Given the proximity of construction to Moree Station, the former Edgeroi Woolshed (a potential heritage item considered to be of local significance), and remaining structures associated with Edgeroi, Bellata, and Gurley stations, there may be the potential for indirect impacts caused by vibration.
Landscape and visual amenity	▸ The proposal would generate visual impacts during construction. Construction impacts would be temporary and limited to the construction period.
Land Use and Property	▸ The main potential impacts on land use would occur during construction. Impacts include temporary disruption to land use along the construction corridor for construction areas, compounds and haulage routes. These impacts, such as soil compaction, disruption of services or utilities, changes in access and interrupted land management, would be short-term.
Socio-economic impacts	▸ Beneficial impacts during construction include employment (an estimated average workforce of 200 people would be required to construct the proposal), training opportunities, and flow on local and regional economic benefits. Impacts during construction would include potential impacts on the amenity of the local community, and impacts associated with the inflow of the workforce into the local area, including demand for accommodation.

Appendix K Trans4m Rail Organisational Chart





ABOUT THE ARTIST:

HOWARD GILLON

Proud Kamilaroi Man from Moree.

Howard has been painting for the past 10years.

He loves his Art and Culture.

Howard's inspirations come from the land and the animals, around the country side.

BEYOND THE TRACK: FOR OUR COVER ARTWORK, TRANS4M RAIL IS SUPPORTING AND FEATURING LOCAL MOREE ARTISTS

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