



Site Establishment Management Plan

2600-0018 N2NS SP1
SUBMISSION BY TRANS4M RAIL

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Revision History

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Compliance Matrix

Table 1:EPBC (2016/7729) Conditions of Approval

CONDITION REFERENCE	REQUIREMENTS	WHERE ADDRESSED
PART A CONDITIONS SPECIFIC TO THE ACTION		
C1(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 SEMP
PART B- STANDARD ADMINISTRATIVE CONDITIONS		
C4	The approval holder must maintain accurate and complete compliance records.	Section 9
C5	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.	Sections 9 and 10
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: <ul style="list-style-type: none"> 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; 	Section 9
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 becoming aware of the incident or non-compliance. The notification must specify: <ul style="list-style-type: none"> 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. 	Section 10
8	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 becoming aware of the incident or non-compliance specifying:	Section 10

	<p>a. Any corrective action or investigation which the approval holder has already taken or intends to take in the immediate future</p> <p>b. The potential impacts of the incident or non-compliance and;</p> <p>c. The method and timing of any remedial action that will be undertaken by the approval holder.</p>	
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Table 2: CSSI (SSI 7474) Ministers Conditions of Approval

CONDITION REFERENCE	DETAILS	WHERE ADDRESSED
GENERAL		
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).	Section 3
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.	Sections 3 and 4
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.	Section 3
A4	The Proponent must comply with the written requirements or directions of the Planning Secretary, including in relation to: <ul style="list-style-type: none"> a) the environmental performance of the CSSI; b) any document or correspondence under the terms of this approval 	Section 3

CONDITION REFERENCE	DETAILS	WHERE ADDRESSED
	<p>in relation to the CSSI (including the provision of such documentation or correspondence);</p> <ul style="list-style-type: none"> 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; 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) in 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. 	
<p>A5</p>	<p>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:</p> <ul style="list-style-type: none"> documentation of the engagement with the party identified in the condition of approval that has occurred before submitting the document for approval; log of the dates of engagement or attempted engagement with the identified party and a summary of the issues raised by them; documentation of the follow-up with the identified party where engagement has not occurred to 	<p>Section 8</p>

CONDITION REFERENCE	DETAILS	WHERE ADDRESSED
	<p>confirm that they do not wish to engage or have not attempted to engage after repeated invitations; outline of the issues raised by the identified party and how they have been addressed; and a description of the outstanding issues raised by the identified party and the reasons why they have not been addressed.</p>	
A7	<p>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.</p>	Noted
A11	<p>The CSSI may be constructed and operated in stages. Where staged construction or operation is proposed, a Staging Report (for either or both construction and operation as the case requires) must be prepared and submitted to the Secretary for approval. The Staging Report must be submitted to the Secretary no later than one (1) month prior to the commencement of construction of the first of the proposed stages of construction (or if only staged operation is proposed, one (1) month prior to the commencement of operation of the first of the proposed stages of operation).</p>	Section 1.1.1
Ancillary Facilities		
A17	<p>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:</p>	This SEMP

CONDITION REFERENCE	DETAILS	WHERE ADDRESSED
	<p>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);</p> <p>b) figures illustrating the proposed operational site layout/s;</p> <p>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;</p> <p>d) details of how the site establishment activities described in subsection (b) of this condition will be carried out to:</p> <p>e) meet the performance outcomes stated in the documents listed in Condition A1, and</p> <p>f) manage the risks identified in the risk analysis undertaken in subsection (d) of this condition; and</p> <p>g) program for monitoring the performance outcomes, including a program for noise monitoring of site establishment activities.</p> <p>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.</p> <p>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.</p>	<p>Section 1.1</p>

CONDITION REFERENCE	DETAILS	WHERE ADDRESSED
A18	<p>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 C4 and relevant Construction Monitoring Programs required by Condition C14 have been approved by the Planning Secretary.</p> <p>This condition does not apply to Condition A21.</p>	Section 3
A19	<p>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.</p>	Section 6
A20	<p>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.</p>	Sections 6 and 8
A22	<p>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.</p>	Section 8

CONDITION REFERENCE	DETAILS	WHERE ADDRESSED
A23	Boundary screening required under Condition A22 of this approval must minimise visual, noise and air quality impacts on adjacent sensitive receivers.	Section 8
Incident Notification and Reporting		
A41	<p>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.</p> <p>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.</p> <p>Subsequent notification must be given, and reports submitted in accordance with the requirements set out in Appendix B – WRITTEN INCIDENT NOTIFICATION AND REPORTING REQUIREMENTS.</p>	Section 10
COMPLAINTS MANAGEMENT SYSTEM		
B6	A Complaints Management System must be prepared and implemented before the commencement of any works and maintained for the duration of construction and for a minimum for 12 months following completion of construction of the CSSI.	Section 10
B7	<p>The following information must be available to facilitate community enquiries and manage complaints one (1) month before the commencement of works and for 12 months following the completion of construction:</p> <ul style="list-style-type: none"> a) a 24- hour telephone number for the registration of complaints and enquiries about the SSI; b) a postal address to which written complaints and enquires may be sent; c) an email address to which electronic 	Section 10

CONDITION REFERENCE	DETAILS	WHERE ADDRESSED
	<p>complaints and enquiries may be transmitted; and</p> <p>d) a mediation system for complaints unable to be resolved.</p> <p>This information must be accessible to all in the community regardless of age, ethnicity, disability or literacy level.</p>	
B8	<p>The telephone number, postal address and email address required under Condition B11 of this approval must be published in a newspaper circulating in the relevant local area and on site hoarding at each construction site before the commencement of construction and published in the same way again before the commencement of operation. This information must also be provided on the website required under Condition B11 of this approval.</p>	Section 10
B9	<p>A Complaints Register must be maintained recording information on all complaints received about the CSSI during the carrying out of any works and for a minimum of 12 months following the completion of construction. The Complaints Register must record the:</p> <ul style="list-style-type: none"> a) number of complaints received; b) number of people affected in relation to a complaint; and c) means by which the complaint was addressed and whether resolution was reached, with or without mediation. 	Section 10
B10	<p>The Complaints Register must be provided to the Planning Secretary upon request, within the timeframe stated in the request.</p>	Section 10
NOISE AND VIBRATION – WORK HOURS		
E1	<p>Works must be undertaken during the following hours:</p> <ul style="list-style-type: none"> a) 7:00 am to 6:00 pm Mondays to Fridays; b) 7:00 am to 6:00 pm Saturdays; and c) at no time on Sundays or public holidays. 	Section 8

CONDITION REFERENCE	DETAILS	WHERE ADDRESSED
E2	Notwithstanding Condition E1, works affecting any given receiver may be undertaken during the hours of 6.00 am to 6.00 pm each day over a three (3) month period provided that there is no work between the hours of 6:00 pm on a Saturday and 7:00 am on a Monday every second week.	Section 8
NOISE AND VIBRATION – VARIATION TO WORK HOURS		
E3	<p>Notwithstanding Conditions E1 and E2, works associated with the CSSI may be undertaken outside the hours specified under those conditions in the following circumstances:</p> <ul style="list-style-type: none"> a) for the delivery of materials required by the NSW Police Force or other authority for safety reasons; or b) where it is required in an emergency to avoid injury or the loss of life, to avoid damage or loss of property or to prevent environmental harm; or c) where different construction hours are permitted under an EPL in force in respect of the CSSI; or d) work approved under an Out-of-Hours Work Protocol for work not subject to an EPL as required by Condition E8; or e) where a negotiated agreement is in force, in accordance with Condition E4 and E5; or f) construction that causes LAeq(15 minute) noise levels: <ul style="list-style-type: none"> i. no more than 5 dB(A) above the rating background level at the façade of any residence in accordance with the Interim Construction Noise Guideline (DECC, 2009) or if between the hours of 10:00 pm and 7:00 am no more than 52 	Section 8

CONDITION REFERENCE	DETAILS	WHERE ADDRESSED
	<p>dB(A)LA(max) or more than 15 dB(A)LA(Max) above the rating background level whichever is the higher, and no more than the noise management levels specified in Table 3 of the Interim Construction Noise Guideline (DECC, 2009) at other sensitive land uses, and continuous or impulsive vibration values, measured at the most affected residence are</p> <ul style="list-style-type: none"> ii. no more than those for human exposure to vibration, specified in Table 2.2 of Assessing iii. Vibration: a technical guideline (DEC, 2006), and iv. intermittent vibration values measured at the most affected residence are no more than those for human exposure to vibration, specified in Table 2.4 of Assessing Vibration: a technical guideline (DEC, 2006). 	
E4	<p>The Proponent may reach 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.</p>	Section 8
E5	<p>All negotiated agreements must be in writing and finalised before the commencement of works.</p>	Section 8
E6	<p>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</p>	Section 8

CONDITION REFERENCE	DETAILS	WHERE ADDRESSED
	likely impact and duration of those works.	
NOISE AND VIBRATION MITIGATION		
E10	<p>Mitigation measures must be implemented with the aim of achieving the following construction noise management levels and vibration criteria:</p> <ul style="list-style-type: none"> a) construction 'Noise affected' noise management levels established using the Interim Construction Noise Guideline (DECC, 2009); b) vibration criteria established using the Assessing Vibration: A Technical Guideline (DEC, 2006) (for human exposure); c) Australian Standard AS 2187.2 - 2006 "Explosives - Storage and Use - Use of Explosives"; d) BS 7385 Part 2-1993 "Evaluation and measurement for vibration in buildings Part 2" as they are "applicable to Australian conditions"; and e) the vibration limits set out in the German Standard DIN 4150-3: Structural Vibration- effects of vibration on structures (for structural damage). <p>Any works identified as exceeding the noise management levels and/or vibration criteria must be managed in accordance with the Construction Noise and Vibration Management Sub-plan required by Condition 0.</p> <p><i>Note: The Interim Construction Noise Guideline identifies 'particularly annoying' activities that require the addition of 5 dB(A) to the predicted level before comparing to the construction Noise Management Level.</i></p>	Section 8
WATER QUALITY AND DRAINAGE		
E35	The CSSI must be designed, constructed and operated so as to:	Section 8 ESCPs

CONDITION REFERENCE	DETAILS	WHERE ADDRESSED
	<ul style="list-style-type: none"> a) maintain the NSW Water Quality Objectives where they are being achieved as at the date of this Approval; b) contribute towards achievement of the NSW Water Quality Objectives over time where they are not being achieved as at the date of this approval, unless an EPL in force in respect of the CSSI contains different requirements in relation to the NSW Water Quality Objectives, in which case those requirements must be complied with; c) ensure all drainage feature crossings (permanent and temporary watercourse crossings and stream diversions) new or modified surface water drainage (including cess drains) and depressions are designed and constructed in accordance with relevant guidelines; d) locate all scour protection works associated with replacement culverts or the construction of new culverts within the rail corridor, or as agreed to by the relevant landowner; e) not result in changes to the direction of watercourses or the direction of flood flows except within the rail corridor, other than as agreed with the landowner; f) ensure that there is no permanent interception of, and/or connection with, groundwater; g) ensure all discharges from new or modified surface drainage (including cess drains) adjacent to the new and upgraded track are released at a controlled rate to prevent scour; 	

CONDITION REFERENCE	DETAILS	WHERE ADDRESSED
	<p>h) ensure works on waterfront land are undertaken in accordance with the NRAR guidelines for controlled activities on waterfront land;</p> <p>i) ensure that any recycled wastewater (including recycled/treated water) proposed for use by the CSSI, is fit for purpose and does not pose a risk to human health or the receiving environment.</p>	
TRAFFIC, TRANSPORT AND ACCESS		
E38	<p>Construction traffic must not use local roads or privately-owned roads (other than to avoid direct access from ancillary facilities and construction sites to the Newell Highway) unless no alternative access is available. Use of private access roads must be in accordance with Conditions A19 and A20. Local or privately owned roads used for access to ancillary facilities and construction sites must be identified in the Construction Traffic, Transport and Access Management Sub-plan required by Condition 0.</p>	Section 8
E39	<p>Before any local or private road is used by a heavy vehicle for the purposes of construction of the CSSI, a Road Dilapidation Report must be prepared for the road. A copy of the Road Dilapidation Report must be provided to the relevant road authority(ies) and landowners within one (1) month of completion of the survey and at least two weeks before the road is used by heavy vehicles associated with the construction of the SSI.</p>	Section 8
E41	<p>Where bus stops (including school bus stops) are required to be temporarily closed or relocated during construction, such closure must not occur until relocated bus stops are functioning and are within 400 metres of the original bus stop. The relocation of bus stops must be undertaken in consultation with the relevant council and bus operator, and details regarding the relocations provided to affected communities (and educational facilities in relation to school bus stops) at</p>	Section 8

CONDITION REFERENCE	DETAILS	WHERE ADDRESSED
	least 14 days prior to the relocation occurring.	
E42	The Proponent must consult with TfNSW prior to, and at regular intervals during, construction to co-ordinate and implement mitigation measures to reducing any potential concurrent impacts arising from the construction of the CSSI and Newell Highway upgrade works. Procedures for consultation must be outlined in the Traffic, Transport and Access Management Sub-plan required by Condition 0.	Section 8
PROPERTY ACCESS		
E50	The Proponent must maintain access to properties during the entirety of works unless an alternative access is agreed in writing with the landowner(s) whose access is impacted by the CSSI works.	Section 8
E51	Where construction of the CSSI restricts a property's access to a public road, the Proponent must, until their primary access is reinstated, provide the property with temporary alternate access to an agreed road decided through consultation with the landowner, at no cost to the property landowner, unless otherwise agreed with the landowner.	Section 8
E52	Where construction of the CSSI restricts the ability of a resident or landowner to access other parts of their property via a level crossing, the Proponent must, until the permanent level crossing is reinstated, supply the property with a temporary alternate level crossing access at a convenient location decided through consultation with the landowner, at no cost to the property landowner, unless otherwise agreed with the landowner. This can include other existing level crossings or a new alternative temporary level crossing access that is both safe and agreed to.	Section 8
PEDESTRIAN AND CYCLIST ACCESS		
E55	Safe pedestrian access must be maintained around work sites during construction. In circumstances where pedestrian and cyclist access is restricted or	Section 8

CONDITION REFERENCE	DETAILS	WHERE ADDRESSED
	removed due to construction activities, an alternate route which complies with the relevant standards must be provided and signposted.	
VISUAL AMENITY		
E63	The Proponent must construct and operate the CSSI with the objective of minimising light spillage to residences. All lighting associated with the construction and operation of the CSSI must be consistent with the requirements of Australian Standard 4282-1997 Control of the obtrusive effects of outdoor lighting. Notwithstanding, the Proponent must provide mitigation measures to manage any residual night-lighting impacts to protect residences adjoining or adjacent to the CSSI, in consultation with affected landowners.	Section 8
HERITAGE		
E65	The Proponent must not destroy, modify or otherwise physically affect any heritage items, including Aboriginal objects, outside of the CSSI construction boundary.	Section 8
E66	The Proponent must not harm, modify, or otherwise impact human remains uncovered during the construction of the CSSI.	Section 8
REHABILITATION		
E78	Any agreements for the temporary use of land for construction purposes must provide for the rehabilitation of that land and any structures on it to its pre-construction state, unless otherwise agreed with the landowner.	Section 8
SOILS		
E80	All reasonably practicable erosion and sediment controls must be installed and appropriately maintained to minimise any water pollution. When implementing such controls, any relevant guidance in the Managing Urban Stormwater series must be considered.	Section 8 ESCPs
CONTAMINATED SITES		
E81	In the event that soils suspected to be contaminated are unexpectedly found, the Proponent must engage	Section 8

CONDITION REFERENCE	DETAILS	WHERE ADDRESSED
	<p>a suitably experienced and qualified contaminated land consultant to undertake further investigations to determine the type and extent of any contamination. The investigation must be undertaken in accordance with guidelines made or approved under the Contaminated Land Management Act 1997 (NSW). The results of the investigation must be documented in a Site Contamination Assessment Report.</p>	
AIR QUALITY		
E86	<p>In addition to the performance outcomes, commitments and mitigation measures specified in the documents listed in Condition A1, all practicable measures must be implemented to minimise the emission of dust and other air pollutants during the construction and operation of the CSSI.</p>	Section 8
WASTE		
E87	<p>Waste generated during construction and operation is to be dealt with in accordance with the following priorities:</p> <ul style="list-style-type: none"> 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 	Section 8

CONDITION REFERENCE	DETAILS	WHERE ADDRESSED
	(Waste) Regulation 2014, or to any other place that can lawfully accept such waste.	
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.	Section 8
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. <i>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.</i>	Section 8
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.	Section 8

Table 3: Revised Mitigation Measures

REQUIREMENT REFERENCE	DETAILS	WHERE ADDRESSED
TRAFFIC, TRANSPORT AND ACCESS		
C2.1 General impacts of construction activities on traffic, transport, access, pedestrians and cyclists.	A traffic, transport and access management sub-plan (TTAMP) 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.	Section 8 Traffic Management Plans NOTE: The TTAMP will be developed for the construction phase of the Project.

	<p>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:</p> <ul style="list-style-type: none"> ▶ 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. <p>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.</p>	
<p>C2.2 Access</p>	<p>Access to individual residences, services and businesses, and access for livestock across the rail corridor,</p>	<p>Section 8 Consultation and Stakeholder Engagement Management Plan</p>

	would be maintained during construction. Where alternative access arrangements need to be made, these would be developed in consultation with affected property owners/occupants.	
C2.3 Emergency Vehicle Access	Access for emergency vehicles would be maintained along key emergency access routes throughout the construction period, with suitable alternative access arrangements provided where required.	Section 8 Traffic Management Plans
C2.4 Consultation	<p>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.</p> <p>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.</p> <p>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.</p>	Section 2 Consultation and Stakeholder Engagement Management Plan
BIODIVERSITY		
C3.2 Avoidance of impacts - terrestrial and	Areas of biodiversity value outside the preferred infrastructure site would be fenced or	Section 8

aquatic biodiversity	signposted, where appropriate, to prevent the unnecessary disturbance during the construction phase.	
C3.3 Weed Management	Priority weeds would be managed in accordance with the <i>Biosecurity Act 2015</i> . Weeds of national environmental significance would be managed in accordance with the Weeds of National Significance Weed Management Guide. Any herbicides would be applied such that impacts on surrounding agricultural properties are avoided.	Section 8
C3.4 Rehabilitation	Rehabilitation of disturbed areas would be undertaken progressively and in accordance with the rehabilitation strategy.	Section 8

NOISE AND VIBRATION

C4.1 Noise and vibration management	<p>The Inland Rail NSW Construction Noise and Vibration Management Framework would be implemented, and the preferred infrastructure would be constructed, with the aim of achieving the construction noise management levels and vibration criteria identified by the noise and vibration assessment.</p> <p>All feasible and reasonable noise and vibration mitigation measures would be implemented.</p> <p>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</p>	<p>Section 8</p> <p>NOTE: The Construction Noise and Vibration Management Framework will be developed for the construction phase of the Project.</p>
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	<p>Management Framework and the CEMP.</p> <p>Notification of impacts would be undertaken in accordance with the communication management plan for the preferred infrastructure.</p>	
AIR QUALITY		
C5.2 Construction activities and earthworks that may cause dust impacts	<p>Where sensitive receivers are located within 150 metres of construction works, or visible dust is generated from vehicles using unsealed access roads, road watering would be implemented.</p>	N/A - C5.2, not relevant as no sensitive receivers are within 150m of the proposed site establishment work locations.
HYDROLOGY AND FLOODING		
C7.1 Flooding	<p>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.</p>	Section 8
C7.2 Water usage (private bores and surface water)	<p>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.</p>	Section 2
WATER QUALITY		
C8.1 Discharge to surface water	<p>Discharge to surface water would be undertaken in accordance with the environment protection license for Inland Rail and would consider the hydrological attributes</p>	Section 8 ESCPs

	of the receiving waterbody.	
C8.2 Monitoring	Water quality would be monitored during construction in accordance with the surface water monitoring framework.	Section 8
ABORIGINAL HERITAGE		
C9.1 Unexpected finds and human skeletal material	<p>If potential Aboriginal items, objects, or human remains are uncovered, works within the immediate area of the item would cease, and the unexpected finds procedure would be implemented.</p> <p>During pre-work briefings, employees would be made aware of the unexpected finds procedures and obligations under the National Parks and Wildlife Act 1974.</p>	Section 8
NON-ABORIGINAL HERITAGE		
C10.1 Unexpected finds and human skeletal material	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.	Section 8
VISUAL AMENITY		
C11.1 Light Spill	<p>Temporary and any permanent lighting would be designed and sited to comply with:</p> <ul style="list-style-type: none"> ▶ 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 	Section 8

	Environment, 2016).	
LAND USE AND PROPERTY		
C12.1 Communication	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.	Section 8
C12.2 Rehabilitation	Rehabilitation of disturbed areas would be undertaken progressively, consistent with the rehabilitation strategy and individual property agreements (where relevant).	Section 8
SOCIO-ECONOMICS		
C13.1	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.	Section 8
SUSTAINABILITY		
C14.1 Procurement	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).	Section 8
WASTE		
C15.1 Waste Management	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	Section 8

	prevent cross contamination.	
HEALTH AND SAFETY		
C16.1 Storage and handling of dangerous goods	<p>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.</p> <p>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.</p>	Section 8

Table 4: SEARS Environmental Performance Outcomes

KEY ISSUE (AS LISTED IN THE SEARS)	SEARS DESIRED PERFORMANCE OUTCOMES	PROPOSAL SPECIFIC 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.	<ul style="list-style-type: none"> ▶ The proposal is designed to minimise the potential for vegetation clearance and associated dust impacts. ▶ 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 Air Pollutants in New South Wales (Department of Environment and Conservation, 2005). 	Section 8

<p>6 Biodiversity</p>	<p>The project design considers all feasible measures to avoid and minimise impacts on terrestrial and aquatic biodiversity. Offsets and/or supplementary measures are assured which are equivalent to any remaining impacts of project construction and operation.</p>	<ul style="list-style-type: none"> ▶ The proposal is designed to minimise the surface footprint and impacts on biodiversity. ▶ 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). 	<p>Section 8</p>
<p>8 Flooding</p>	<p>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.</p>	<ul style="list-style-type: none"> ▶ 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. 	<p>Section 8</p>
<p>9 Health and Safety</p>	<p>The project avoids, to the greatest extent possible, risk to public safety.</p>	<ul style="list-style-type: none"> ▶ Construction targets zero safety incidents. ▶ All dangerous goods are stored, handled and transported in accordance with relevant regulatory requirements and Australian Standards. 	<p>Section 8 Traffic Management Plans</p>
<p>10 Heritage</p>	<p>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</p>	<ul style="list-style-type: none"> ▶ The proposal is designed to minimise the surface footprint. ▶ The design is sympathetic to the historic significance of the existing rail corridor and the heritage significance of surrounding listed heritage items, and where practicable, avoids and minimises impacts to heritage. ▶ Impacts on heritage are managed in accordance with relevant legislation, including the EP&A Act, the Heritage Act 1977, and relevant guidelines. 	<p>Section 8</p>

	environmental heritage and Aboriginal objects and places.	<ul style="list-style-type: none"> ▶ The potential impacts identified are mitigated by photographic/archival recording. 	
11 Noise and Vibration - amenity	<p>Construction noise and vibration (including airborne noise, groundborne noise and blasting) are effectively managed to minimise adverse impacts on acoustic amenity.</p> <p>Increases in noise emissions and vibration affecting nearby properties and other sensitive receivers during operation of the proposal are effectively managed to protect the amenity and well-being of the community.</p>	<ul style="list-style-type: none"> ▶ The proposal minimises impacts to the local community by: <ul style="list-style-type: none"> ▶ 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. 	Section 8
12 Noise and Vibration - structural	<p>Construction noise and vibration (including airborne noise, groundborne 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.</p> <p>Increases in noise emissions and vibration affecting environmental heritage as defined in the Heritage Act 1977 during operation of the proposal are effectively managed.</p>	<ul style="list-style-type: none"> ▶ The proposal minimises impacts to structures by: <ul style="list-style-type: none"> ▶ 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. 	Section 8
13 Protected and Sensitive Lands	The project is designed, constructed and operated to avoid or minimise impacts on protected and sensitive lands.	<ul style="list-style-type: none"> ▶ The proposal does not impact on protected and sensitive lands as defined by the SEARs. 	Section 8
14 Socio-economic, land use, property, agriculture and biosecurity	<p>The project minimises adverse social and economic impacts and capitalises on opportunities potentially available to affected communities.</p> <p>The project minimises impacts to property and business and achieves appropriate integration with adjoining land uses, including maintenance of appropriate access to properties and community facilities, and minimisation of displacement of existing land use activities, dwellings and infrastructure.</p>	<p>The proposal minimises impacts to the local community and businesses.</p> <ul style="list-style-type: none"> ▶ As part of Inland Rail as a whole, the proposal provides for the development of an efficient and sustainable route for the transport of freight between Brisbane and Melbourne. ▶ The proposal provides opportunities for regional economic development, by enabling local and regional businesses to access Inland Rail via regional transport hubs. ▶ Impacts to existing land use and properties are minimised. ▶ The proposal is appropriately integrated with adjoining land 	Section 8

		<p>uses, and access to private properties is maintained.</p> <ul style="list-style-type: none"> ▶ The proposal is appropriately integrated with local and regional land use planning strategies. 	
15 Soils	<p>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.</p>	<ul style="list-style-type: none"> ▶ 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). 	Section 8 ESCPs
16 Sustainability	<p>The project reduces the NSW Government's operating costs and ensures the effective and efficient use of resources.</p> <p>Conservation of natural resources is maximised.</p>	<ul style="list-style-type: none"> ▶ The design process targets an 'excellent' rating in accordance with the ISCA rating tool. ▶ Sustainability considerations are integrated throughout the design, construction, and operation phases of the proposal. ▶ The proposal contributes to one of the desired outcomes of Inland Rail – to have more than 750,000 fewer tonnes of carbon, one-third less fuel consumption, and reduced truck volumes in over 20 regional towns. 	Section 8
17 Traffic, transport and access	<p>Network connectivity, safety and efficiency of the transport system in the vicinity of the project are managed to minimise impacts.</p> <p>The safety of transport system customers is maintained.</p> <p>Impacts on network capacity and the level of service are effectively managed.</p> <p>Works are compatible with existing infrastructure and future transport corridors.</p>	<ul style="list-style-type: none"> ▶ 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. 	Section 8
18 Visual amenity	<p>The project minimises adverse impacts on the visual amenity of the built and natural environment (including public open space) and capitalises on</p>	<ul style="list-style-type: none"> ▶ 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. 	Section 8

	opportunities to improve visual amenity.	<ul style="list-style-type: none"> ▶ 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. 	
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.	<ul style="list-style-type: none"> ▶ 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. 	Section 8
20 Water - hydrology	<p>Long term impacts on surface water and groundwater hydrology (including drawdown, flow rates and volumes) are minimised.</p> <p>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.</p>	<ul style="list-style-type: none"> ▶ 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. 	Section 8 ESCPs
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).	<ul style="list-style-type: none"> ▶ 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. 	Section 8

Glossary

ACRONYM / ABBREVIATION	DEFINITION
AMS	Activity Method Statement
Ancillary Facility	<p>A temporary facility for construction of the CSSI including office and amenities compound, construction compound, material crushing and screening plant, materials storage compound, maintenance workshop, testing laboratory, car parking compound, a site used for assembly of infrastructure, and material stockpile area.</p> <p><i>Note: Where a CEMP has been approved by the Planning Secretary and it includes a stockpile management protocol, a temporary material stockpile located within the construction boundary is not an ancillary facility.</i></p>
ARTC	Australian Rail Track Corporation
BMP	Biodiversity Management Plan
CAD	Computer-Aided Design
CEMP	Construction Environmental Management Plan
CoA	Conditions of Approval
CSEMP	Community and Stakeholder Engagement Management Plan
CS	Communication Strategy
CSSI	Critical State Significant Infrastructure
DBH	Diameter at Breast Height
DPIE	Department of Planning Industry and Environment
ECM	Environmental Control Map
EIS	Environmental Impact Statement
EMS	Environmental Management System
EPA	Environmental Protection Authority
EPBC	Environmental Protection and Biodiversity Conservation Act
EPL	Environment Protection Licence
EP&A	Environmental Planning and Assessment Act (1979)
ER	Environment Representative
GIS	Geographic Information System
GMR	Global Mandatory Requirement
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)
NVMP	Noise and Vibration Management Plan
RMM	Revised Mitigation Measure
RTS	Response to Submissions

SEARs	Secretary's Environmental Assessment Requirements
Site establishment works	Activities undertaken to establish an ancillary facility so that it is able to be used to support the construction of the CSSI, including demolition of existing structures on the site, erection of site fencing / hoarding, provision of utility services to the site, site levelling, provision of site access, erection of demountable buildings, provision of hardstand areas, and erosion and sedimentation controls.
SEMP	Site Establishment Management Plan
SPIR	Submissions Preferred Infrastructure Report
SP1	Separable Portion 1, approximately 173km from north of Narrabri Junction, terminating at North Star, excluding the works over the Gwydir Floodplain.
SuMP	Sustainability Management Plan
SWMS	Safe Work Method Statement
TPZ	Tree Protection Zone
TRA	Task Risk Assessment
Trans4m Rail	John Holland Pty Ltd (ACN 004 282 268) and SEE Civil Pty Ltd (ACN 115 963 427) together as an unincorporated joint venture trading as Trans4m Rail Joint Venture (ABN 84 996 025 181).
TTAMP	Traffic, Transport and Access Management Plan
TfNSW	Transport for NSW (formally Roads and Maritime Services)
WRA	Workplace Risk Assessment

1 Introduction

1.1 General

The Australian Government has undertaken to deliver the Melbourne to Brisbane Inland Rail as a vital piece of infrastructure to complete the National Freight Network and to provide for a significant shift of freight from road to rail. To deliver this strategy, the Inland Rail program has been divided into 13 sections, one of these sections is the Narrabri to North Star (N2NS) Project.

The N2NS route is within the Narrabri, Moree Plains and Gwydir Local Government Areas (LGAs) in north west NSW. N2NS extends approximately 171km 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.



Figure 1: Project Overview

1.1.1 Inland Rail – Narrabri to North Star SP1

The Narrabri to North Star (N2NS) Project is one of 13 projects that make up the Inland Rail Project. The N2NS route is within the Narrabri, Moree Plains and Gwydir Local Government Areas (LGAs) in north-western NSW.

N2NS is divided into 2 Separable Portions with Separable Portion 1 (or SP1) extending approximately 171km from north of Narrabri Junction, terminating at North Star with the project generally occurring within the existing rail corridor. Works over the Gwydir Floodplain (or Separable Portion 2 (SP2)), shown in green in Figure 1, are excluded from the N2NS Project. This construct only contract will be delivered by Trans4m Rail (a Joint Venture between John Holland Pty Ltd and SEE Civil Pty Ltd). It is not proposed to construct this project in a staged manner.

Further detail on the IR or N2NS Project, including construction scope of works, route selection or construction schedule can be found in Volume 1 of the Project EIS.

The Works generally comprises of rail upgrade and new track works including all associated works required to accommodate the Inland Rail requirements for a 30 Tonne Axle Load structural loading whilst maintaining access and existing flood immunity for surrounding communities.

This project is a construct only contract, generally consisting of:

- ▶ Upgrades to approximately 171km of track, track formation, culverts and underbridges within the existing rail corridor;
- ▶ Realigning the track within the existing rail corridor at Gurley and Moree stations;
- ▶ New crossing loops and maintenance sidings;
- ▶ Around 250 rail culverts, 98 road culverts, 3 irrigation crossings and 8 under-bridges. Including a dive structure under the Newell Highway near Penneys Road
- ▶ 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, Coolleearlee, and Murgo;
- ▶ Removing the existing bridge and providing a new rail bridge over Croppa Creek;
- ▶ Upgrading, relocating or consolidating 75 level crossings
- ▶ Modifications to platforms at Moree Station.

1.2 Purpose and Scope

This Site Establishment Management Plan (SEMP or Plan) has been prepared to support pre-construction activities associated with the delivery of ARTC's Inland Rail Narrabri to North Star SP1 Project (N2NS). The purpose of this SEMP is to provide centralised strategy through which all potential environmental impacts will be managed for all site establishment works associated with Trans4m Rail's Construction Ancillary Facilities, intersections and access roads and includes management measures to avoid or minimise potential impacts.

This SEMP addresses all relevant site establishment requirements of the Minister's Conditions of Approval (CoA) SSI 7474, the Revised Mitigation Measures (RMMs), the Environmental Impact Statement, Volumes 1-7 (prepared by GHD and dated November 2017), the Inland Rail – Narrabri to North Star Submissions Preferred Infrastructure Report (SPIR) (ARTC, December 2019) and the Environmental Performance Outcomes detailed in Table 27.6 of the EIS. In addition to this, the SEMP identifies and addresses all other legislative and contractual requirements applicable to the proposed site establishment works.

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 Conditions of Approval 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 SEMP provides a management framework to ensure this occurs.

This SEMP will constitute the key environmental management document until such time the N2NS CEMP, as required under CoA C1 is prepared and approved by the Secretary. At such time, the SEMP will be retired, and the CEMP will become the key environmental management document for the construction phase the Project. The SEMP relates specifically to the establishment of the proposed construction ancillary facilities (CAFs). A range of additional minor ancillary facilities are also required for the project (e.g. for laydown areas, stockpile sites, etc.) however these will be assessed and approved separately in accordance with the requirements of the Minister's Condition of Approval A21 (Minor Ancillary Facilities).

The SEMP is consistent with the ARTC Inland Rail Environment and Sustainability Policy, ARTC Environmental Policy and Trans4m Rail’s Environment Policy (Appendix A).

1.3 Objectives and Targets

The key objective of the SEMP is to comply with the planning approval and the relevant legislative requirements whilst ensuring that all actual and potential environmental impacts associated with the construction of the ancillary facilities, the intersections and access roads are minimised and managed in line with the planning approval.

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 Sections 5 and 6) 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 5.

Project performance monitoring will be documented in the Project construction compliance reports (see Section 9) and at least on a quarterly basis as part of the management review.

Table 5: 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 either internal or external audits 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 participated in an environmental induction 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 8.

The implementation of the mitigation measures will ensure the performance targets are achieved. This will be managed through project inductions, specialised training, toolbox talks, inspections, and environmental monitoring and auditing. Project inductions will inform Trans4m Rail personnel (including subcontractors) of the management measures, while toolbox talks and specialised training will ensure they are reinforced throughout the construction program.

2 Community and Stakeholder Engagement

Trans4m Rail’s Community and Stakeholder Engagement Management Plan (CSEMP) provides a clear framework for active communication and stakeholder engagement management. The Plan 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 and complaints as they align to the Project delivery program. To the extent practicable, Trans4m Rail will provide stakeholders with open and transparent consultation.

NOTE: The CSEMP has been prepared to align with the requirements of the Communication Strategy as required under CoA B1 and B2. In the event that there is an inconsistency between the two documents, the Communication Strategy will prevail to the extent of the inconsistency.

CoA A17 requires that the SEMP be prepared in consultation with:

- ▶ Transport for NSW;
- ▶ Narrabri Shire Council;
- ▶ Moree Plains Shire Council; and
- ▶ Gwydir Shire Council.

As required by CoA A5, details of all information requested by an agency as a result of consultation, including copies of all correspondence from those agencies can be found in Appendix B. Appendix B also provides an assessment of where comments have been addressed in the SEMP.

2.1 Consultation Summary

Introductory videoconference meetings were held with the three Local Governments on 8th September 2020. The purpose of these meetings was to:

- ▶ Introduce Trans4m Rail and provide an overview of the N2NS project;
- ▶ Provide an overview of the CoA requirements for the SEMP, Construction Environmental Management Plan and associated sub-plans for N2NS;
- ▶ Provide an overview of the CoA conditions regarding consultation for the above plans; and
- ▶ Provide an indicative schedule as to when the plans would be sent to the respective Local Governments.

Follow up meetings were held with Narrabri (9th October 2020) and Gwydir (23rd October 2020) Councils to provide them with an updated indicative schedule. Trans4m Rail met with Moree Plains Shire Council on a weekly basis throughout October and November 2020 on a range of planning and approvals topics, including the SEMP, Construction Environmental Management Plan and associated sub-plans.

A copy of the draft SEMP was sent electronically to the stakeholders listed above on 26th October 2020. Table 6 summarises stakeholder feedback on the SEMP.

Table 6: Summary of Consultation

STAKEHOLDER	REQUIREMENT	STATUS	RESPONSE	DATE
Transport for NSW	Consultation	Completed	Email with comments received	26 th October 2020 13 th November 2020
Narrabri Shire Council	Consultation	Completed	Email/report with comments received.	20 th October 2020 ¹ 26 th October 2020 ²

STAKEHOLDER	REQUIREMENT	STATUS	RESPONSE	DATE
				30 th October 2020 ³ 22 nd January 2021 ⁴ 5 th February 2021 ⁵
Moree Plains Shire Council	Consultation	Completed	Email stating Council has no comments.	20 th October 2020 ¹ 26 th October 2020 ² 30 th October 2020 ³ 9 th November 2020
Gwydir Shire Council	Consultation	Completed	Email stating that Council is generally happy with the document, however given that the Croppa Creek CAF site location is yet to be determined by Trans4m it is difficult to provide comprehensive feedback.	20 th October 2020 ¹ 26 th October 2020 ² 30 th October 2020 ³ 13 th November 2020

NOTE:

1. Initial notification (Dave Carberry, 20th October 2020) advising stakeholders that the Draft SEMP will be issued for review on the 26th October 2020.
2. 26th October 2020 - Draft SEMP issued to all stakeholders for review via Aconex.
3. Follow up introduction email (Pippa Donaldson, 30th October 2020) and confirmation requested that the document could be opened and to reach out if any issues or concerns are experienced.
4. attempts to contact Narrabri Council Officers made by ARTC via phone. No answer.
5. Narrabri Shire Council submitted a report with comments on the CEMP, associated sub-plans and SEMP on 5th February 2021

3 Legal and Compliance Requirements

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 project was approved with conditions on 13th August 2020.

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

The Project Approval documentation includes the Narrabri to North Star EIS, associated technical assessments, Submissions Report and SPIR. The CoA constitutes the Primary Approval (Instrument of Approval) issued by the NSW Minister of Planning and Public Spaces. The CoAs relevant to the site establishment phase and where they have been addressed in this SEMP can be found in the Compliance Matrix at the beginning of this document.

Following consideration of the issues raised in the stakeholder and community submissions on the EIS and additional assessments undertaken, mitigation measures were updated and included in the SPIR. RMMs relevant to biodiversity and where they have been addressed in this SEMP can also be found in the Compliance Matrix at the beginning of this document.

The Secretary's Environmental Assessment Requirements (SEARs) identified a number of desired environmental performance outcomes (EPOs) for the N2NS project. Based on the outcomes of the EIS and the implementation of the RMMs, EPOs have been established for the proposal (Table 27.6 of the EIS). EPOs relevant to site establishment and where they have been addressed in this SEMP can also be found in the Compliance Matrix (Table 4) at the beginning of this document.

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 SEMP, in accordance with CoA A3 the CoA shall prevail to the extent of the inconsistency. In addition, in accordance with CoA A4, Trans4m Rail will comply with the written requirements or directions of the Planning Secretary.

3.1 Works permitted prior to construction

The Infrastructure Approval for SSI 7474 (Table 2 CSSI Conditions of Approval) provides a definition of Construction works to be carried out under the approval and also defines a number of low impact works activities which are permitted to be completed prior to approval of the CEMP as follows:

- (a) *survey works including carrying out general alignment surveys, installing survey controls (including installation of global positioning system (GPS)), installing repeater stations, carrying out surveys of existing and future utilities and building, and road dilapidation surveys;*
- (b) *investigations including investigative drilling, contamination investigations and excavation;*
- (c) *site establishment works approved under a Site Establishment Management Plan;*
- (d) *operation of ancillary facilities if the ER has determined the operational activities will have minimal impact on the environment and community;*
- (e) *treatment of contaminated sites subject to the recommendations of a Remediation Report prepared in accordance with Condition E82;*
- (f) *minor clearing and relocation of native vegetation, as identified in the documents listed in Condition A1;*
- (g) *installation of mitigation measures including erosion and sediment controls, temporary exclusion fencing for sensitive areas and acoustic treatments;*
- (h) *property acquisition adjustment works including installation of property fencing and relocation and adjustments of utilities to property including water supply and electricity;*
- (i) *relocation and connection of utilities where the relocation or connection has a minor impact to the environment as determined by the ER;*

- (j) *establishing minor ancillary facilities in accordance with Condition A21;*
- (k) *archaeological testing under the Code of practice for archaeological investigation of Aboriginal objects in NSW (Department of Environment Climate Change and Water, 2010) or archaeological monitoring undertaken in association with (a) to (n) below to ensure that there is no impact on heritage items;*
- (l) *salvage of Aboriginal artefacts in accordance with Condition C11(b);*
- (m) *other activities determined by the ER to have minimal environmental impact which may include construction of minor access roads, temporary relocation of pedestrian paths and the provision of property access; and*
- (n) *maintenance works to existing buildings and structures as required to facilitate the carrying out of the CSSI.*

However, where heritage items, or threatened species or their habitat, or threatened ecological communities (within the meaning of the Biodiversity Conservation Act 2016), are adversely affected or potentially adversely affected by any low impact work as defined in (a) to (k) above, that work is construction, unless otherwise determined by the Planning Secretary.

As noted in Section 1.1, this SEMP relates specifically to the establishment of the proposed CAFs. In accordance with CoA A18, the operation of a CAF for construction will not commence until the CEMP, relevant CEMP sub-plans and relevant Construction Monitoring Programs required by Condition C9 have been approved by the Planning Secretary.

It should be noted that Trans4m Rail intend utilising the compound locations identified and assessed as part of the N2NS Environmental Impact Statement (EIS) and Submissions Preferred Infrastructure Report (SPIR).

Further detail regarding activities to be carried out under the SEMP is provided in Section 5 and 6.

4 Environmental Management Framework

4.1 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. Figure 2, Hierarchy of EMS elements shows the included documents and hierarchy of the EMS elements within the IMS. The basis for the John Holland EMS (and also this SEMP) 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 Policy, including its commitments, environmental objectives and operating criteria and report the results; and
- ▶ **Act:** take actions to continuously improve.

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

- ▶ Trans4m Rail's Environment Policy
- ▶ 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
- ▶ Trans4m Rail project environmental procedures, tools and knowledge.

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

- ▶ Continuously improve the EMS to enhance performance, such as through management review and CEMP revisions
- ▶ 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 obligation.

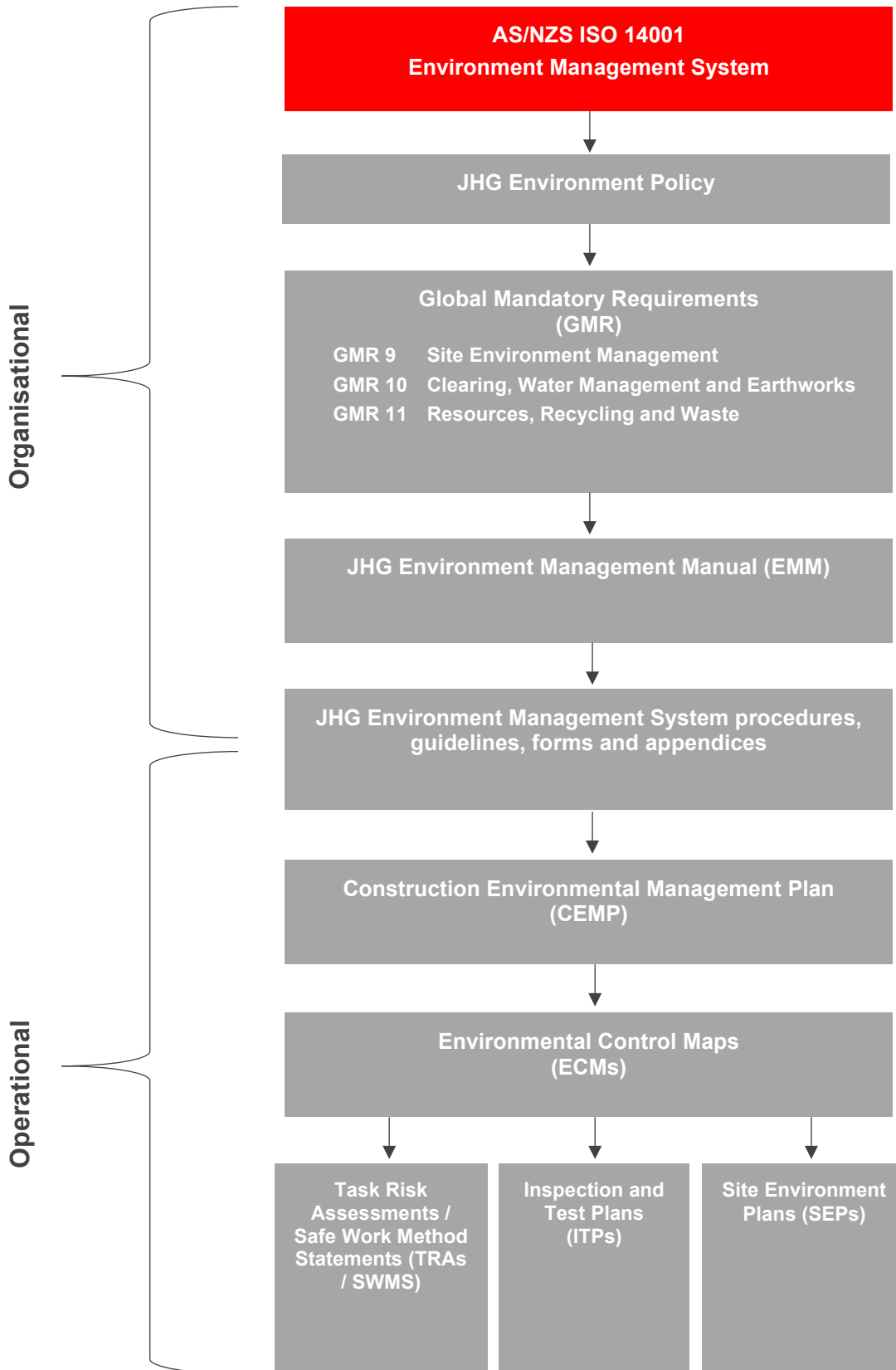


Figure 2: Hierarchy of EMS elements

5 Risk management

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);
 - Project wide risk assessment, reviewed bi-annually and in response to significant issues, incidents and non-compliances;
- ▶ Activity Method Statement (AMS);
 - Activity based Risk assessments, reviewed bi-annually and in response to significant issues, incidents and non-compliances;
- ▶ Task Risk Assessment (TRA)/Safe work Method Statements (SWMS);
 - Site specific, identifying key hazards and controls; reviewed and accepted for use prior to commencing work.
- ▶ Environmental Control Maps (ECMs)
 - Aspect specific, identifying key environmental risks and control measures.
- ▶ Site Environment Plans (SEPs)
 - Site specific plan/ drawings, identifying env risk and key controls, also include ESCP's and traffic management

The WRA, AMS's, TRA's/SWMS, ECM's and SEP's 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 Senior Management team, Environmental team, 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.

As noted above, identified risks will be managed through Trans4m Rail's Managing SQE Risks Procedure (T4MR -MPR-SQE-006) and the Trans4mRail Risk Management Process Flowchart.

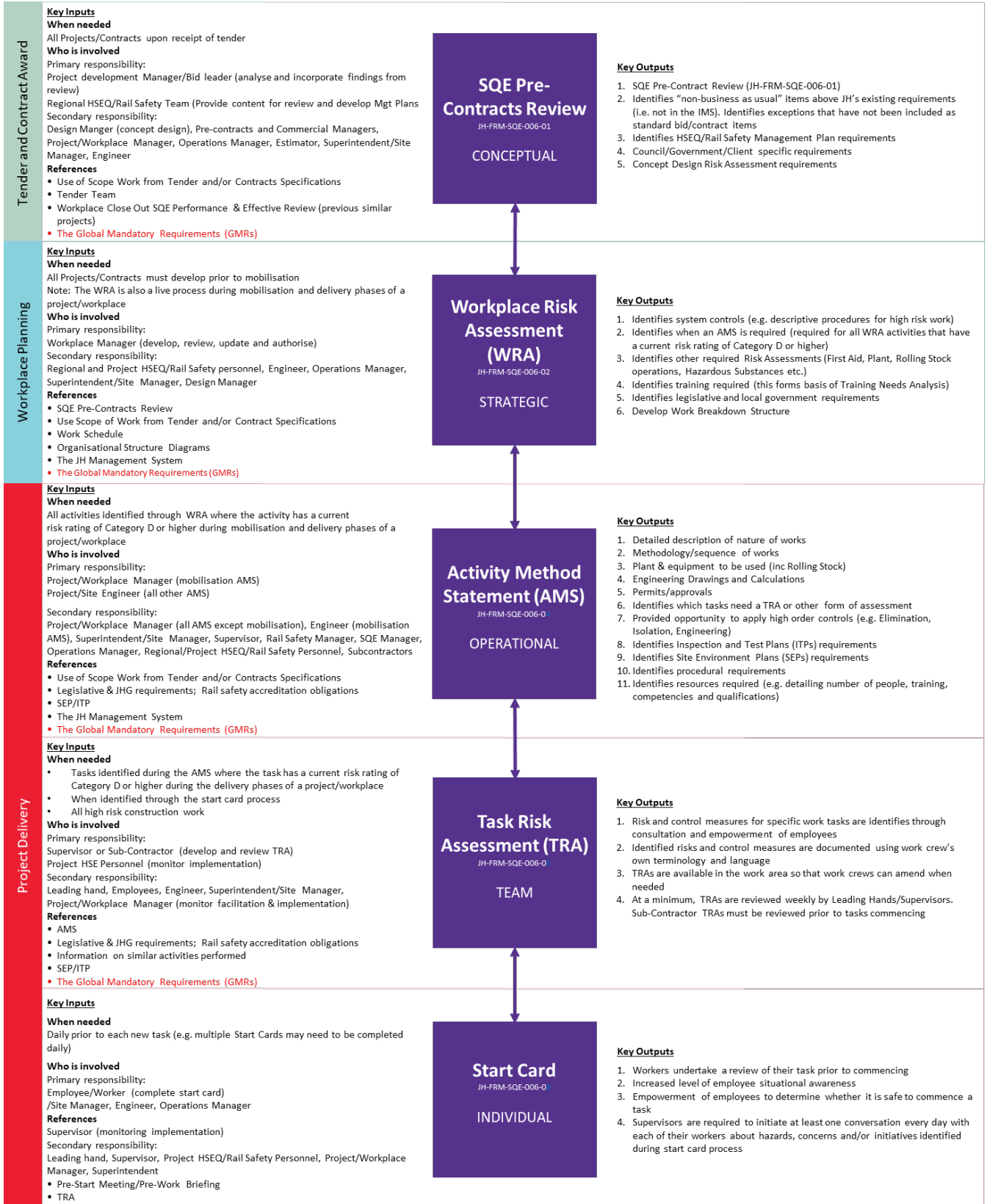


Figure 3 Risk Management Process Flowchart

6 Construction Ancillary Facilities & Site Establishment Works

6.1 Minor Ancillary Facilities

Potential site compound sites were identified and assessed as part of the N2NS Environmental Impact Statement (EIS) and subsequent Submissions Preferred Infrastructure Report (SPIR). Section 2.4 in Appendix B (Preferred Infrastructure Project Description) of the SPIR notes that two types of compounds are proposed:

- ▶ Minor compounds/storage areas located within the rail corridor (used for the assembly of adjacent infrastructure such as culverts and turnouts); and
- ▶ Temporary larger compound areas located outside the rail corridor every 4.5 to 5 km (used for general construction activities associated with each stage of work).

The SPIR states that the location of compounds have been determined based on the following criteria:

- ▶ At least 50 metres from watercourses and outside the five percent AEP flood zone
- ▶ Where no or only minor clearing would be required, and not within areas identified as threatened communities or species habitat
- ▶ No significant impacts to utilities, primarily gas and electricity
- ▶ At least one kilometre from the nearest residence or other noise sensitive receiver where possible
- ▶ Not on or near sites with known Aboriginal or non-Aboriginal heritage value
- ▶ Minimise use of private land
- ▶ Where safe access to the road network and rail corridor can be provided; and
- ▶ Relatively flat land.

As mentioned previously, Minor Ancillary Facilities (MAF) are assessed and approved separately by the Environment Representative in accordance with CoA A21.

6.2 Minor Ancillary Facility Stage 2 / Site 4 (Moree MAF)

In November 2020, a Minor Ancillary Facility Checklist was approved by the Project Environmental Representative for Minor Ancillary Facility Stage 2 / Site 4, known as the Moree MAF. The proposed use of the Moree MAF was:

- ▶ Trailer based (mobile) site office, port-o-loo and generator.
- ▶ Carparking for site personnel.
- ▶ Storage of mobile construction plant and equipment.
- ▶ Storage of drainage infrastructure (e.g. culverts, headwalls, etc).

Site establishment works are expected to commence on the Moree MAF in January 2021, with occupation from February 2021, weather permitting.

The footprint for the proposed Moree CAF (shown in Table 8) overlaps the footprint approved for the Moree MAF. For ease of management and to avoid any ambiguity, the Moree CAF, once approved will incorporate the footprint and all works and activities associated with the Moree MAF. At such time that this SEMP is approved, the MAF Checklist will be superseded and this SEMP will constitute the key management document for environmental and community risks and impacts.

6.3 Purpose of the Construction Ancillary Facilities

Two (2) CAFs will be established under the SEMP to support the Project. Generally, the CAFs will accommodate approximately 60 office staff each and be utilised for general construction activities associated with each stage of work. The purposes of each of the CAFs are detailed in the Sections below.

The CAFs will be located within the sites identified in Section 7.4 and Figure 8.2 of the Project EIS at:

- ▶ Bellata Ancillary Facility (CH602900)

- ▶ Moree Ancillary Facility (CH664000)

The CAFs identified above are selected based on the following:

- ▶ Proximity to the work site/s and construction staging;
- ▶ The level of compliance with the criteria detailed in the SPIR (see above);
- ▶ Proximity to sensitive receivers;
- ▶ The environmental value of the proposed site; and
- ▶ The vegetation clearing requirements for the establishment of the CAFs.

The site and environmental constraints are detailed in the sections below.

Each CAF would likely contain:

- ▶ Stockpiling of various construction materials including rail, sleepers, ballast, culverts, lime, water and structural fills;
- ▶ Bunded refuelling area;
- ▶ Fencing as required;
- ▶ Office area including parking, offices and ablutions;
- ▶ Mobile plant and equipment;
- ▶ Concrete batching plants (where required); and
- ▶ Hazardous material storage.

6.4 Site Establishment

Each of the CAFs will be established in the following manner:

- ▶ **Establishment of environmental controls:** Environmental controls (i.e. no-go flagging, erosion and sediment controls, etc) will be established in accordance with the site specific erosion and sediment control plan and/or relevant ECM.
- ▶ **Survey Set Out, Clearing and Grubbing:** Survey set out will be provided prior to site clearing. Clearing grass/shrubs will be undertaken according to the survey lay out;
- ▶ **Preparation of the site:** A 'Dig Before You Dig' Permit will be obtained prior to Excavation. Existing topsoil will be stripped, stockpiled and stabilised on site for re-use during rehabilitation works. Following removal of topsoil, the underlying subsoil layer will be made suitable for its intended use via one of the following methods;
 1. Quicklime applied, spread, pulverised and cured to a depth of up to 300mm, followed by a 150mm thick capping layer of imported crushed rock; and /or
 2. The foundation layer will be trimmed and compacted, followed by a layer of geofabric or geogrid installed where design dictates and capped with a 150mm thick layer of imported crushed rock. Platform thicknesses are subject to change and this will be dictated by the geotechnical results obtained within each area.
- ▶ **Installation of the Site Huts:** Installation commence as per the layout of each site office. Office blocks and lunch/toilet blocks will be delivered in flatbed trucks and will be craned into position according to the lay out provided;
- ▶ **Power, Internet and Water Supply:** Power, internet and water will be supplied as soon as all site huts are installed by qualified electricians and plumbers. The source of power and internet at Moree site office will be from nearby existing services which has been identified from DBYD investigation. Where there is no existing service available, power and internet will be supplied from generator/Wi-Fi. Water will be supplied by water tankers at each site compound; and
- ▶ **Fencing and Security:** The site compound will be fenced, and security monitoring measures will be in place once site is established. Boundary screening will be erected around the external fencing to minimise visual, noise and air quality impacts on sensitive receivers.

6.5 Construction / Establishment Timing and Program

Works are planned to commence on the following indicative schedule:

- ▶ Moree Ancillary Facility – January 2021 to April 2021 (established in time for Stage 2 possession); and
- ▶ Bellata Ancillary Facility - January 2021 to April 2021

This timing would be subject to weather and / or unexpected events.

The proposal will be undertaken during standard construction hours. Works are proposed for up to six days per week during the periods mentioned, weather permitting. By working six days per week the overall length of the work will limit the impact on road users and the local community.

It is not planned to undertake any site establishment works out of hours. Exceptions to that may be:

- ▶ When necessitated by TfNSW Newell Highway road licencing and traffic conditions; and/or
- ▶ To complete precast and materials deliveries that may be delayed by unforeseen road conditions *en route* and/or require Police escort.

6.6 Construction Plant and Equipment

The plant and equipment that are anticipated to be required for the proposal are shown below.

Table 6: Schedule of Plant and Equipment

SCHEDULE OF PLANT AND EQUIPMENT	
D6/D7 dozers	Excavators
Graders	Compactors and rollers
Flat Bed Trucks	Tipper Trucks/Road Trains
High Pressure Jet Washer	Vacuum Truck
Concrete Agitator Truck	Concrete pump
Mobile Lighting Tower	Chainsaws
Generator	Port-o-loo
Various Hand Tools i.e. hammers, electric drills, shovels, etc.	Traffic Control Equipment (i.e. VMB, signage, etc)
Light Vehicles	Mobile Site Offices (Trailer Based)

6.7 Construction Ancillary Facilities

The following tables summarise the relevant EIS / SPIR data and describe the proposed CAFs at:

- ▶ Bellata Ancillary Facility (CH602900), refer Table 7.
- ▶ Moree Ancillary Facility (CH664000), refer Table 8.

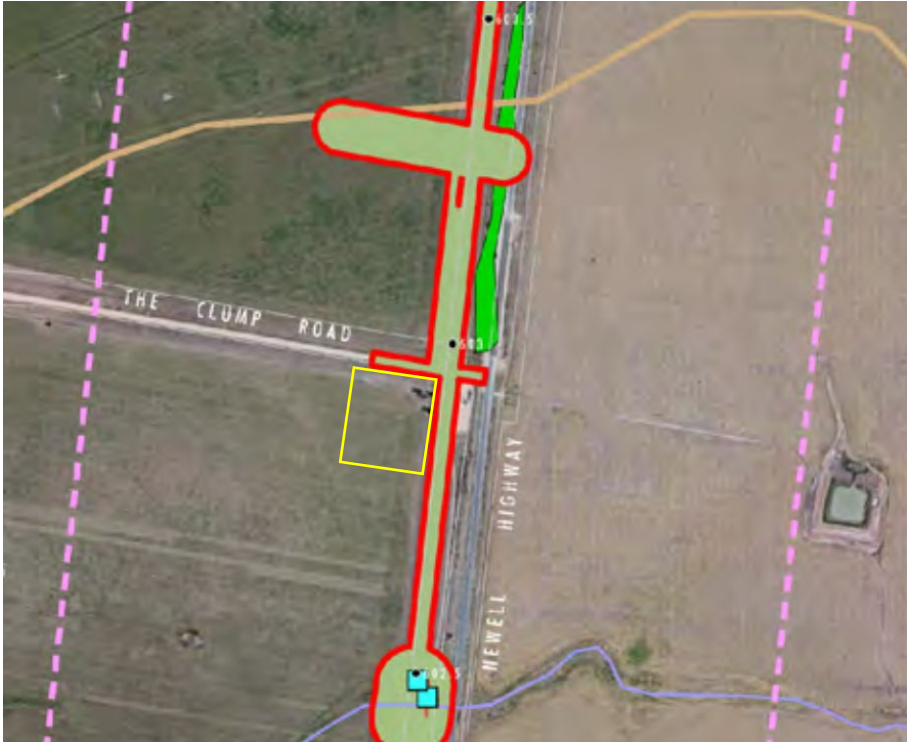
Table 7: Bellata Ancillary Facility

CONSTRUCTION BELLATA ANCILLARY FACILITY NAME:	
Chainage:	CH602900
Closest Cross-Roads:	Newell Hwy (A39) / The Clump Road
Local Government Area:	Narrabri Shire Council
Land Use (Zone):	RU1 – Primary Production

Lot / DP:	Lot 2 DP877592
Footprint / Size:	Approx. 3Ha
Use:	<p>The Bellata CAF will be utilised for the following purposes:</p> <ul style="list-style-type: none"> ▶ Temporary site offices for approx. 60 personnel (incl. carparking) ▶ Stockpiling of construction materials (i.e. structural fill, capping rock, ballast rock, lime, etc) ▶ Water storage (i.e. turkeys nest) ▶ Workshop and bunded refuelling area ▶ Storage of mobile construction plant and equipment ▶ Storage of drainage and track infrastructure (i.e. culverts, headwalls, rail, railway sleepers, etc) ▶ Mobile concrete batching plant ▶ Pugmill ▶ Crane pad ▶ Ablution blocks, waste and power generation facilities
General	<p>The Bellata CAF site is cleared, relatively flat and previously used for agricultural purposes (i.e. cropping). The site is surrounded by:</p> <ul style="list-style-type: none"> ▶ North: The Clump Road, agricultural land and Bulldog Creek ▶ East: Rail corridor (Mungindi Line), the Newell Hwy (A39) and agricultural land ▶ South: Agricultural land and Pan Creek ▶ West: Agricultural land and a residential receiver (NNS_Rx0761) <p>Residential receivers in the region are sparsely located.</p> <p>The predominant land use in the region is agriculture with much of the region zoned RU1 – Primary Production.</p> <p>The site is located approximately 12km south of the township of Bellata and access proposed via the upgrade of an existing intersection immediately to the east of the site at approximate chainage 602900 (Construction Gate 60.29).</p>
Noise (incl. Sensitive receivers)	<p>Two sensitive (residential) receivers have been identified within 2.5km of the Bellata CAF site. These have been identified to be:</p> <ul style="list-style-type: none"> ▶ NNS_Rx0761 – 960m to the north-west ▶ NNS_Rx0760 – 2,060m to the south-east <p>The locations of these receivers are shown in the images below:</p>



- ▶ Prior to site establishment works commencing, all potentially impacted landholders will be consulted regarding potential noise impacts associated with the construction of the Bellata CAF.
- ▶ The noise impacts to these sensitive receivers will be managed using the mitigation measures detailed in the SEMP.

<p>Biodiversity</p>	<ul style="list-style-type: none"> ▶ The site of the proposed Bellata CAF is cleared and previously utilised for extensive agriculture. No Plant Community Type/s, Threatened Ecological Community/s, threatened flora, threatened fauna or suitable habitat were mapped or recorded at the site during the Biodiversity Assessment undertaken for the Project EIS, see below. ▶ The closest mapped (Project EIS) native vegetation (green polygon in below image) is approximately 20m to the north of the intersection upgrade works (within the Newell Hwy road reserve) and will not be impacted by the site establishment works.  <p>NOTE: Pale green represents Cleared / Non-native Vegetation.</p>
<p>Soil</p>	<ul style="list-style-type: none"> ▶ The proposed Bellata CAF site is not located within the risk areas for actual or potential acid sulfate soils, as mapped by OEH (1998). ▶ Previous contamination assessments (GHD, 2014) reported that all samples collected along the proposal route were below the health investigation and screening levels for the relevant land use. ▶ Soils at the proposed Bellata CAF site are described as: <ul style="list-style-type: none"> ✓ Very deep (<271 cm) imperfectly to very poorly drained Brown Clay ✓ Cracks evident in clay layers ✓ Self-mulching when dry ✓ High run-off from plains near Bellata ✓ Slight erosion hazard ✓ No salting evident
<p>Hydrology and Flooding</p>	<ul style="list-style-type: none"> ▶ The proposed Bellata CAF location gently falls to the south-west to Pan Creek which is >400m to the south. ▶ The proposed CAF location is outside the area impacted by the existing one per cent AEP local (blue highlighted in below image) and / or regional flood extent. The changes to the local and / or regional flood extent does not impact on the proposed Bellata CAF location.

<p>Heritage (Aboriginal and non-Aboriginal)</p>	<ul style="list-style-type: none"> ▶ No areas or items of Aboriginal or non-Aboriginal significance have been identified on or adjacent to the proposed Bellata CAF site. ▶ The nearest items or areas of Aboriginal or non-Aboriginal significance are located slightly south of and within the village of Bellata approximately 12km to the north of the proposed CAF location. These heritage items will not be impacted by the establishment or operation of the Bellata CAF. 											
<p>Environmental Considerations:</p>	<p>The Bellata CAF is generally compliant with the locational criteria detailed in Section 8.4 of the Project EIS:</p> <table border="1"> <tr> <td> <ul style="list-style-type: none"> ▶ At least 50 metres from watercourses and outside the five per cent AEP flood zone </td> <td> <ul style="list-style-type: none"> ▶ Compliant – >400m from Pan Creek to the south and outside the area impacted by the one per cent AEP local and / or regional flood extent. </td> </tr> <tr> <td> <ul style="list-style-type: none"> ▶ Where no or only minor clearing would be required, and not within areas identified as threatened communities or species habitat </td> <td> <ul style="list-style-type: none"> ▶ Compliant - No mapped vegetation, TEC's or suitable habitat to be cleared. </td> </tr> <tr> <td> <ul style="list-style-type: none"> ▶ No significant impacts to utilities, primarily gas and electricity </td> <td> <ul style="list-style-type: none"> ▶ Compliant - No impacts to existing gas, electrical, water or communications utilities. </td> </tr> <tr> <td> <ul style="list-style-type: none"> ▶ At least 1.0 kilometre from the nearest residence or other noise sensitive receiver where possible </td> <td> <ul style="list-style-type: none"> ▶ Non-compliant – Bellata CAF is approx. 960m from the nearest sensitive receiver. Consultation will occur with all potentially affected landholders prior to site establishment. </td> </tr> <tr> <td> <ul style="list-style-type: none"> ▶ Not on or near sites with known Aboriginal or non-Aboriginal heritage value </td> <td> <ul style="list-style-type: none"> ▶ Compliant – The nearest area of 'moderate' or 'high' archaeological potential is >1km from the Bellata CAF site. </td> </tr> </table>		<ul style="list-style-type: none"> ▶ At least 50 metres from watercourses and outside the five per cent AEP flood zone 	<ul style="list-style-type: none"> ▶ Compliant – >400m from Pan Creek to the south and outside the area impacted by the one per cent AEP local and / or regional flood extent. 	<ul style="list-style-type: none"> ▶ Where no or only minor clearing would be required, and not within areas identified as threatened communities or species habitat 	<ul style="list-style-type: none"> ▶ Compliant - No mapped vegetation, TEC's or suitable habitat to be cleared. 	<ul style="list-style-type: none"> ▶ No significant impacts to utilities, primarily gas and electricity 	<ul style="list-style-type: none"> ▶ Compliant - No impacts to existing gas, electrical, water or communications utilities. 	<ul style="list-style-type: none"> ▶ At least 1.0 kilometre from the nearest residence or other noise sensitive receiver where possible 	<ul style="list-style-type: none"> ▶ Non-compliant – Bellata CAF is approx. 960m from the nearest sensitive receiver. Consultation will occur with all potentially affected landholders prior to site establishment. 	<ul style="list-style-type: none"> ▶ Not on or near sites with known Aboriginal or non-Aboriginal heritage value 	<ul style="list-style-type: none"> ▶ Compliant – The nearest area of 'moderate' or 'high' archaeological potential is >1km from the Bellata CAF site.
<ul style="list-style-type: none"> ▶ At least 50 metres from watercourses and outside the five per cent AEP flood zone 	<ul style="list-style-type: none"> ▶ Compliant – >400m from Pan Creek to the south and outside the area impacted by the one per cent AEP local and / or regional flood extent. 											
<ul style="list-style-type: none"> ▶ Where no or only minor clearing would be required, and not within areas identified as threatened communities or species habitat 	<ul style="list-style-type: none"> ▶ Compliant - No mapped vegetation, TEC's or suitable habitat to be cleared. 											
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<ul style="list-style-type: none"> ▶ At least 1.0 kilometre from the nearest residence or other noise sensitive receiver where possible 	<ul style="list-style-type: none"> ▶ Non-compliant – Bellata CAF is approx. 960m from the nearest sensitive receiver. Consultation will occur with all potentially affected landholders prior to site establishment. 											
<ul style="list-style-type: none"> ▶ Not on or near sites with known Aboriginal or non-Aboriginal heritage value 	<ul style="list-style-type: none"> ▶ Compliant – The nearest area of 'moderate' or 'high' archaeological potential is >1km from the Bellata CAF site. 											

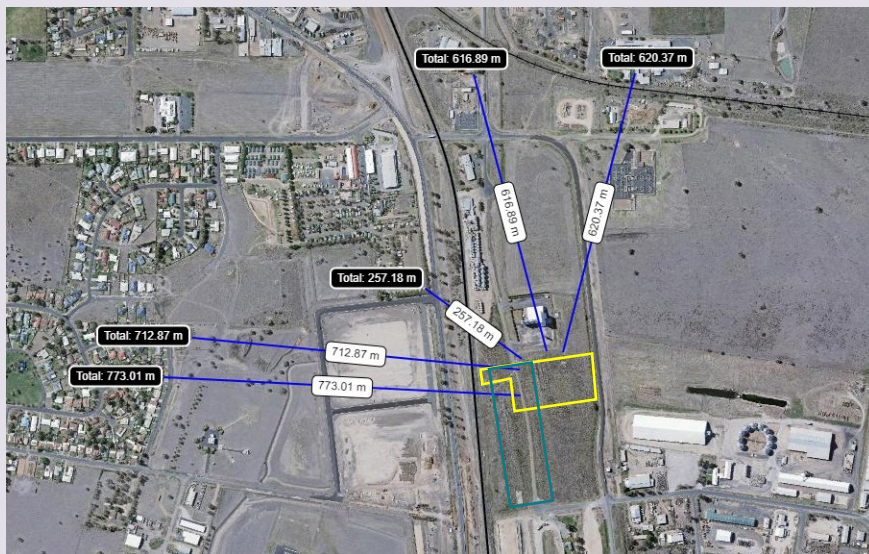
	<ul style="list-style-type: none"> ▶ Minimise use of private land where safe access to the road network and rail corridor can be provided on relatively flat land. 	<ul style="list-style-type: none"> ▶ Non-compliant – The Bellata CAF is proposed to utilise privately owned land, under approval and a lease agreement with the landholder.
	<ul style="list-style-type: none"> ▶ Where safe access to the road network and rail corridor can be provided. 	<ul style="list-style-type: none"> ▶ Compliant - Safe access will be provided via the upgrade of an existing intersection to provide a fully directional (left in/left out/right in/right out) intersection onto/from the Newell Hwy/The Clump Road. The new access will be Construction Gate 60.29.
	<ul style="list-style-type: none"> ▶ On relatively flat land. 	<ul style="list-style-type: none"> ▶ Compliant - The Bellata CAF is on relatively flat land with approx. 1m fall across the site.
<p>Access:</p>	<p>An existing intersection (The Clump Road / Newell Highway (A39)) will be upgraded to provide a fully functional (left in/left out/right in/right out) intersection. The upgraded intersection will provide access to the newly established Bellata CAF at approximate Chainage 602900 (Construction Gate 60.29).</p> <p>Access to Bellata CAFs is proposed to be constructed as site establishment works.</p> <p>TfNSW will need to review and approve the proposed design for the Clump Rd intersection.</p> <p>NOTE: Prior approval is required from TfNSW and a Works Authorisation Deed entered into between ARTC (as the proponent of N2NS Inland Rail) and TfNSW prior to works on the Newell Highway commencing.</p>	
<p>Site location</p>		
<p>Indicative Site Layout</p>		



Table 8: Moree Ancillary Facility

CONSTRUCTION ANCILLARY FACILITY NAME: MOREE	
Chainage:	CH663900
Closest Cross-Roads	Newell Hwy (A39) / Bulluss Drive
Local Government Area	Moree Plains Shire Council
Land Use (Zone):	IN1 – General Industrial
Lot / DP:	Lot 2 DP1189983
Footprint / Size:	Approx 3Ha.

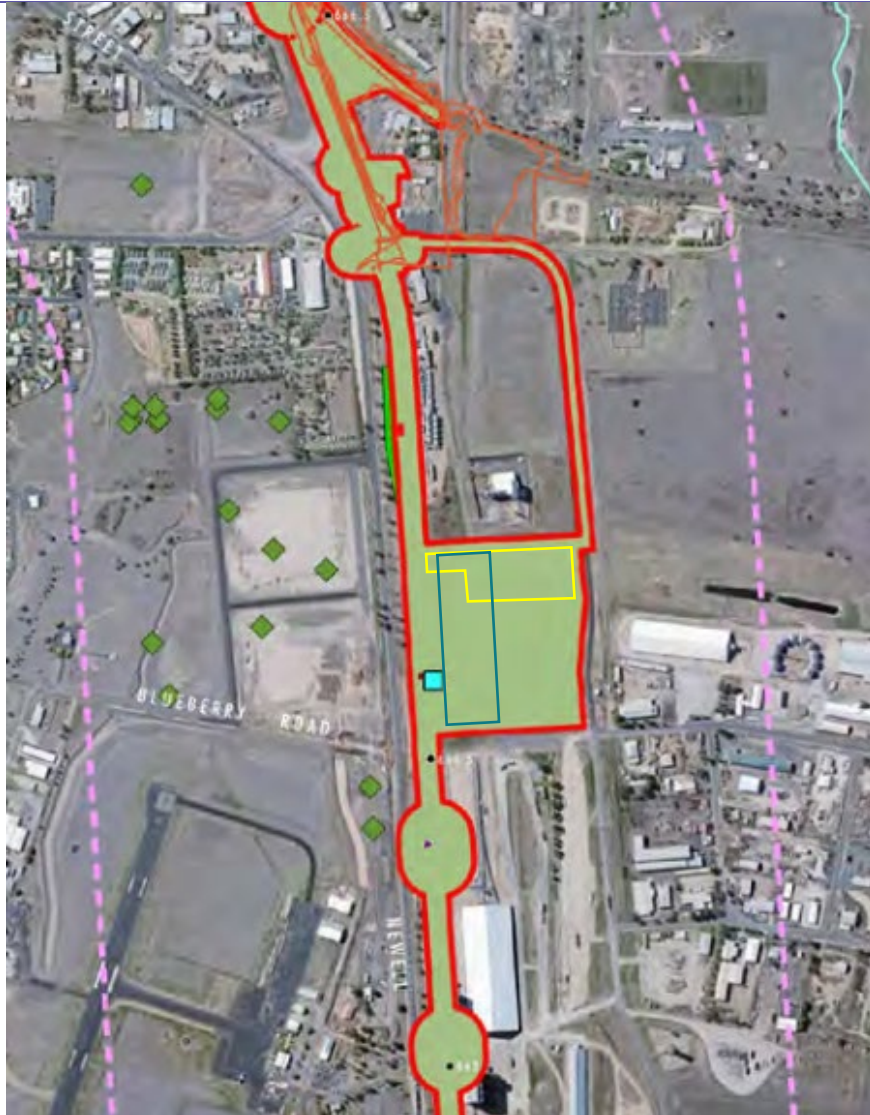
	NOTE: This is likely to change following the approval of the SEMP and the previously approved Moree MAF being absorbed into this footprint.
Use:	<p>The Moree CAF will be utilised for the following purposes:</p> <ul style="list-style-type: none"> ▶ Temporary site offices for approx. 60 personnel (incl. carparking) ▶ Stockpiling of construction materials (i.e. structural fill, capping rock, ballast rock, lime, etc) ▶ Water storage (i.e. turkeys nest) ▶ Workshop and bunded refuelling area ▶ Storage of mobile construction plant and equipment ▶ Storage of drainage and track infrastructure (i.e. culverts, headwalls, rail, railway sleepers, etc) ▶ Mobile concrete batching plant ▶ Pugmill ▶ Crane pad ▶ Ablution blocks, waste and power generation facilities
General	<p>The Moree CAF site is cleared, relatively flat and vacant land zone for General Industrial uses (IN1). The site is surrounded by:</p> <ul style="list-style-type: none"> ✓ North: General industrial and vacant industrial land (Zoned IN1 and IN2) and the Inverell Rail Line. ✓ East: General industrial and vacant industrial land (Zoned IN1). ✓ South: General industrial and the Moree Regional Airport. ✓ West: Rail corridor (Mungindi Line), Gwydir Hwy (A39), Gwydir Thermal Springs Motel and Caravan Park and vacant land zoned as Enterprise Corridor (Zoned B6). <p>▶ The predominant land uses in the area are Industrial (both IN1 and IN2), land zone as SP1 - Special Activities (Infrastructure) and B6 – Enterprise Corridor.</p> <p>The site is located in the southern extent of the township of Moree and access is proposed via Bulluss Drive. The construction of a new gate immediately to the west will provide direct access to the adjacent rail corridor at approximate chainage 664000 (Construction Gate 66.40).</p> <p>In the images below, the footprint for the proposed Moree CAF (shown in yellow) overlaps the footprint approved for the Moree MAF (shown in blue).</p> <p>NOTE: For ease of management and to avoid any ambiguity, the Moree CAF, once approved will incorporate the footprint and all works and activities associated with the Moree MAF. At such time that this SEMP is approved, the MAF Checklist will be superseded and this SEMP will constitute the key management document for environmental and community risks and impacts.</p>
Noise (incl. Sensitive receivers)	<p>Numerous sensitive receivers have been identified within 1km of the Moree CAF site. The closest of these have been identified to be:</p> <ul style="list-style-type: none"> ▶ NNS_Rx0765 – 880m north-east; ▶ NNS_Rx2484 – 250m north-west; ▶ NNS_Rx1259 – 610m north; ▶ NNS_Rx1257 – 610m north; ▶ NNS_Rx1256 – 620m north; ▶ NNS_Rx1016 – 710m west; and ▶ NNS_Rx0983 – 770m west. <p>The location of these receivers is shown in the images below:</p>



- ▶ Prior to site establishment works commencing, all potentially impacted landholders will be consulted regarding potential noise impacts associated with the construction and operation of the Moree CAF.
- ▶ The noise impacts to these sensitive receivers will be managed using the mitigation measures detailed in the Sections below.

Biodiversity

- ▶ The site of the proposed Moree CAF is previously cleared and vacant industrial land in the southern extent of the township of Moree. No Plant Community Type/s, Threatened Ecological Community/s, threatened flora, threatened fauna or suitable habitat was mapped or recorded during the Biodiversity Assessment undertaken for the Project EIS in the proposed CAF location.
- ▶ The closest mapped native vegetation (green polygon in below image) is approximately 200m to the north-west (Gwydir Hwy road reserve), which is outside the development footprint and will not be impacted by the establishment and operation of the CAF.
- ▶ Multiple *Desmodium compylcaulon* species credit locations (green diamond in below image) have been identified to the west of the proposed Moree CAF location. These will not be directly impacted by the establishment and operation of the Moree CAF.



▶ NOTE: Pale green represents Cleared / Non-native Vegetation.

<p>Soil</p>	<ul style="list-style-type: none"> ▶ The proposed Moree CAF site is not located within the risk areas for actual or potential acid sulfate soils, as mapped by OEH (1998). ▶ Previous contamination assessments (GHD, 2014) reported that all samples collected along the proposal route were below the health investigation and screening levels for the relevant land use. Soils at the proposed Moree CAF site are described as: <ul style="list-style-type: none"> ✓ Deep (<130 cm) very poorly drained Grey Clay occur on flat plains; ✓ Seasonal cracking when dry; ✓ Low run-off occurs in plains; ✓ Slight erosion hazard; and ✓ No salting evident.
<p>Hydrology and Flooding</p>	<ul style="list-style-type: none"> ▶ Approximately 1.8km to the Mehi River to the north of the CAF, ▶ The proposed CAF location is outside the area impacted by the one per cent AEP local (blue highlighted in below image) and / or regional flood extent. The increase in the local flood extent (red highlighted in below image) does not impact on the proposed CAF location. ▶ The changes to the local and / or regional flood extent at this location are considered minor.



NOTE:
 Yellow represents the reduction in local flood extent, Source Project EIS.
 Pink represents the increase in regional flood extent. Sources Project EIS.

<p>Heritage (Aboriginal and non-Aboriginal)</p>	<ul style="list-style-type: none"> ▶ No areas or items of Aboriginal or non-Aboriginal significance have been identified on or adjacent to the proposed Moree CAF site. ▶ The nearest items of Aboriginal significance are located adjacent Mehi River, 1.8km to the north. These items will not be impacted by the establishment or operation of the Moree CAF.
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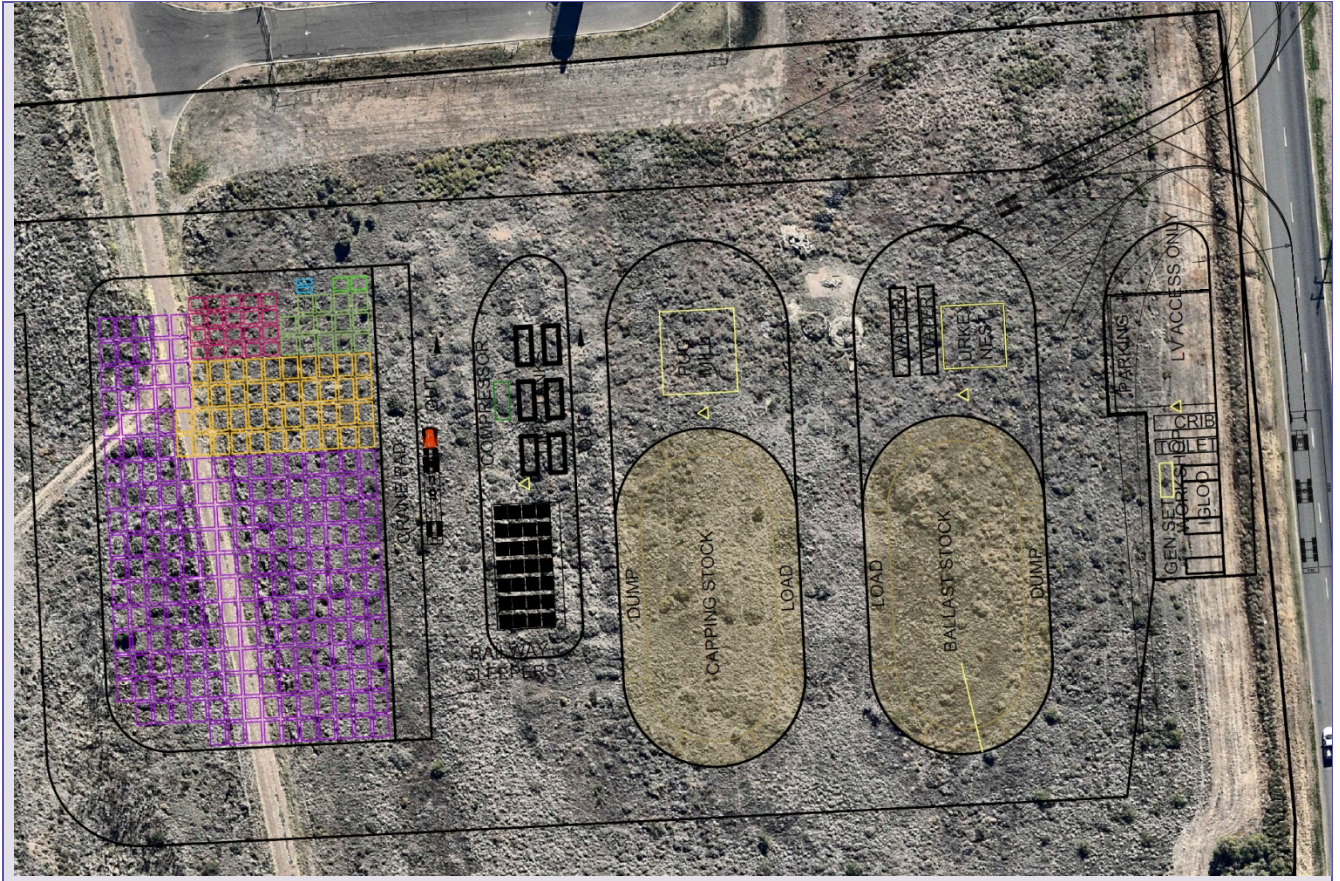
The nearest non-Aboriginal Heritage items (i.e. Moree Train Station, Moree Baths and Swimming Pool and Victoria Hotel) are located approx. 1.6km to the north. These will not be impacted by the establishment and / or operation of the proposed Moree CAF.

Environmental Considerations:

The Moree CAF is generally compliant with the locational criteria detailed in Section 8.4 of the Project EIS:

<ul style="list-style-type: none"> ▶ at least 50 metres from watercourses and outside the five per cent AEP flood zone 	<ul style="list-style-type: none"> ▶ Compliant – >1.8km to Mehi River to the north and outside the area impacted by the one per cent AEP local and / or regional flood extent.
<ul style="list-style-type: none"> ▶ Where no or only minor clearing would be required, and not within areas identified as threatened communities or species habitat. 	<ul style="list-style-type: none"> ▶ Compliant - No mapped vegetation, TEC's or suitable habitat to be cleared. The site is mapped as Cleared / Non-Native Vegetation.
<ul style="list-style-type: none"> ▶ no significant impacts to utilities, primarily gas and electricity 	<ul style="list-style-type: none"> ▶ Compliant - No impacts to existing gas, electrical, water or communications utilities.

	<ul style="list-style-type: none"> ▶ at least 1.0 kilometre from the nearest residence or other noise sensitive receiver where possible 	<ul style="list-style-type: none"> ▶ Non-compliant – Moree CAF is approx. 200m from the Gwydir Thermal Pools Motel and Caravan Park (Passive Recreation) and >600m from the nearest residential receiver. Consultation will occur with all potentially affected landholders prior to site establishment.
	<ul style="list-style-type: none"> ▶ not on or near sites with known Aboriginal or non-Aboriginal heritage value 	<ul style="list-style-type: none"> ▶ Compliant – The nearest area of ‘moderate’ or ‘high’ archaeological potential is Mehi Creek, >1.8km to the north.
	<ul style="list-style-type: none"> ▶ minimise use of private land where safe access to the road network and rail corridor can be provided relatively flat land. 	<ul style="list-style-type: none"> ▶ Non-compliant – Moree CAF is proposed to utilise privately owned land, under approval and a lease agreement with the landholder. Site is however within the approved Construction Impact Zone.
	<ul style="list-style-type: none"> ▶ Where safe access to the road network and rail corridor can be provided. 	<ul style="list-style-type: none"> ▶ Compliant - Safe access is provided to Bulluss Road via upgraded access, with access to the rail corridor either via Construction Gate 66.45 (Bulluss Road Level Crossing) or directly to the west.
	<ul style="list-style-type: none"> ▶ On relatively flat land. 	<ul style="list-style-type: none"> ▶ Compliant - The Moree CAF is on relatively flat land with <1m fall across the site.
<p>Access:</p>	<p>The existing intersection with the Newell Highway (A39) will be upgraded at Bulluss Drive (Construction Gate 66.45). The Moree CAF will be accessed via Bulluss Drive and the existing rail corridor immediately to the west.</p> <p>Access to the Moree CAF is proposed to be constructed as site establishment works.</p> <p>NOTE: Prior approval is required from TfNSW and a Works Authorisation Deed entered into between ARTC (as the proponent of N2NS Inland Rail) and TfNSW.prior to works on the Newell Highway commencing.</p>	
<p>Site location</p>		
<p>Indicative Layout</p>		



7 Environmental aspects and potential impacts

7.1 Construction Methodology

7.1.1 Pre-mobilisation works

Pre-mobilisation works will be undertaken including the preparation of management plans and associated documents, pre-clearing surveys, seeking any additional approvals or licences, procurement of plant and construction equipment and undertake community consultation and works notification activities.

7.1.2 Site Mobilisation works

Site mobilisation activities will then be undertaken including the establishment of the nominated ancillary facilities, set up the traffic management measures (incl. including safe motorist, pedestrian and cyclist access), induction of site personnel and installation of the site's environmental controls, exclusion zones and signage.

7.1.3 Vegetation Removal

Sites selected in accordance with **CoA A2**, based on having no impacts on biodiversity, (minimal vegetation removal required). Should tree removal be required, an Ecologist will undertake pre-clearing assessment and be present to supervise vegetation removal as necessary.

7.1.4 Earthworks

Hardstand Earthworks Treatment 1 – Existing topsoil will be stripped and stockpiled on the site. The foundation will be made good to bear construction plant. Quicklime will then be spread and pulverised to a depth of up to 300mm. The foundation will then be compacted and cured. Imported crushed rock will then spread and compacted to form the hardstand.

Hardstand Earthworks Treatment 2 – Existing topsoil will be stripped and stockpiled on the site. The foundation will be trimmed and compacted and made good to bear construction plant. Fabric or geogrid will then be installed. Imported crushed rock will then spread and compacted to form the hardstand.

Where feasible all surface water runoff will be diverted to the construction water storage basins for reuse.

7.1.5 Drainage works

Surface drainage works will be undertaken to establish clean and dirty water separation including establishing and lining of temporary drains or diversion bunds. Additionally, any existing flow paths interfacing with the compounds will be maintained using temporary culvert crossings. These may be either concrete, steel or poly pipe culverts.

7.1.6 Water storage

Detention basins will be excavated and where possible, any suitable cut material will be used to construct the basin walls. Quick-fill or pumping infrastructure will then be installed. Alternatively, above ground storage tanks will be constructed.

7.1.7 Lime storage

Designated areas for self-contained, tanker lime storage will be established preferably in areas on the extremities of the compounds to allow refilling and decanting in isolation and to maximise separation from sensitive receivers.

7.1.8 Access roads and temporary pavement works

Where temporary access roads are required to access the laydown areas, these will be generally constructed in the same fashion as the earthworks for the compound hardstands. That is, by removing topsoil, stabilising

foundations with lime and constructing with rock and gravel materials. They will be of a standard matched to the vehicle loadings expected to be needed to carry out the works over the required duration.

A number of temporary access gates will be required to be established to access the rail corridor. These are mostly located on the Newell Highway and will be designed, constructed, operated and maintained in accordance with Trans4m Rail's Traffic, Transport and Access Management Plan. The construction methodology for these gate locations will generally involve extending the existing shoulder of the Newell Highway. After establishing short term traffic guidance schemes, vegetation will be cleared and then the shoulders boxed out to foundation level. If foundations are found to be of adequate strength they will be compacted and then subbase and base layers of crushed rock will be installed. If they are inadequate, then foundations will likely be stabilised with lime and cured prior to installation of crushed rock. The top surface of base will then be primer sealed and a wearing coarse applied. This would likely be a double-double seal. Linemarking and any road furniture will then be installed to complete the pavement works. NOTE: In these situations, two-way traffic flow will be provided in the first instance except where insufficient width exists to construct either medium term temporary works or permanent works. In these cases, reversible shuttle flow (single lane) may need to be used.

In some cases, where there is adequate width of existing highway and providing the pavement is (a) fit for purpose and (b) doesn't decrease the minimum lane, shoulder and centre line widths, compliant gate accesses will be able to be established by using existing pavements and by water blasting off existing linemarking or blacking out with bituminous emulsion and then reinstalling new linemarking and seals.

7.1.9 Demobilisation and Rehabilitation Works

Once the compounds have reached the end of use, in most cases the gravel material will be loaded and hauled to be reused in other compounds. Foundations will then be deep ripped with dozers to loosen any lime stabilisation treatment and the stockpiled topsoil respread. Disturbed areas will be revegetated using a seed mix prescribed by ARTC and agreed by the landholder.

Demobilisation will be completed by a general site clean-up and removal of any waste material, removal of all plant and equipment, make good any damage caused, removal of environmental controls and traffic control management measures and will generally include the following activities:

- ▶ Site clean-up and rehabilitation works;
- ▶ Removing all fencing / hoarding, signage and temporary ancillary facilities, including capping off;
- ▶ Reinstating and stabilising the ground surface as per the original condition or as agreed in the relevant agreement;
- ▶ Reinstating any existing or new planted areas; and
- ▶ Removing environmental controls (e.g. erosion and sediment controls) once the site is stabilised.

7.2 Site establishment activities – aspects and impacts

7.2.1 Site establishment activities

Key aspects when establishing the ancillary facilities that could result in impacts to the environment as include:

- ▶ Vegetation clearing and topsoil stripping;
- ▶ Service searching, utilities relocations and installation of new utilities, as appropriate;
- ▶ Excavation and soil disturbance;
- ▶ Lime stabilisation works;
- ▶ Ground levelling works or installation of capping material;
- ▶ Vehicle and plant exhaust emissions (establishment and operation);
- ▶ Fuel and chemical storage, refuelling and chemical handling;
- ▶ Noxious weed treatment including herbicide spraying;
- ▶ Stockpiling of construction materials and spoil;

- ▶ Storage and transfer of plant and equipment;
- ▶ Site access out of standard hours;
- ▶ Use of lighting towers;
- ▶ Operation of heavy vehicles on access roads; and
- ▶ Parking or queuing on public roads.

7.2.2 Site establishment potential impacts

The EIS identified specific potential impacts and across all compounds:

- ▶ **Flooding** - the presence of construction work sites and compounds in floodplains has the potential to impact on surrounding properties
- ▶ **Increased biosecurity risks (e.g. pests, diseases, weeds)** - the construction compounds would include rubbish bins which could attract pest animals
- ▶ **Waste** - the establishment of these site compounds may generate some minor quantities of construction material waste such as metals, wood, concrete etc. Wastewater will be generated by site compound operation. Food waste, waste paper and cardboard, plastic, metal (including aluminium cans), glass, and electrical waste would be generated. Maintenance fluids would be generated during plant and equipment operation. Hydrocarbon and water mixtures or emulsions would be generated in plant and equipment wash-down areas.
- ▶ **Noise** – increased traffic volumes during site establishment. Construction noise, particularly during any works outside recommended standard work hours.
- ▶ **Traffic and access** – increased traffic volumes will occur in and around compounds.

7.3 Management of Ancillary Facilities

7.3.1 Environmental risk assessment for ancillary facilities

A Environmental Risk Analysis has been undertaken for site establishment activities (Appendix C). This analysis includes:

Key activities and related environmental aspects

- ▶ Potential impacts;
- ▶ Indicative mitigation and management measures;
- ▶ Risk level for each environmental aspect prior to / following mitigation measures; and
- ▶ Relevant management documents and training requirements.

Additional specific site establishment risks have been identified from:

- ▶ The EIS and SPIR;
- ▶ ARTC's compound site selection criteria; and
- ▶ Trans4m Rail's extensive experience with site establishment.

Based on the above, likely and/or potential impacts associated with the establishment, operation and decommissioning of the ancillary facilities include:

- ▶ Traffic and pedestrian access impact;
- ▶ Nuisance impact on nearby sensitive receivers (e.g. dust, noise, vibration and lighting);
- ▶ Water quality impacts due to runoff from stockpiles or stored material;
- ▶ Interruption of overland flow paths and changes to flood behaviour; and
- ▶ Removal of vegetation and trees.

8 Environmental Mitigation Measures

Environmental practices and procedure to manage the key risks associated with site establishment are discussed in the section(s) below.

8.1 Site Establishment Mitigation Measures

Specific measures and requirements to meet the objectives of this SEMP and to address impacts resulting from site establishment activities are outlined in Table 29.

Table 9: Site establishment management and mitigation measures

ISSUE	ID	MITIGATION MEASURES	TIMING	HOW ADDRESSED	RESPONSIBILITY
GENERAL ENVIRONMENTAL MANAGEMENT					
Site Induction	1	All employees, contractors and subcontractors would receive an environmental induction based on environmental impacts and legislative requirements associated to the ancillary works: <ul style="list-style-type: none"> ▶ Soil and Water ▶ Contamination and Hazardous materials <ul style="list-style-type: none"> ✓ Identification of potentially contaminated material. ▶ Traffic, transport and access ▶ Noise and Vibration ▶ Heritage (Aboriginal and non-Aboriginal) ▶ Biodiversity, including; <ul style="list-style-type: none"> ✓ Identification of target weed species. ✓ Identification of protected fauna species ▶ Hydrology and flooding ▶ Spoil and waste ▶ Incident and Event Management ▶ General Environmental Duty ▶ Duty to Notify 	Construction	Project training	Safety / Environment Manager

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Environmental control maps	2	<ul style="list-style-type: none"> ▶ Sensitive receptors and environmental impacts and mitigation measures associated to the ancillary works be clearly identified on environmental control maps, supplied to construction managers and workers. 	Construction	ECM	Environment Manager Construction Manager Site Supervisor
SOIL AND WATER					
Erosion of exposed soils and sediment management	3	<ul style="list-style-type: none"> ▶ Certified Progressive ESCPs (PESCP) will be developed and implemented. ▶ Sediment and erosion control devices will be installed and maintained as per the PESCP's to minimise mobilisation and transport of sediment and water pollution. ▶ Disturbed areas would be stabilised progressively to comply with the relevant PESCP. ▶ Where possible, soil and sediment that accumulates in erosion and sediment controls would be reused where practicable during site reinstatement, (unless it is contaminated or otherwise inappropriate for reuse). ▶ Erosion control devices would be removed once rehabilitation works are complete and confirmed rehabilitation is compliant with the PESCP. ▶ Where practicable, haul roads, ancillary facilities and heavily trafficked areas will be sheeted with a clean rock or gravel material. ▶ Stabilised site accesses (i.e. sealed pavement, rumble grid, etc) 	Pre and during Construction	PESCP's	Environment Manager Engineer Site Supervisor

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		<p>will be established at each egress / access location to avoid mud being tracked onto the Highway or other sealed, public roads.</p> <ul style="list-style-type: none"> ▶ Vehicles, plant and equipment (i.e. tail gates, drawbars, wheels, wheel arches, etc) will be inspected and cleaned down prior to plant entering a public road to ensure no bulk material will be dropped onto the public road. ▶ During and following times of rain, site access will cease or be restricted to avoid mud tracking. 			
Mobile concrete batching plant	4	<ul style="list-style-type: none"> ▶ Location of operation mobile batching plant will be identified on the relevant ECM. ▶ Water run off resulting from mobile batching plant will be managed in accordance with PESCP and Water, Erosion and Sediment ECM. 	Construction	ECM PESCP Water, Erosion and Sediment ECM (T4MR-FRM-ENV-001-11)	Environment Manager Environment Coordinator Site supervisor
Stockpile Management	5	<ul style="list-style-type: none"> ▶ Stockpiles will be managed in accordance with PESCP. ▶ No stockpiles of materials or storage of fuels or chemicals would be located within high / medium flood risk areas or flow paths. 	Construction	PESCP's ECM	Environment Manager Environment Coordinator Site supervisor
Spill management	6	<ul style="list-style-type: none"> ▶ Spill kits are maintained on-site, (clearly identified on the ECM) and/ or within site vehicles at all times. ▶ Refuelling of plant and equipment undertaken within designated areas with appropriate controls. ▶ Visual monitoring of local water quality (i.e. turbidity, hydrocarbon 	Construction	Hazardous Chemicals Procedure (T4MR-MPR-SQE-011); Hazardous Chemicals ECP (T4MR-	Environment Manager Environment Coordinator Site supervisor Plant operators

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		<p>spills/slicks) undertaken on a regular basis to identify any potential spills.</p> <ul style="list-style-type: none"> ▶ Vehicle wash down and/or cement truck washout will occur in a designated bunded area or in a designated bunded area off-site. 		FRM-ENV-001-07) Plant pre-starts	
Monitoring and Maintenance	7	<ul style="list-style-type: none"> ▶ Weekly, (or after a rainfall event causing runoff) environmental inspections of control measures will be undertaken to monitor effectiveness and maintenance requirements. ▶ Controls identified at capacity or requiring maintenance will be identified and listed for action to relevant site supervisors. ▶ Environmental inspections will be recorded via JHET and maintenance requirements communicated to the relevant site supervisors for timely completion. ▶ Noncompliance with PESCP or uncontrolled discharge event will be managed in accordance with the Incident and Event Procedure. ▶ During and following times of rainfall, site accesses and utilised public roads will be inspected to ensure mud is not being tracked onto public roads. In the event that mud is being tracked onto public roads, this will be immediately (within 24hrs) removed (i.e. street sweeper, brooms, etc). 	Construction	ESCP's JHET Incident and Event management (T4MR-MPR-SQE-010)	Environment Coordinator Site Supervisor
CONTAMINATION AND HAZARDOUS MATERIALS					
Hazardous Materials storage	8	<ul style="list-style-type: none"> ▶ Fuel handling, transport and storage will be managed in accordance with Fuel Handling, 	Construction	Hazardous Chemicals Procedure	All personnel

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		<p>Transport and Storage (refer to Hazardous Chemicals Management Procedure).</p> <ul style="list-style-type: none"> Fuel storage and refuelling locations will be identified on ECM's 		<p>(T4MR-MPR-SQE-011); Hazardous Chemicals ECP (T4RM-FROM-ENV-001-07) ECM</p>	
Contamination and Spill management	9	<ul style="list-style-type: none"> Spill kits are maintained on-site, (clearly identified on the ECM) and/ or within site vehicles at all times. All hazardous materials, spills and leaks would be reported to site managers, and actions would be immediately taken to remedy spills and leaks. Training in the use of spill kits would be given to all personnel involved in the storage, distribution or use of hazardous materials. Machinery will be checked daily to ensure that no oil, fuel or other liquids are leaking. Refuelling of plant and equipment will be undertaken within a designated refuelling point Hazardous materials and dangerous goods will be stored, handled, and transported in accordance with Hazardous Chemicals Procedure. All incidents and events will be managed in accordance with Incident and Event management procedure 	Construction	<p>ECM Hazardous Chemicals Procedure (T4MR-MPR-SQE-011) Plant pre-starts Incident and Event management (T4MR-MPR-SQE-010)</p>	Environment Manager All personnel

<p>Unexpected Contaminated finds</p>	<p>10</p>	<ul style="list-style-type: none"> ▶ Potential Unexpected soil contamination indicators could include: <ul style="list-style-type: none"> ✓ Unexpected staining or odours. ✓ Potential asbestos containing materials. ✓ Underground storage tanks, buried drums or machinery, ▶ Unexpected finds will be managed; <ul style="list-style-type: none"> ✓ Site workers would make the area safe, stop work, and notify the construction supervisor, who would quarantine/fence the area, notify staff on-site and the project manager. ✓ The project manager or their representative would notify an appropriately qualified environmental consultant who would carry out an assessment of the nature and extent of the unexpected contamination. ✓ Remediation would be undertaken as required and as advised by the environmental consultant. ✓ Works may only recommence at the site after approval has been obtained by the environmental consultant and the project manager. ✓ Validation of the remediation would be carried out to assess the success of the remediation works. 	<p>Construction</p>	<p>Incident and Event management (T4MR-MPR-SQE-010)</p>	<p>Environment Manager All personnel</p>
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		<ul style="list-style-type: none"> ▶ Unexpected Finds will be managed and reported in accordance with the Incident and Event management procedure 			
Monitoring and Maintenance	11	<ul style="list-style-type: none"> ▶ Weekly, (or after a rain event causing runoff) environmental inspections of control measures will be undertaken to monitor effectiveness and maintenance requirements. ▶ Controls identified at capacity or requiring maintenance will be identified and listed for action to relevant site supervisors. ▶ Environmental inspections will be recorded via JHET and maintenance requirements communicated to the relevant site supervisors for timely completion. ▶ Noncompliance with ECM's or contamination event will be managed in accordance with the Incident and Event Procedure. 	Construction	ESCP's JHET Env Inspections Incident and Event management (T4MR-MPR-SQE-010)	Environment Coordinator Site Supervisor
TRAFFIC, TRANSPORT AND ACCESS					
Construction Site traffic	12	<ul style="list-style-type: none"> ▶ Traffic and access would be managed in accordance with Traffic Control at Work Sites (RTA, 2010) and in consultation with TfNSW and local councils. 	Construction	Traffic Control Plans (including safe motorist, pedestrian and cyclist access)	Site Supervisor Traffic Engineer Safety Manager
		<ul style="list-style-type: none"> ▶ Variable Message Signage will be utilised to notify of upcoming works and changes 	Construction	Traffic Control Plans (including safe motorist, pedestrian and cyclist access)	Site Supervisor Traffic Engineer Safety Manager

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	<ul style="list-style-type: none"> ▶ Access for access for Over Size Over Mass vehicles will be provided at all times. 	Construction	Traffic Control Plans (including safe motorist, pedestrian and cyclist access)	Site Supervisor Traffic Engineer Safety Manager
	<ul style="list-style-type: none"> ▶ Where required access to individual residences, services and businesses, and access for livestock across the rail corridor, would be maintained during construction. Where alternative access arrangements need to be made, these would be developed in consultation with affected property owners/occupants. 	Construction	Traffic Control Plans (including safe motorist, pedestrian and cyclist access)	Site Supervisor Traffic Engineer Safety Manager
	<ul style="list-style-type: none"> ▶ Access for emergency vehicles will be maintained along key emergency access routes, with suitable alternative access arrangements provided where required. 	Construction	Traffic Control Plans (including safe motorist, pedestrian and cyclist access)	Site Supervisor Traffic Engineer Safety Manager
	<ul style="list-style-type: none"> ▶ 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. 	Pre-Construction	Traffic Control Plans (including safe motorist, pedestrian and cyclist access)	Site Supervisor Traffic Engineer
	<ul style="list-style-type: none"> ▶ Access to properties will be maintained during the entirety of works unless an alternative access is agreed in writing with the landowner(s) whose access is impacted by the works. 	Construction	Traffic Control Plans (including safe motorist, pedestrian and cyclist access)	Site Supervisor Traffic Engineer

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Pedestrian and cyclist	13	<ul style="list-style-type: none"> ▶ Where identified, measures to maximise safety and access, including signage for pedestrians and cyclists will be maintained, including details of alternative access arrangements. ▶ Appropriate controls would be established where vehicles are required to cross footpaths to access construction sites. ▶ Safe pedestrian access will be maintained around work sites during construction. 	Construction	Traffic Control Plans (including safe motorist, pedestrian and cyclist access)	Site Supervisor Traffic Engineer
Monitoring and Maintenance	14	<ul style="list-style-type: none"> ▶ Road dilapidation reports will be undertaken on any local or private roads used by a heavy vehicle for site establishment works. ▶ Weekly inspections of control measures will be undertaken to monitor effectiveness and maintenance requirements. ▶ Controls identified requiring maintenance will be identified and listed for action to relevant site supervisors. ▶ Inspections will be recorded via JHET and maintenance requirements communicated to the relevant site supervisors for timely completion. 	Construction	JHET Incident and Event management (T4MR-MPR-SQE-010)	Safety Manager Site Supervisor
NOISE AND VIBRATION					
Location	15	<ul style="list-style-type: none"> ▶ Work compounds, storage areas, parking areas, unloading/loading areas and other semi-permanent construction sites should be located away from noise sensitive receivers. Where this is not possible, the orientation and layout of the work site will consider noise 	Pre-Construction	Ancillary facility layout	Construction Manager

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		impacts, and opportunities to shield receivers from noise through the use of site buildings and stockpiles should be considered			
Construction hours and scheduling	16	<ul style="list-style-type: none"> ▶ In accordance with CoA E1, works will be undertaken during the following hours: <ul style="list-style-type: none"> ✓ 7:00 am to 6:00 pm Mondays to Fridays; ✓ 7:00 am to 6:00 pm Saturdays; and ✓ at no time on Sundays or public holidays. ▶ Works may be undertaken outside the hours specified under those conditions in the following circumstances: <ul style="list-style-type: none"> ✓ for the delivery of materials required by the NSW Police Force or other authority for safety reasons; or ✓ where it is required in an emergency to avoid injury or the loss of life, to avoid damage or loss of property or to prevent environmental harm; ✓ works affecting any given receiver may be undertaken during the hours of 6.00 am to 6.00 pm each day over a three (3) month period provided that there is no work between the hours of 6:00 pm on a Saturday and 7:00 am on a Monday every second week 	Construction Construction	Construction Hours Induction Toolbox training and awareness Noise and Vibration ECP (T4MR-FRM-ENV-001-09)	Environment Manager Construction Manager Community Stakeholder Engagement Manager Site Supervisor
	17	<ul style="list-style-type: none"> ▶ Additionally, and in relation to CoA E4 – Trans4m Rail and ARTC will 	Construction	Construction Hours	Environment Manager

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		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."		Toolbox training and awareness Negotiated agreements. Noise and Vibration ECP (T4MR-FRM-ENV-001-09)	Site Supervisor
	18	▶ All negotiated agreements must be in writing and finalised before the commencement of works.	Construction	Construction Hours Negotiated agreements.	Environment Manager Site Supervisor
	19	▶ 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.	Construction	Construction Hours Incident and Event management (T4MR-MPR-SQE-010) Noise and Vibration ECP (T4MR-FRM-ENV-001-09)	Construction Manager Environment Manager
Measuring and monitoring	20	▶ Additional 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.	Construction	Noise and Vibration monitoring (as required) Noise and Vibration ECP (T4MR-FRM-ENV-001-09)	Environment Coordinator Consultant
HERITAGE, (ABORIGINAL AND NON-ABORIGINAL)					
Unexpected finds	21	▶ Unexpected heritage items (both Aboriginal and non-Aboriginal) discovered during construction,	Construction	NSW Unexpected Heritage	Environment Manager All personnel

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		<p>including potential heritage items or objects, and human skeletal remains will be managed in accordance with NSW Unexpected Heritage Items (Heritage Procedure) and Heritage ECP</p> <ul style="list-style-type: none"> ▶ If potential Heritage, (aboriginal and non-aboriginal) items, objects, or human remains are uncovered; ▶ All works in the vicinity of the find shall cease and ARTC would be notified. ▶ An appropriate buffer area 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. 		<p>Items (Heritage Procedure) Heritage ECM (T4MR-FRM-ENV-001-08)</p>	
<p>Monitoring and Maintenance</p>	22	<ul style="list-style-type: none"> ▶ Unexpected heritage finds will be managed in accordance with NSW Unexpected Heritage Items (Heritage Procedure) and Incident and Event Management procedure. ▶ The integrity of established buffer zones, (in the event of an unexpected find) will be inspected weekly during the Environmental inspection 	Construction	<p>Incident and Event management (T4MR-MPR-SQE-010) Env inspection</p>	Environment Manager

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LIGHT AND VISUAL AMENITY					
General Worksite Management	23	<ul style="list-style-type: none"> ▶ Work sites would be maintained in a clean and tidy condition at all times. ▶ On completion of construction, all work sites and other land occupied temporarily would be rehabilitated in accordance with the PESCP and landholder agreements 	Construction	ECM PESCP Env inspection Landholder agreement	Environment Coordinator Supervisor
Lighting	24	<ul style="list-style-type: none"> ▶ Lighting would be installed and maintained in accordance with Australian Standard (AS) 4282 Control of the Obtrusive Effects of Outdoor Lighting ▶ Directional lighting would be mounted to avoid light spill into adjoining residences. 	Construction	Ancillary Facility lighting design	Environment Manager Project Engineer
Monitoring and Maintenance	25	<ul style="list-style-type: none"> ▶ Additional light monitoring may be required in response to complaints or evidence of impact to Fauna. ▶ Weekly inspections of control measures will be undertaken to monitor effectiveness and maintenance requirements. ▶ Controls identified requiring maintenance will be identified and listed for action to relevant site supervisors. ▶ Inspections will be recorded via JHET and maintenance requirements communicated to the relevant site supervisors for timely completion. 	Construction	Env inspections Incident and Event management (T4MR-MPR-SQE-010)	Environment Manager Environment Coordinator
COMMUNICATION MANAGEMENT					
Communication and complaints	26	<ul style="list-style-type: none"> ▶ The Department will be notified in writing of the date of commencement of the action 	Pre and during Construction	CSEMP	Environment Manager Community Stakeholder Engagement Manager

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		<p>within 10 business days after the date of commencement of the action.</p> <ul style="list-style-type: none"> ▶ Contact details for a 24-hour project response line and email address is provided for ongoing stakeholder contact throughout the construction period. ▶ Relevant stakeholders would be notified regarding service disruptions in accordance with the communication management plan. 			
Monitoring and Maintenance	27	<ul style="list-style-type: none"> ▶ 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. ▶ A Complaints Register must be maintained recording information on all complaints received about the CSSI during the carrying out of any works and for a minimum of 12 months following the completion of construction. The Complaints Register must record the: <ul style="list-style-type: none"> ▶ number of complaints received; ▶ number of people affected in relation to a complaint; and ▶ means by which the complaint was addressed and whether resolution was reached, with or without mediation. 	Pre and during Construction	CSEMP	Community Stakeholder Engagement Manager
BIODIVERSITY MANAGEMENT					

<p>Vegetation management</p>	<p>28</p>	<ul style="list-style-type: none"> ▶ Delineation of protected areas, clearing limits and NO- GO zones will be identified on ECM ▶ All vegetation clearing will be undertaken in accordance with the Clearing Management Procedure and pre-clearing survey requirements; <ul style="list-style-type: none"> ▶ 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. 	<p>Pre and during Construction Clearing</p>	<p>ECM Clearing Management Procedure (T4MR-MPR-ENV-004) Preclearing surveys</p>	<p>Environment Manager Construction Manager Site Supervisor</p>
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		<ul style="list-style-type: none"> ▶ 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. 			
Dewatering of pools	29	<ul style="list-style-type: none"> ▶ All dewatering will be completed in accordance with the Water Discharge procedure ▶ If aquatic species are identified prior to dewatering, collection and relocation of protected fish and euthanasia of pest species will be undertaken by a suitable qualified person. 	Construction	ECM Water Discharge Procedure (T4MR-MPR-ENV-003)	Environment Coordinator Aquatic Ecologist
Biosecurity management	30	<ul style="list-style-type: none"> ▶ Areas with identified weeds of national environmental significance will be identified on ECM's. ▶ Vehicles or equipment being brought onto the proposal site and/or travelling around the site will 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. 	Construction	ECM Clearing Management Procedure (T4MR-MPR-ENV-004)	Environment Coordinator Project Ecologist Supervisor
Monitoring and Maintenance	31	<ul style="list-style-type: none"> ▶ Weekly environmental inspections of site areas will be undertaken to monitor the spread of weed species. 		Env inspections JHET Incident and Event	Environment Manager Environment Coordinator

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		<ul style="list-style-type: none"> ▶ Controls identified and listed for action to relevant site supervisors. ▶ Inspections will be recorded via JHET and maintenance requirements communicated to the relevant site supervisors for timely completion. ▶ 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 managed in accordance with the Incident and Event procedure 		management (T4MR-MPR-SQE-010)	
AIR QUALITY AND DUST					
Dust suppression – construction works	32	<ul style="list-style-type: none"> ▶ Air quality and dust will be managed in accordance with the Dust and Air Quality ECM. ▶ Where the avoidance of dust-generating activities is not practicable, dust-suppression techniques to protect vegetation, worker health, amenity and the travelling public must be applied. ▶ Techniques may include spraying surfaces with water (via water trucks), irrigation, application of soil binders, revegetation and controls such as temporary enclosures. ▶ Dust suppressant additives may be used to increase effectiveness and to reduce the volume of water required. ▶ Where practicable, haul roads, ancillary facilities and heavily trafficked areas will be sheeted 	Construction	ECM PESCPs Dust and Air Quality ECM (T4MR-FRM-ENV-001-05)	Environment Coordinator Supervisor

	<p>with a clean rock or gravel material.</p> <ul style="list-style-type: none"> ▶ Open stockpiling of Quicklime or Hydrated Lime is not approved on-site. Lime must be delivered and used via contained ISO tanker directly to the work space for immediate incorporation into the stabilisation layer only. ▶ Delivery vehicles of lime will be fitted with dust containment (i.e. filters, bags, etc) mitigation measures. ▶ Quicklime / Hydrated lime transfer from refilling tanker to hopper truck is not to occur over or within 50m of active waterways / drainage lines. ▶ Check the forecasted wind and weather conditions prior to commencing lime stabilisation works. If rain is forecast (i.e. 10mm or more in a 24 hour period) or wind predicted (i.e. ≥30km/hr winds), the Superintendent must discuss the works with the Trans4M Rail Environmental Team to determine whether the lime stabilisation works should proceed (with additional controls) or should cease until conditions are more favourable. ▶ Schedule lime stabilisation works for early morning and late afternoon when wind speeds are likely to be lower. ▶ Due to steam production as part of the slaking process, consultation with the Safety and / or Traffic Control Team is required and 			
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	<p>implementation of additional traffic control measures may be required if works are planned in close proximity to an active road or Highway.</p> <ul style="list-style-type: none"> ▶ As the process of slaking quicklime produces an exothermic reaction of some 200 degrees Celsius, copious amounts of steam is produced which may be perceived as dust by the Community. The Trans4m Rail Community Team should be made aware of this process at least 24 hours prior to the works commencing, in order to manage concerns from Community members. ▶ Washdown of stabilising machinery and its water jets (where hydrated lime generally accumulates during the slaking process), and other lime covered machinery should be performed within the designated wash-down area so that all water is captured and incorporated into the stabilising layer, or within a dedicated washdown area (such as lined washdown pit). Do not wash-out equipment within 100m of a waterway or drainage line. ▶ Lime placement and integration is to be supervised at all times by a suitably experienced spotter who will monitor wind speed and lime dust lift. ▶ Do not stabilise during periods of wind which could cause loss of stabilising agent or cause a nuisance or danger to people, the 			
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		<p>environment, property or the travelling public. If environmental conditions are deemed unsuitable during the works, works will be stopped by the Supervisor, Environmental Manager or Engineer and suitable controls implemented to manage the dust.</p> <ul style="list-style-type: none"> ▶ If using a spreader truck, ensure the truck has a full length 'dust skirt' or hopper sleeve installed which encloses the spreader bar down to just above ground height to mitigate dust rise. ▶ Where possible, wet down the material under the lime before it is placed. ▶ After spreading the quicklime, immediately slake with water to reduce the period of time that lime is left exposed to wind conditions. ▶ Ensure the Stabiliser machine ('Pulvi') has a rotor housing which lowers with the pulverising rotors to mitigate dust lift and dirt debris. 			
Vehicle emissions	33	<ul style="list-style-type: none"> ▶ All plant and machinery would be fitted with emission control devices complying with relevant Australian Standards. ▶ Pre-start checklists and equipment maintenance logs indicating maintenance schedule shall be completed. 	Construction	Procurement Pre -start	Procurement team Supervisor
Monitoring and Maintenance	34	<ul style="list-style-type: none"> ▶ Visual inspection of airborne dust will be undertaken by the Supervisor and other Construction personnel daily and recorded in the daily diary whenever dust is 	Construction	ECM Env inspection Incident and Event management	Site Supervisor Environment Manager Environment Coordinator Community Stakeholder Engagement Manager

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		<p>observed leaving the site and additional measures are required.</p> <ul style="list-style-type: none"> ▶ Visual airborne dust monitoring will also be undertaken by members of the Environment Team as part of the weekly environmental inspection. ▶ Controls identified and listed for action will be provided to the relevant site supervisors. ▶ Inspections will be recorded via JHET and maintenance requirements communicated to the relevant site supervisors for timely completion. ▶ Complaints would be managed according to the CSEMP. ▶ Monitor predicted wind conditions on the days of dust generating activities and/or lime stabilisation activities and adjust / modify / cease activities where weather conditions are unfavourable (i.e. wind >30km/hour, rain causing runoff, etc). 		(T4MR-MPR-SQE-010) CSEMP	
HYDROLOGY AND FLOODING					
Flooding	35	<ul style="list-style-type: none"> ▶ 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. ▶ Locations of construction compounds, site offices, laydown areas including Construction Ancillary Facilities (CAFs) are positioned outside the 1 in 20 AEP (5% AEP) flood zone. 	Pre-construction Construction	Ancillary facilities layout and site selection	Environment Manager and Project Manager

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		<ul style="list-style-type: none"> Flood mitigation controls will be implemented as per the Flood Emergency Management Plan (FEMP) and ESCP, to ensure appropriate drainage from site and no impact to surrounding infrastructure 			
SPOIL AND WASTE					
Waste management	36	<ul style="list-style-type: none"> Waste Management will be undertaken in accordance with Waste Management Procedure (Segregated) waste reciprocals and locations will be identified on ECM's 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 disposed of in accordance with the POEO Act. 	Construction Construction	ECM Waste Management Procedure (T4MR-MPR-ENV-007) and Waste and Resource ECM (T4MR-FRM-ENV-001-10)	Environment Manager Environment coordinator Site Supervisor
Monitoring and Maintenance	37	<ul style="list-style-type: none"> (Segregated) waste reciprocals and locations will be monitored as part of the weekly environmental inspection Improvements and non-compliances identified and listed for action to relevant site supervisors. Inspections will be recorded via JHET and maintenance requirements communicated to the relevant site supervisors for timely completion. 	Construction	ECM Env Inspection	Environment Manager Supervisor
HAZARDS AND RISKS MANAGEMENT SYSTEM					

Risk and Hazard Management	38	<ul style="list-style-type: none"> ▶ The process of assessing and reducing environmental risk will be achieved through Trans4m Rail's Managing SQE Risks Procedure (<u>T4MR-MPR-SQE-006</u>). 	Pre-construction	Trans4m Rail's Managing SQE Risks Procedure (T4MR-MPR-SQE-006). Workplace Risk Assessment (WRA) Activity Method Statement (AMS) Task Risk Assessment (TRA) Safe Work Method Statement (SWMS); Environmental Control Maps (ECMs).	WHS Manager Construction Manager Environment Manager
Environmental Management System	39	<ul style="list-style-type: none"> ▶ John Holland Group's Environmental Management System (EMS) (which is certified to ISO AS/NZS14001) ▶ Accurate, legible, and complete compliance records will be retained throughout the construction of the CSSI. 	Pre-construction	EMS ISO AS/NZS14001	WHS Manager Construction Manager Environment Manager

9 Compliance Management

9.1 Roles and responsibilities

Specific responsibilities for the implementation of environmental controls are detailed in Section 8 of this Plan.

9.2 Competence, training and awareness

To ensure that this SEMP is effectively implemented, each level of management is responsible for ensuring that all personnel reporting to them have the necessary resources, training and awareness of the environmental requirements of this SEMP.

The Trans4m Environment Manager will coordinate the environmental training in conjunction with other training and professional development activities.

9.2.1 Environmental induction

All personnel (including sub-contractors) are required to attend a compulsory site induction that includes an environmental component prior to commencement on-site. This is done to ensure all personnel involved in the project are aware of the requirements of the SEMP and to ensure the implementation of all required environmental management measures.

Short-term visitors to site for purposes such as deliveries will be required to be accompanied by inducted personnel at all times. A visitors' induction will also be undertaken for visitor's onsite for short periods as agreed with the Trans4m Project and Safety Manager.

The Trans4m Environment Manager (or delegate) will be responsible for providing the environmental component of the site inductions. The environmental component will include, but not limited to, an overview of:

- ▶ Relevant details of the SEMP including purpose and objectives
- ▶ Key environmental issues, risks and environmental duty of care
- ▶ Conditions of environmental licences, permits and approvals
- ▶ Specific environmental management requirements and responsibilities
- ▶ Mitigation measures for the control of environmental issues
- ▶ Incident response and reporting requirements
- ▶ Information relating to the location of environmental constraints.

A record of all environment inductions will be maintained and kept on-site. The Trans4m Environment Manager may authorise amendments to the induction at any time. Possible reasons for changes to the induction may be work modifications, legislative changes or amendments to this SEMP or related documentation.

In addition to the N2NS induction, sub-contractors will be required to develop and implement their own environmental training and induction program relevant to their scope of works. Each Contractor's induction will include the relevant site specific requirements and control measures and the necessary instruction on the implementation of their environmental management systems.

9.2.2 Toolbox, training and awareness

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

Toolbox talks will include details of this SEMP for relevant personnel. Toolbox talks will also be tailored to specific environmental issues relevant to upcoming works.

Relevant environmental issues raised at Toolbox Talks may include (but are not limited to):

- ▶ Erosion and sediment control

- ▶ Hours of work
- ▶ Emergency and spill response
- ▶ Aboriginal and non-Aboriginal heritage
- ▶ Threatened species, endangered ecological communities, clearing controls and vegetation protection
- ▶ Weed management
- ▶ Dust control
- ▶ Incident reporting requirements and complaints handling
- ▶ Working near or over water and water pollution controls
- ▶ Noise and vibration control
- ▶ Storage and handling of chemicals
- ▶ Management of concrete pours
- ▶ Lime stabilisation operations
- ▶ Results/actions from any site inspections or audits.

Records of training and toolbox meetings will be retained by Trans4m General Superintendent and provided on a monthly basis to the Tran4m Environment Manager. Toolbox attendance is mandatory, and attendees of toolbox talks are required to sign an attendance form and the records maintained.

Targeted environmental awareness training will be provided to individuals or groups of workers with a specific authority or responsibility for environmental management or those undertaking an activity with a high risk of environmental impact. Topics covered may include those detailed above, or others deemed necessary in the lead up to or during construction.

Another way to inform construction personnel will be through the development and distribution of awareness notes. These will typically take the form of a poster, booklet, or similar and will be distributed to engineers, leading hands, foreman and others with a responsibility for managing specific work locations or activities. This documentation will be used to inform the broader workforce through either daily pre-starts meeting or provision in the HSE Noticeboard, worker crib sheds and / or toilet facilities.

The Trans4m Environment Manager will establish a schedule of environmental training. Training in high risk aspects of the Project shall be undertaken as the project progresses. The training shall be scheduled to reflect the requirements of the construction program.

9.2.3 Daily Pre-starts

The pre-start meeting is a tool for informing 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, hazards and other information that may be relevant to the day's work.

The Trans4m General Superintendent (or delegate) will be responsible for conducting a daily pre-start meeting with the site workforce before the commencement of work each day (or shift) or where changes occur during a shift. Daily pre-start meetings are generally succinct in nature and take about 10–15 minutes.

The environmental component of pre-starts will be determined by the General Superintendent and/or the relevant foreman or environmental personnel and will include any environmental issues that could potentially be impacted by, or impacted on, the day's activities. All attendees will be required to sign on to the pre-start and acknowledge their understanding of the issues explained.

Pre-start topics, dates delivered, and a register of attendees will be recorded.

9.3 Environmental incident and emergency response

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

10 Monitoring and Reporting

10.1 Reporting

10.1.1 Internal Reporting

In the event of an environmental incident, the Trans4m Rail Environmental Incident Response and Reporting Procedure will be implemented the Trans4m Incident and Emergency Response Plan will be implemented. The Incident and Emergency Response Plan will address the requirements of the POEO Act, ARTC's Project Environmental Incident and Reporting Procedure (5-9020-0000-EEC-PR0001) and any relevant project approvals or licences (e.g. EPL).

The procedure provides references to:

- ▶ Types of incidents
- ▶ Criteria for classifying of environmental incidents
- ▶ Processes for systematically responding to and managing emergency situations
- ▶ Processes, and legal requirements (e.g. Acts, Regulations, EPL), for reporting and notification of an environmental incident.

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 37 and 38)
- ▶ 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.

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, and as per Contractual reporting requirements. 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.

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.

10.1.2 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, the ARTC Environmental Advisor and/or the Environmental Field Officer must be notified immediately to determine if any Authority notification is required as well as notifying ARTC in writing on IREnvironmentCompliance@ARTC.com.au.

For all environmental incidents, (determined by ARTC to be notifiable), ARTC will notify DPIE in writing immediately after becoming aware of an incident. (Emergency incidents will be reported to both ARTC and relevant authority concurrently).

The notification must identify the CSSI (including the application number and the name of the CSSI) 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/ARTC 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 conditions of approval;
- ▶ 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.

10.2 Communication and complaints management

10.2.1 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 communication activities will be managed by a Stakeholder Engagement Team.

10.2.2 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 toolbox talks, environmental inductions, awareness training and daily pre-start meetings as described in Section 6.11. 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.

Contact names and telephone numbers for key personnel will be provided in the 'List of emergency and key contacts' in this CEMP following award of contract.

10.2.3 External Communication

To the extent practicable, Trans4m Rail will provide stakeholders open and transparent consultation. During development of the SEMP, consultation occurred with identified parties as required by CoAs A5 and C4. The consultation process generally comprised:

- ▶ Trans4m Rail submitting the SEMP to the relevant stakeholders for review and comment;
- ▶ 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.

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 summarised in Appendix B.

The Project Team will provide electronic copies of compliance records to ARTC, the Project ER and any relevant regulatory authorities in accordance with the agreed timeframes or as per any reasonable request made by the authority.

10.3 Monitoring and inspection

Monitoring, inspections and reporting requirements relevant to site establishment activities are identified in Table 9. (The Project Team will retain accurate and complete compliance records including, but not limited to those detailed in Table 9).

Table 10: N2NS SEMP Monitoring and Reporting Overview

ASPECT	REQUIREMENT	SCHEDULE
MONITORING		
Weather forecasts	Monitoring of weather forecasts to determine when adverse weather conditions are predicted. Specific notifications will be made if: <ul style="list-style-type: none"> ▶ Winds >25 km/hr and/or ▶ Temperature >30oC are forecast ▶ High rainfall events 	<ul style="list-style-type: none"> ▶ Weekly forecast ▶ Daily updates when adverse weather is predicted
Weekly inspections	Inspection of the environmental controls and implementation of the mitigation measures outlined in Table 10 including but not limited to: <ul style="list-style-type: none"> ▶ Boundary screening ▶ Waste storage, collection and disposal practices 	<ul style="list-style-type: none"> ▶ Weekly

	<ul style="list-style-type: none"> ▶ Erosion and sediment controls ▶ Measures to prevent tracking of material onto the surrounding road network ▶ Temporary lighting orientated to minimise glare and light spill ▶ Vegetation protection measures ▶ Ancillary facility surfaces compacted or sealed to limit the potential for dust generation ▶ Chemical and fuel storage ▶ Traffic Control Plan measures (including safe motorist, pedestrian and cyclist access) 	
Waste tracking	<ul style="list-style-type: none"> ▶ Volumes of waste reused, recycled or recovered. Exported waste disposal location/s ▶ Any soil 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. 	<ul style="list-style-type: none"> ▶ Monthly. ▶ Data managed in Waste & Recycling feature of Project Pack Web. ▶ Waste Beneficial Reuse Register.
Visual surveillance of dust	<ul style="list-style-type: none"> ▶ No visible dust emissions during activities with high potential to produce dust and during prolonged dry or windy conditions 	<ul style="list-style-type: none"> ▶ Daily and weekly site visual inspections ▶ Daily diary
Biodiversity	<ul style="list-style-type: none"> ▶ Post Clearing Reports will be undertaken to track and monitor the clearing of mapped, native vegetation to ensure compliance with Table E1 of the CoA. 	<ul style="list-style-type: none"> ▶ Post Clearing Reports
Resource usage	<ul style="list-style-type: none"> ▶ Consumption data for energy, water, etc. used on the project. ▶ Compare actual consumption versus consumption predicted in the Construction Sustainability Management Plan. 	<ul style="list-style-type: none"> ▶ Monthly
Soil and Water	<ul style="list-style-type: none"> ▶ Discharge water treated through erosion and sediment control devices will be monitored to ensure discharge meets discharge criteria. ▶ Water discharged does not exceed the ANZECC 2000 guidelines for protection of aquatic ecosystems or water quality trigger values or the Project EPL. 	<ul style="list-style-type: none"> ▶ Prior to discharge. ▶ At locations specified in the ESCPs ▶ All dewatering records managed via an internal Permit to Discharge on PPW.
Noise and vibration	<ul style="list-style-type: none"> ▶ Noise and vibration monitoring of ancillary facilities will occur at the nearest sensitive receiver where noise and vibration generating activities are identified to occur within the safe working buffer distances outlined in Section 12.2 of the SPIR. ▶ The noise and vibration monitoring data will be used to inform construction scheduling and the adequacy of mitigation measures. 	<ul style="list-style-type: none"> ▶ Where noise and vibration generating activities are identified to occur within the safe working buffer distances outlined in Section 12.2 of the SPIR, noise and vibration would be undertaken in accordance with SPIR Appendix J NSW Noise and Vibration Management Framework
Air Quality Monitoring	<ul style="list-style-type: none"> ▶ Dust deposition monitoring at representative sensitive receivers at risk of air quality impacts from site establishment activities. 	<ul style="list-style-type: none"> ▶ Monthly processing and reporting

	<ul style="list-style-type: none"> ▶ Dust generated during construction will not exceed the relevant criteria in the <i>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)</i>. 	
Environmental Complaints	<ul style="list-style-type: none"> ▶ Monitoring of the number and types of complaints and compliance with the Community and Stakeholder Engagement Management Plan. 	<ul style="list-style-type: none"> ▶ 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.
REPORTING		
Site Commencement	<ul style="list-style-type: none"> ▶ 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. 	<ul style="list-style-type: none"> ▶ Site Commencement
Site inspection reports	<ul style="list-style-type: none"> ▶ Environmental inspection report Submitted to the Trans4m Rail Project Director, Environment Manager, Construction Manager and Supervisor. 	<ul style="list-style-type: none"> ▶ 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	<ul style="list-style-type: none"> ▶ Progress reports including non-conformances, issues and corrective actions submitted to the Trans4m Rail Project Director. 	<ul style="list-style-type: none"> ▶ Monthly and managed in the Document Management System (DMS).
Audit reports	<ul style="list-style-type: none"> ▶ Trans4M Rail EMS audits to be undertaken by external auditor. Project audits to be undertaken by the John Holland Regional Environment Manager. 	<ul style="list-style-type: none"> ▶ Six monthly and managed in Event Tracker.
Environmental Return	<ul style="list-style-type: none"> ▶ 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. 	<ul style="list-style-type: none"> ▶ Monthly and managed in the DMS.
Compliance tracking report	<ul style="list-style-type: none"> ▶ Identifies progress and evidence of compliance against each compliance requirement. 	<ul style="list-style-type: none"> ▶ 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	<ul style="list-style-type: none"> ▶ Provision of details of any review of, and minor amendments made to, the CEMP resulting from construction carried out during the reporting period. 	<ul style="list-style-type: none"> ▶ 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.

<p>Annual Compliance Reporting</p>	<p>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:</p> <ul style="list-style-type: none"> ▶ Publish each compliance report on the website within 60 business days following the relevant 12 month period; ▶ 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 ▶ Keep all compliance reports publicly available on the website until this approval expires 	<ul style="list-style-type: none"> ▶ Annually, within 60 business days following the relevant 12 month period.
<p>Incident reports</p>	<p>Includes information on Action Required Target, Completion Date, Person Responsible, Risk Level and Closeout information / Date. Reports to ARTC, DPIE and other regulatory authorities (i.e. Cwth Department of Agriculture, Water and the Environment, NSW EPA, NSW DPI, Council/s, etc) as determined by ARTC and Trans4m Rail's Environment Manager.</p>	<p>Within 12 hours of incident. All incident reports, investigations and internal notifications managed in Event Tracker.</p>

10.4 Licences and permits

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. The permits and approvals register will be reviewed at least annually to identify any regulatory changes and as soon as practicable should the approved project be modified.

Any use of facilities or establishment works undertaken outside approved 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.

10.5 Auditing

Audits (both internal and external) will be undertaken to assess the effectiveness of environmental controls, compliance with this Plan, CoA and other relevant approvals, licenses and guidelines.

11 Review and improvement

Continuous improvement of this Plan 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 will be designed to:

- ▶ Identify areas of opportunity for improvement of environmental management and performance
- ▶ Determine the cause or causes of non-compliances and deficiencies
- ▶ Develop and implement a plan of corrective and preventative action to address any non-compliances and deficiencies
- ▶ Verify the effectiveness of the corrective and preventative actions
- ▶ Document any changes in procedures resulting from process improvement
- ▶ Make comparisons with objectives and targets.

Tran4M Rail will utilise John Holland Group's Environmental Management System (EMS) for the N2NS. The basis for the John Holland EMS (and also this CEMP) is the concept of Plan-Do-Check-Act (PDCA). The PDCA model provides an iterative process to achieve continuous improvement. Continuous improvement will be undertaken according to John Holland's Monitoring and Review Procedure (JH-MPR-SQE-002)

11.1 Environmental Risk Review

The Environmental Risk Matrix (Appendix C) will be reviewed and updated on a quarterly basis, prior to the commencement of a key construction stage (i.e. prior to occupation, demobilisation, etc) or as considered necessary by the Trans4m Rail Project Director or Environment Manager. The review will consider the following aspects and be updated as deemed necessary:

- ▶ The findings, observations and actions of the weekly Environmental Inspections, independent audits and other assurance activities undertaken on the Project, as detailed in Section 10.3 above.
- ▶ The findings (incl. non compliances) of any of the construction monitoring programs as required under CoA C14.
- ▶ Environmental incidents that have occurred and complaints received on the Project.
- ▶ General environmental performance and compliance on the Project.

Any significant changes to the Environmental Risk Matrix will be communicated to ARTC, the Project ER and the NSW EPA.

11.2 Relevant legislation and guidelines

Legislation, guidelines and standards relevant to this Plan are listed below and addressed as required within the document.

11.2.1 Legislation

Legislation relevant to the site establishment works includes:

- ▶ *Biosecurity Act 2015*
- ▶ *Biodiversity Conservation Act 2016*
- ▶ *Contaminated Land Management Act 1997*
- ▶ *Environmental Planning and Assessment Act 1979 (EP&A Act)*
- ▶ *Environmentally Hazardous Chemicals Act, 1985*
- ▶ *Heritage Act 1977*
- ▶ *National Greenhouse and Energy Report Act 2007*
- ▶ *National Parks and Wildlife Act 1974 (NPW Act)*
- ▶ *Pesticides Act 1999*
- ▶ *Protection of the Environment Operations Act 1997 (POEO Act)*
- ▶ *Work Health and Safety Act 2011*

11.3 Guidelines and Standards

Guidelines and standards relevant to the site establishment works include the following publications:

- ▶ Action for Air 2009 (NSW DEC)
- ▶ Air Quality Monitoring Criteria for Deposited Dust (DEC Guideline)
- ▶ Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales (DEC 2005)
- ▶ Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales (DEC 2007)
- ▶ AS 3580.1.1:2007 Methods for Sampling and Analysis of Ambient Air – Guide to Siting Air Quality Monitoring Equipment.
- ▶ AS 3580.10.1-2003 Methods of Sampling Analysis of Ambient Air
- ▶ Assessing Vibration: A Technical Guideline (DEC 2006)
- ▶ British Standard 7385: Part 2 “Evaluation and measurement of vibration in buildings”
- ▶ German DIN 4150: Part 3 – 1999 Effects of Vibration on Structure (DIN 1999)
- ▶ Interim Construction Noise Guideline (ICNG) (DECC 2009)
- ▶ Infrastructure Sustainability Council of Australia V1.2 Guideline
- ▶ Managing Urban Stormwater: Soils and Construction (4th Edition) Volume 1 (Landcom 2004) (the “Blue Book”)
- ▶ Managing Urban Stormwater: Soils and Construction. Volume 2D: Main Road, DECC (2008)
- ▶ National Environment Protection Council’s (NEPC) – NEPM for Ambient Air Quality Guidelines
- ▶ NSW Government Resource Efficiency Policy 2019, requirement E3 “minimum standards for new electrical appliances and equipment”
- ▶ NSW Government Resource Efficiency Policy 2019, requirement W3 “minimum standards for new water using appliances”
- ▶ NSW Industrial Noise Policy (INP) (EPA 2000)

- ▶ NSW Road Noise Policy (RNP) (DECCW 2011)
- ▶ Policy and Guidelines for Fish Habitat Conservation and Management (2013 update), DPI Fisheries
- ▶ *Why do fish need to cross the road? Fish passage requirements for waterway crossings* (Fairfull and Witheridge, 2003).
- ▶ Transport for NSW's Air Quality Management Guidelines (9TP-SD-107/3.0) (TfNSW 2016)
- ▶ Transport for NSW's Chemical Storage and Spill Response Guidelines (9TP-SD-066) (TfNSW 2015)
- ▶ Inland Rail NSW Construction Noise and Vibration Management Framework.

Appendix A : Trans4m Rail's Environment Policy



The image shows the cover of the Trans4m Rail Environment Policy document. It features a light blue background with a faint, stylized map of Australia. The Trans4m Rail logo is in the top right corner. The word 'Policy' is written in large, bold, teal letters. Below it, 'Environment' is written in a smaller, bold, teal font. The document is signed by Malcolm Tinkler and Joel Barnes, both dated October 2020. The background also contains the text 'A MORE PROSPEROUS AUSTRALIA', 'WORLD-CLASS SUPPLY CHAIN', 'BASED ON A FAST, SAFE, RELIABLE, CONNECTED INLAND RAIL'.

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.

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

Joel Barnes
Joel Barnes
EGM Operations
SEE Group Holdings Pty Ltd
October 2020

Appendix B : Consultation records

From: Andrew McIntyre <Andrew.McIntyre@transport.nsw.gov.au>
Sent: Friday, 13 November 2020 6:33 AM
To: David Carberry <david@carberrymetro.com.au>; Pippa.Donaldson@t4mr.com.au
Cc: Development Western <development.western@rms.nsw.gov.au>; Nic Dalton <Nic.Dalton@transport.nsw.gov.au>
Subject: TfNSW comments - N2NS SEMP

Dear David and Pippa

Thanks for the opportunity to provide comment into the SEMP. TfNSW comments are below:

- The SEMP should refer to the former Roads and Maritime Services as Transport for NSW "TfNSW".
- p29 of 159 - section 4.1 - several reference sources have been omitted.
- Clump Rd CAF at Bellata (p38) – "Access" TfNSW needs to review the proposed design for the Clump Rd intersection ie: right turn acceleration lane would not be required due to safety issues (Seagull) and existing adequate sight distance. TfNSW was not aware 60.29 is required for construction gate? Please confirm stacking distance between rail and road.
- Kanimbla Rd construction access gate appears not to be included in SEMP?
- Private Rd construction access gate just south of Gurley Ck not mentioned in SEMP?
- P 46 of 159. Section 6.1.8 – use of existing pavement can be allowed, provided pavement is fit for purpose and doesn't decrease the minimum lane, shoulder and centre line widths.
- P 50 of 159 - Section 6.3.2 - A pedestrian control plan is required.
- Mitigation Measures - No.35 'Hydrology and Flooding' (page 64) – Please confirm and demonstrate that compounds will not impact on roads without appropriate and effective mitigation measures.
- P144 of 159 ECM item 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." TfNSW requires more detail on the response and action process to address spillages and material dragged onto classified roads. Prevention measures also to be provided. Additional, details are required to demonstrate how dust suppression will be managed, specifically, ensure dust will not reduce visibility on the Newell Highway.
- C.24 – include Variable Message Signage in notification strategies.
- C.24 – please note that access for Over Size Over Mass vehicles needs to be provided at all times.
- Two way traffic flow must be provided during construction works.
- Prior to works commencing on Moree Railway Station platform, a detailed design is required to be provided to TfNSW for review.
- There are multiple references to John Holland and then in other parts Tran4MRail. I assume that reference to John Holland in the SEMP refers mainly to John Holland being part of Tra4MRail and specifically, Tran4MRail relying on dedicated John Holland Environmental Management Systems? Can you please clarify?
- All proposed intersection upgrades and works on the Newell and Gwydir Highways will require the prior approval of TfNSW and a Works Authorisation Deed entered into between ARTC as the proponent of N2NS Inland Rail and TfNSW.

Thanks and regards

Andrew McIntyre
Inland Rail Coordinator
Community and Place
Regional and Outer Metropolitan Division
Transport for NSW
T 02 6861 1453 | F 02 6861 1414 | M 0417 431 982
Level 1 51-55 Currajong Street Parkes NSW 2870

1

From: Daniel Boyce <Daniel.Boyce@mpsc.nsw.gov.au>
Sent: Monday, 9 November 2020 3:37 PM
To: Pippa Donaldson-JHG <Pippa.Donaldson@t4mr.com.au>
Cc: Laura Colley <Laura.Colley@mpsc.nsw.gov.au>
Subject: RE: Review of Draft Narrabri to North Star Site Establishment Management Plan

Hi Pippa,

I have reviewed the Draft Narrabri to North Star Site Establishment Management Plan for Council.

Council have no comments.

Kind Regards

Daniel Boyce | Executive Planner



Tel: (02) 6757 3254
Fax: (02) 6752 3934
Email: Daniel.Boyce@mpsc.nsw.gov.au
Web: www.mpsc.nsw.gov.au

Shop 6 Ground Floor, Max Centre, 30 Heber Street | Moree NSW 2400 | PO BOX 420

Moree Plains Shire Council's mission is to lead the way in
fostering a healthy, positive and well-resourced community.



From: Alex Eddy <aeddy@gwydir.nsw.gov.au>
Sent: Wednesday, 11 November 2020 8:16 AM
To: Pippa Donaldson-JHG <Pippa.Donaldson@t4mr.com.au>; Amy Beutel <abeutel@gwydir.nsw.gov.au>
Cc: Jodie L Grant-JHG <Jodie.Grant@t4mr.com.au>; Sam Blanco <SBlanco@ARTC.com.au>; Melanie Elms <MElms@ARTC.com.au>; David Carberry <david@carberryenviro.com.au>; Adam Playne-JHG <Adam.Playne@t4mr.com.au>
Subject: RE: Review of Draft Site Establishment Management Plan

G'day Pippa,

Council is generally happy with the document, however given that the Croppa Creek CAF site location is yet to be determined by Trans4m it is difficult to provide comprehensive feedback. The SEMP states that ARTC are currently assessing a site location, to be determined. Is there any projection on when this may be done?

Regards,

Alex

From: Pippa Donaldson-JHG <Pippa.Donaldson@t4mr.com.au>
Sent: Tuesday, November 10, 2020 1:25 PM
To: Alex Eddy <aeddy@gwydir.nsw.gov.au>; Amy Beutel <abeutel@gwydir.nsw.gov.au>
Cc: Jodie L Grant-JHG <Jodie.Grant@t4mr.com.au>; Sam Blanco <SBlanco@ARTC.com.au>; Melanie Elms <MElms@ARTC.com.au>; David Carberry <david@carberryenviro.com.au>; Adam Playne-JHG <Adam.Playne@t4mr.com.au>
Subject: RE: Review of Draft Site Establishment Management Plan

Good Morning Alex and Eddie.

Just touching base to follow up on the below to see if you had an opportunity to review and provide comment on the November 26th transmittal of the Site Establishment Management Plan? We had hoped to received any feedback by November the 9th, so wanted to check in to see if you require clarification to assist in your feedback? Alternatively, if you have no comments, happy to be advised.

Please feel free to give me a call if you would like to discuss in person.

Regards,

Pippa Donaldson

Environment Manager

Inland Rail - Narrabri to North Star (N2NS)

Trans4m Rail Joint Venture

M +61 433 022 101 | E pippa.donaldson@t4mr.com.au

108 Siganto Drive Helensvale QLD 4212



Comments from Narrabri Shire Council

6. Site Establishment Management Plan

Observations:

- a) The SEMP only applies to Bellata (CH602,900) and Moree CAFs. Note the operation of a CAF for construction will not commence until the CEMP, relevant CEMP sub-plans and relevant Construction Monitoring Programs required by Condition C9 have been approved by the Planning Secretary.
- b) It is requested that at minimum, each CAF contain:
 - o Stockpiling of various construction materials including rail, sleepers, ballast, culverts, lime, water and structural fills;
 - o Bunded refuelling area;
 - o Fencing as required;
 - o Office area including parking, offices and ablutions;
 - o Mobile plant and equipment;
 - o Concrete batching plants (where required); and
 - o Hazardous material storage.

Stakeholder SEMP Comments & Response				
Transport for NSW		Date - 13/11/2020		
No	Comment	Page No	Addressed	Response
1	The SEMP should refer to the former Roads and Maritime Services as Transport for NSW "TfNSW".	Various	Amended	Amended throughout document.
2	p29 of 159 - section 4.1 - several reference sources have been omitted.	29	Amended	Reference sources included.
3	Clump Rd CAF at Bellata (p38) – "Access" TfNSW needs to review the proposed design for the Clump Rd intersection ie: right turn acceleration lane would not be required due to safety issues (Seagull) and existing adequate sight distance. TfNSW was not aware 60.29 is required for construction gate? Please confirm stacking distance between rail and road.	38	Amended	TfNSW to review and approve the proposed design for the Clump Rd intersection.
4	Kanimbla Rd construction access gate appears not to be included in SEMP?	58	Addressed	Table 9 - The new intersection will comply with all relevant RoadNet, Road Occupation Licence and TfNSW design and / or construction requirements. Prior to access and intersection works commencing, Tran4m Rail will provide the intersection

Stakeholder SEMP Comments & Response				
				design to TfNSW for review and to provide comment.
5	Private Rd construction access gate just south of Gurley Ck not mentioned in SEMP?	68	Addressed	<p>Table 11 - Safe access is provided to the proposed Gurley Ancillary Facility via an upgraded intersection (Newell Hwy / Private Road at CH641100), improvements to the existing Private Road and access provided to the rail corridor at approx. chainage CH641100 (Construction Gate 64.11) directly to the west. Access to the Gurley Ancillary Facility is proposed to be constructed as site establishment works.</p> <p>The new intersection will comply with all relevant RoadNet, Road Occupation Licence and TfNSW design and / or construction requirements. Prior to access and intersection works commencing, Tran4m Rail will provide the intersection design to TfNSW for review and to provide comment.</p> <p>NOTE: Prior approval is required from TfNSW and a Works Authorisation Deed entered into between ARTC (as the proponent of N2NS Inland Rail) and TfNSW.prior to works on the Newell Highway commencing.</p>

Stakeholder SEMP Comments & Response				
6	P 46 of 159. Section 6.7.1.8 – use of existing pavement can be allowed, provided pavement is fit for purpose and doesn't decrease the minimum lane, shoulder and centre line widths.	46	Agreed.	In some cases, where there is adequate width of the existing highway and providing the pavement is (a) fit for purpose and (b) doesn't decrease the minimum lane, shoulder and centre line widths, compliant gate accesses will be able to be established by using existing pavements and water blasting off existing linemarking or blacking out with bituminous emulsion and then reinstalling new linemarking and seals.
7	P 50 of 159 - Section 6.3.2 - A pedestrian control plan is required.	50	Addressed.	<p>Section 7.1.2 - Site mobilisation activities will then be undertaken including the establishment of the nominated ancillary facilities and materials laydown areas, set up the traffic management measures (incl. including safe motorist, pedestrian and cyclist access), induction of site personnel and installation of the site's environmental controls, exclusion zones and signage.</p> <p>Section 8.1 - Traffic Control Plans (including safe motorist, pedestrian and cyclist access)</p>
8	Mitigation Measures - No.35 'Hydrology and Flooding' (page 64) – Please confirm and demonstrate that compounds will not impact on roads without appropriate and effective mitigation measures.	64	Amended.	Locations of construction compounds, site offices, laydown areas including Construction Ancillary Facilities (CAFs) are positioned outside the 1 in 20 AEP (5% AEP) flood zone. Flood mitigation controls will be implemented as per the Flood Emergency Management Plan (FEMP)

Stakeholder SEMP Comments & Response				
				and ESCP, to ensure appropriate drainage from site and no impact to surrounding infrastructure
9	P144 of 159 ECM item 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." TfNSW requires more detail on the response and action process to address spillages and material dragged onto classified roads. Prevention measures also to be provided. Additional, details are required to demonstrate how dust suppression will be managed, specifically, ensure dust will not reduce visibility on the Newell Highway.	ECM	Amended	<p>Section 8.1 -</p> <ul style="list-style-type: none"> -Where practicable, haul roads, ancillary facilities and heavily trafficked areas will be sheeted with a clean rock or gravel material. -Stabilised site accesses (i.e. sealed pavement, rumble grid, etc) will be established at each egress / access location to avoid mud being tracked onto sealed, public roads. -Vehicles, plant and equipment (i.e. tail gates, drawbars, wheels, wheel arches, etc) will be inspected and cleaned down prior to plant entering a public road to ensure no bulk material will be dropped onto the public road. -During and following times of rain, site access will be restricted to avoid mud tracking. -During and following times of rainfall, site accesses and utilised public roads will be inspected to ensure mud is not being tracked onto public roads. In the event that mud is being tracked onto public roads, this will be immediately removed (i.e. street sweeper, brooms, etc).
10	C.24 – include Variable Message Signage in notification strategies.		Amended; Added to Mitigation	Variable Message Signage will be utilised to notify of

Stakeholder SEMP Comments & Response				
			measures; Traffic, Transport and Access/ Construction site traffic, (page 56).	upcoming works and changes
11	C.24 – please note that access for Over Size Over Mass vehicles needs to be provided at all times.		Amended; Added to Mitigation measures; Traffic, Transport and Access/ Construction site traffic, (page 56).	Access for access for Over Size Over Mass vehicles will be provided at all times.
12	Two way traffic flow must be provided during construction works.		Agreed.	Section 7.1.8 - Two way traffic flow will be provided in the first instance except where insufficient width exists to construct either medium term temporary works or permanent works. In these cases, reversible shuttle flow (single lane) may need to be used.
13	Prior to works commencing on Moree Railway Station platform, a detailed design is required to be provided to TfNSW for review.	N/A	Agree.	ARTC action to provide design to TfNSW.
14	There are multiple references to John Holland and then in other parts Tran4MRail. I assume that reference to John Holland in the SEMP refers mainly to John Holland being part of Tra4MRail and specifically, Tran4MRail relying on dedicated John Holland Environmental Management Systems? Can you please clarify?	Various	Addressed.	References to JHG EMS- which TR4m Rail has adopted for Project implementation.
15	All proposed intersection upgrades and works on the Newell and Gwydir Highways will require the prior approval of TfNSW and a Works Authorisation Deed entered into between ARTC as the proponent of N2NS Inland Rail and TfNSW.	Various	Addressed Tables 7 - 11	NOTE: Prior approval is required from TfNSW and a Works Authorisation Deed entered into between ARTC (as the proponent of N2NS Inland Rail) and TfNSW prior to works on the Newell Highway commencing.

Stakeholder SEMP Comments & Response				
Gwydir Shire Council		Date	11/11/2020	
No	Comment	Page No	Addressed	Comment
1	Council is generally happy with the document, however given that the Croppa Creek CAF site location is yet to be determined by Trans4m it is difficult to provide comprehensive feedback. The SEMP states that ARTC are currently assessing a site location, to be determined. Is there any projection on when this may be done?	All	Response provided 13/11/2020	ARTC is currently negotiating with the Land holder, with an agreement anticipated to be secured in the coming weeks.
Moree Plains Shire Council		Date		
No	Comment	Page No	Addressed	Comment
N/A	Emailed that Council has no comments.			
Narrabri Shire Council		Date	5 th February 2021	
No	Comment	Page No	Addressed	Comment
1	The SEMP only applies to Bellata (CH602,900) and Moree CAFs. Note the operation of a CAF for construction will not commence until the CEMP, relevant CEMP sub-plans and relevant Construction Monitoring Programs required by Condition C9 have been approved by the Planning Secretary.			Noted and currently addressed in Section 3.1
2	It is requested that at minimum, each CAF contain: <ul style="list-style-type: none"> • Stockpiling of various construction materials including rail, sleepers, ballast, culverts, lime, • water and structural fills; • Bunded refuelling area; • Fencing as required; • Office area including parking, offices and ablutions; • Mobile plant and equipment; • Concrete batching plants (where required); and • Hazardous material storage. 			Noted and currently addressed in Section 6.3
Project ER				
1	1. TfNSW's comment # 9 - specifically in relation to dust impacts on Newell Hwy are not sufficiently addressed. This is particularly relevant to any lime stabilisation works which are specifically referred to in Section 7.2.1.	62 & 63	Yes	Section 8.1 amended to include mitigation measures to manage dust impacts on the Highway.

Stakeholder SEMP Comments & Response				
2	2. The Nil response from Narrabri Shire Council needs to be more fully discussed, particularly given that the Bellata CAF is located within their LGA. For instance have they been followed up with or requested to provide a nil response, similar to Moree Council etc?	Table 6	Comment open, pending additional request for response.	"Table 6 amended to explain all consultation efforts undertaken.
3	3. 17(b). Site layout diagrams in Tables 7 and 8 are not sufficiently clear to the reader	38 & 45	Yes	Indicative layouts in Tables 7 and 8 have been zoomed in and increased in size to make clearer.
4	4. 17(c). It is not evident from the intro to Appendix C or elsewhere in the SEMP how the requirement of A17 (c) for "a program for ongoing analysis of the key environmental risks arising from the site establishment activities" has been addressed	76 & 88	Yes	Section 11.1 added and Appendix C amended to detail the environmental risk review process on the Project.
5	5. A17(d). Section 8.1 Table 9 provides mitigation measures for site establishment activities but it is unclear how these relate to the mitigation measures in Table 11 of the Risk Assessment in Appendix C. Also, suggest a reference be made to (or inclusion of) Table 27.6 of the EIS in the SEMP somewhere as it is central to demonstrating you have considered the "performance requirements" of 17 (d) and (e)	Appendix C Table 4	Yes	Appendix C introduction amended to explain the relationship between the 2 list of mitigation measures. Table 4 includes the EPO's detailed in Table 27.6 of the EIS.
6	6. A17(e). As per above Table 27.6 of the EIS sets out the environmental performance outcomes of the A1 documents. Suggest integrating this table with Table 10 under section 10.3 of the SEMP to better demonstrate satisfaction of A17(e)	Table 10	Yes	Table 10 updated to include any monitoring requirements detailed in Table 27.6
7	"In addition to the below comments, I note that the MAF approved by Derek in November 2020 known as Minor Ancillary Facility Checklist - Stage 2 / Site 4 (Bulluss Drive, Moree) does not appear to be included within the CAF nearby.	30	Yes	Section 6.2 added and figures and text in Table 8 adjusted to incorporate the Moree MAF approved by the ER in Nov 2020.
8	I note that CoA A5 sets out the evidence required to demonstrate consultation has occurred and issues raised have been dealt with. I note that A5 (c) requires: 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.	Table 6	Comment open, pending additional request for response.	Table 6 amended to explain all consultation efforts undertaken.

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Stakeholder SEMP Comments & Response				
	I'm pretty sure that DPIE will want to see any reluctant consultees dealt with consistent with the above requirement and the evidence of that outlined in the respective plan/s.			
9	Thorough read through of each plan and check that where another section, table, figure or appendix is being referred to in the text that this holds up.	Throughout SEMP	Yes	Document reviewed and references corrected, where required.

Appendix C Risk Assessment

This Site Establishment Environmental Risk Matrix identifies potential environmental impacts that could result from the works and provides indicative management and mitigation measures to avoid or minimise potential impacts.

The indicative management and mitigation measures identified in this matrix 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 SEMP 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 associated with the establishment and operation of the ancillary facilities;
- ▶ Monitor and analyse ongoing risks arising from the establishment and operation of the ancillary facilities;
- ▶ Achieve the environmental performance outcomes on the Project.

The Site Establishment Environmental Risk Matrix and proposed controls for the Works are incorporated into the SEMP, associated early works plans and procedures and relevant environmental strategies as applicable to each construction aspect.

This Environmental Risk Matrix has been developed in accordance with the relevant requirements of:

- ▶ The CSSI 7575 Ministers Conditions of Approval
- ▶ Section D of the RFT
- ▶ The Secretary's Environmental Assessment Requirement's (SEARs) Performance Outcomes
- ▶ ARTC's Environmental Policy and Environment and Sustainability Policy
- ▶ Appendix K (CEMP Outline) of the Narrabri to North Star Project Environmental Impact Statement (EIS)
- ▶ ARTC's Draft Construction Environmental Management Framework (CEMF)
- ▶ AS/NZS ISO 14001:2016 Environmental Management Systems
- ▶ Guideline for the Preparation of Environmental Management Plans (Dept. of Infrastructure Planning and Natural Resources (Department of Infrastructure, Planning and Natural Resources (DIPNR 2004))
- ▶ Australian Rail Track Corporation's (ARTC) Environmental Management System (EMS).

The identification of significant construction activities and associated impacts that could eventuate during construction of the N2NS Project is central to the selection of appropriate environmental safeguards.

The risk management process (undertaken prior to works commencing) involved an assessment of all specific project activities/aspects in or near environmentally sensitive areas and resulted in the development of a list of environmental risks (activities/aspects and impacts) and a corresponding risk mitigation strategy and risk ranking. Each environmental risk was categorised, based on the following:

- ▶ The environmental aspect.
- ▶ Relative scale of the potential impact.
- ▶ Type of potential impact.
- ▶ Likelihood of occurrence.

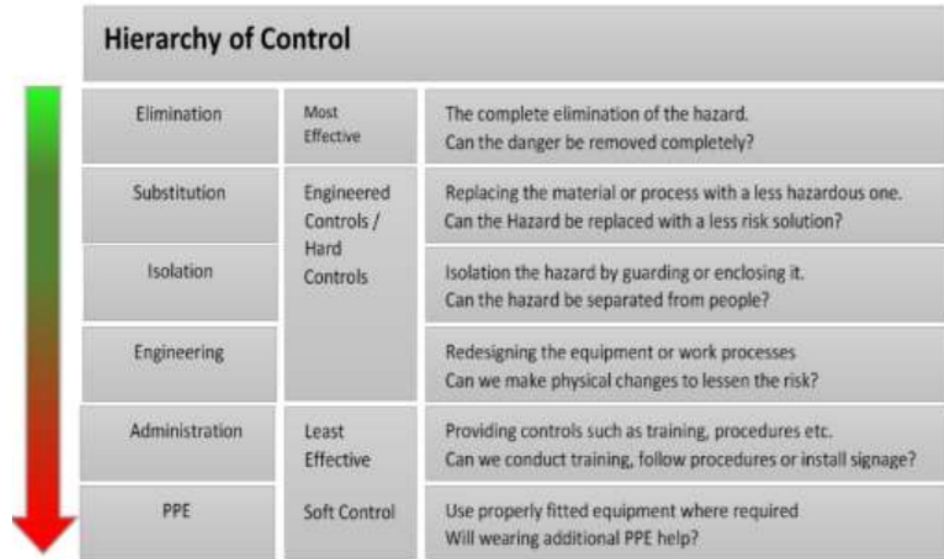
This Environmental Risk Matrix will be reviewed and updated on a quarterly basis, prior to the commencement of a key construction stage (i.e. prior to occupation, demobilisation, etc) or as considered necessary by the Trans4m Rail Project Director or Environment Manager. The review will consider the following:

- ▶ The findings, observations and actions of the weekly Environmental Inspections, independent audits and other assurance activities undertaken on the Project, as detailed in Section 10.3 above.
- ▶ The findings (incl. non compliances) of any of the construction monitoring programs as required under CoA C14.
- ▶ Environmental incidents that have occurred and complaints received on the Project.

- ▶ General environmental performance and compliance on the Project.

NOTE: The mitigation measures detailed in this Environmental Risk Matrix are indicative only and were used to guide the mitigation measures (Table 9) for the site establishment works. In the event of an inconsistency between the mitigation measures listed, the measures detailed in Table 9 will prevail to the extent of the inconsistency, with the exception of where an alternative mitigation measure provides a higher level of environmental management and protection, in this instance this measure will apply.

Risk Rating Matrix



CONSEQUENCE - RISK					
RATING	1	2	3	4	5
Workplace Health and Safety	* First aid injury, and/or * Minor safe working issues	* Medical treatment, and/or * Moderate safe working breach likely to impact on operations	* Serious medical / hospital treatment resulting in need alternate working or resulting in lost time injury, and/or * Significant safe working breach with actual impact on operations	* Serious or permanent Injury, and/or * Significant safe working breach with immediate impact on operations on one or more work sites	* 1 or more fatalities, and/or * Major breach of safe working with immediate and extensive impact on one or more work sites
Budget (\$AUD)	<\$<enter> (<1%) over project budget	\$<enter> to \$<enter> (1% to 5%) over project budget	\$<enter> to \$<enter> (3% to 5%) over project budget	\$<enter> to \$<enter> (5% to 10%) over project budget	>\$ <enter> (>10%) over project budget
Time Schedule (Target Program)	< <enter> days / weeks / months (<1% of program) over the critical path program	<enter> to <enter> days / weeks / months (1% to 2% of program) over the critical path program	<enter> to <enter> days / weeks / months (2% to 3% of program) over the critical path program	<enter> to <enter> days / weeks / months (3% to 5% of program) over the critical path program	><enter> days / weeks / months (>5% program) over the critical path program
Environment & Natural Resources	* Low severity environmental impact(s) or impact on natural resources availability that are promptly reversible and affected area is within the site boundary	* Nuisance or low severity environmental impact(s) or impact on natural resources availability that are promptly reversible and affected area is outside the site boundary	* Moderate severity environmental impact(s) or impact on natural resources availability where the affected area is within the site boundary	Moderate severity environmental impact(s) or impact on natural resources availability where the affected area is outside the site boundary	High severity environmental impact(s) or impact on natural resources availability at local scale significance
Quality	* Rework Costs less than or equal to 20K	* Rework Costs less than or equal to 100K but greater than 20K	* Rework Costs less than or equal to 250K but greater than 100K	* Rework Costs less than or equal to 5% contract value but greater than 250K	Rework Costs greater than 5% of contract value
Reputation / Community / Media	* Public concern restricted to local complaints * Lack of contribution to the community	* Minor, adverse local public or media attention and complaints * Employees warned only * Minor change in community amenity values	* Attention from media and/ or heightened concern by local community * Stakeholder action will disrupt planned project activities * Disciplinary action may be taken * Temporary reduced community access to services or employment	* Significant adverse national media / public / NGO attention * Considerable and prolonged adverse community impact and dissatisfaction publicity expressed * Stakeholder action will delay achievement of major elements of the Project * Permanently reduced community access to services or employment	* Serious public or media outcry with international coverage * Significant adverse community impact & condemnation * Stakeholder action will prevent achievement of the project objectives * Reduced cohesion of community
Governance / Legal / Regulatory	* Very minor technical breach of regulation or policy or code of ethics. No fine / penalty	* Minor legal issues, non-compliances and breaches of regulation, policy or code of ethics * Enforceable Undertaking	* Moderate breach of regulation, policy or code with investigation or report to authority * Moderate legal proceedings initiated * Several Improvement Notices	* Significant breach of regulation, policy or code with fine or other regulatory action. Significant litigation / legal action * Shut down of part of a project due to regulatory breach * Prohibition Notice	* Major breach of regulation, policy or code with fine * Major litigation * Major investigation by regulatory body * Prosecution / Accreditation loss
Management impact	* Impact of event absorbed through normal activity	* Will require some local management attention over several days	* Significant event that can be managed with careful attention, will take some project managers much time for several weeks * Local operation of contingency plan	* Major event that requires the implementation of crisis and contingency plans at a project level, regional area or support function (DRP) * Will require the involvement of senior managers and will take up the time of project managers for several weeks	* Critical event or disaster with significant impact on John Holland that requires considerable senior management time to handle over several months * Full implementation of an John Holland's crisis management plan for days to weeks

PROBABILITY OR CHANCE	QUALITATIVE ASSESSMENT	RECURRENCE TIMEFRAME
≥ 90%	Almost certain to occur during the project / contract life	Less than "Monthly"
51% to 89%	Considered likely to occur during the project / contract life	"Monthly" to "Yearly"
30% to 50%	Considered a possible occurrence during the project / contract life	Between 2 and 5 years
5% to 29%	Considered unlikely to occur during the project / contract life	Between 5 and 20 years
< 5%	Considered a rare occurrence to happen during the project / contract life	Greater than every 20 years

CONSEQUENCE					
RATING	1	2	3	4	5
ALMOST CERTAIN	D	C	B	A	A
LIKELY	D	D	C	B	A
POSSIBLE	E	D	C	C	B
UNLIKELY	E	E	D	C	B
RARE / REMOTE	E	E	D	D	C

Risk Rating Matrix

Residual risk / opp Rating	Suggested action	Timing of status report and management plans	Authority to accept or tolerate risk.
A	Take action to eliminate or implement additional controls to reduce it to acceptable level (ALARP/SFAIRP). "WHS / Environmental risks" the task or activity must not be performed. An alternative solution must be found.	Notify as soon as practicable, normally with 24 hours. Manage and re-evaluate risk / opportunity to allow <u>Business Unit</u> reporting monthly Notify Trans4m Rail's relevant Board Committee and CEO / CFO	JV CEO / COO
B	Implement additional controls to reduce it to ALARP/SFAIRP. "WHS / Environmental risks - The activity or task must not be performed without the explicit concurrence of the Project Director / Project Manager.	Notify as soon as practicable, normally within 72 hours. Manage and re-evaluate risk / opportunity to allow <u>project</u> reporting monthly Notify COO / Business Group EGM / CFO	Project Director or JV Board (where applicable), or Regional EGM
C	Implement additional controls reduce it to ALARP/SFAIRP where it is cost-effective to do so. "Onsite activities" – must not commence without Site Management review	Manage and re-evaluate risk / opportunity to allow <u>project</u> reporting <u>monthly</u>	JV Operational / Construction / Project Manager / Director
D	Implement additional controls to reduce to ALARP / SFAIRP (may be tolerable).	Manage and re-evaluate risk / opportunity to allow <u>project</u> reporting <u>monthly</u>	Trans4m Rail Team Leader
E	Lower priority (likely to be tolerable).	Monitor, manage and carryout activity in accordance with identified controls	Trans4m Rail Supervisor

CONTROL EFFECTIVENESS	GUIDANCE
Satisfactory	Nothing more to be done except review and monitor the current controls. To the extent that is reasonably achievable, controls are well designed for the risk (i.e. follow the hierarchy of controls) and address the root causes. Management considers that the controls are operating effectively and reliably at all times.
Improving	Controls are designed correctly, are in place and operating reasonably effectively. Some minor/ isolated exceptions may exist, however do not represent a systematic weakness in operating effectiveness. Some more work to be done to improve the overall effectiveness.
Partial	While the design of controls may be largely correct in that they treat most of the root causes of the risk, implementation and/or operational effectiveness is only partial
Poor	Significant control gaps. Either controls do not treat root causes or they do not operate at all effectively. Controls, if they exist are just reactive rather than proactive.
Nil	Virtually no credible control. Management has no confidence that any degree of control is being achieved due to poor control design and/or very limited operational effectiveness.

Table 11: Environmental Risk Assessment Matrix for Inland Rail Narrabri to North Star SP1 Site Establishment

ISSUE	LOCATION / 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						
	BELLATA (CH602.900) MOREE (CH664.000) Temporary access roads	Construction traffic impacts, including temporary delays to local and regional traffic	C	<ul style="list-style-type: none"> 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 Site Establishment Activities. 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 site establishment, 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 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 site establishment 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. 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. 	D	CONSTRUCTION TRAFFIC AND ACCESS MANAGEMENT PLAN
	General earthworks and construction	Congestion in surrounding road networks due to diversion of road users during construction	D		E	SEMP
	Import of material/ plant/equipment.	Reduced pedestrian, cyclist and road user access	D		E	AMS
	Construction site compounds	Loss of parking spaces and loading zones in towns near construction areas	C		D	Induction
	Construction vehicle movements and deliveries	Impacts to emergency services through delays in access due to works	D		E	Toolbox Talk – Access and Careful Driving
	Travel to/from site	Impacts on access to private properties	D		E	
		Impacts to rural roads unsuitable for construction	C		C	

ISSUE	LOCATION / CONSTRUCTION ACTIVITY/ ASPECT	POTENTIAL IMPACT	RISK LEVEL PRIOR TO MITIGATION	INDICATIVE MITIGATION MEASURES	RISK LEVEL FOLLOWING MITIGATION	DOCUMENTS/PROCEDURES/TRAINING REQUIRED
				<ul style="list-style-type: none"> 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)						
	BELLATA (CH602.900) MOREE (CH664,000) Clearing and grubbing Earthworks	Impacts associated with the disturbance of contaminated soil or soil salinity/saline soils during construction	D	<ul style="list-style-type: none"> 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. 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: <ul style="list-style-type: none"> 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. Groundwater for discharge to surface water would be tested prior to discharge. Conditions of discharge are likely to include: <ul style="list-style-type: none"> 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.). 	E	SEMP
	Storage of fuels, chemicals and other dangerous goods Stockpile Management	Disturbance of soils and subsequent loss or degradation of soil quality during earth works at construction compound sites	C		D	AMS
	Maintenance of plant and equipment, including servicing and refuelling	Disturbance of landforms during earthworks reducing the stability of landforms	D		E	PESCP
	Sediment basin management Drainage works	Increased erosion and sedimentation due to excavation activities and vehicle movement	B		C	Basin management procedure
	Water use/extraction Concrete works	Contamination of soils/groundwater due to spills and leaks during construction	C		D	Bluebook Vol 2D training
	Temporary access road construction/ removal from waterway areas.	Reduced water quality (increased suspended solids and turbidity) due to earthworks and erosion and sedimentation near watercourses.	B		C	Practical ESC training
	Waterway crossings Spill Management	Impacts on water quality from contamination from spills and leaks during construction	C		D	Water, Erosion and Sediment ECM (T4MR-FRM-ENV-001-11) Clearing Management Procedure (T4MR-MPR-ENV-004)
	Landscaping	Impacts on groundwater quality and quantity during drawdown/extraction	D		E	Dust and Air Quality ECM (T4MR-FRM-ENV-001-05) Water Discharge Procedure (T4MR-MPR-ENV-003) Waste Management Procedure (T4MR-MPR-ENV-007) and
					Induction	
					Toolbox Talk - ESC	

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ISSUE	LOCATION / CONSTRUCTION ACTIVITY/ ASPECT	POTENTIAL IMPACT	RISK LEVEL PRIOR TO MITIGATION	INDICATIVE MITIGATION MEASURES	RISK LEVEL FOLLOWING MITIGATION	DOCUMENTS/PROCEDURES/TRAINING REQUIRED
				<ul style="list-style-type: none"> ✓ Wastewater 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						
	BELLATA (CH602.900) MOREE (CH664,000)	Disturbance of existing areas of contamination	D	<ul style="list-style-type: none"> ▶ No site establishment works are planned on sites with known contamination issues ▶ Unexpected discovery of contaminated land procedure would be included in Site Establishment AMS ▶ 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. ▶ 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: <ul style="list-style-type: none"> ✓ 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: <ul style="list-style-type: none"> ✓ 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). 	E	SEMP
	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	Impacts on soil & water quality from contamination from spills and leaks during construction	C		D	AMS ESCP (T4MR-MPR-SQE-011); Hazardous Chemicals ECP (T4MR-FRM-ENV-001-07) Incident and Event management (T4MR-MPR-SQE-010) Induction
Biodiversity						
	BELLATA (CH602.900) MOREE (CH664,000)	Clearing of native vegetation resulting in loss of fauna habitat, habitat fragmentation and loss of connectivity	C	<ul style="list-style-type: none"> ▶ 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 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)). 	D	SEMP AMS-Clearing and Grubbing Sensitive Area Plans
	Clearing of native vegetation Management of trees to be retained Pre-clearance surveys	Direct impacts on threatened species and endangered populations and communities (terrestrial) and clearing	D		E	JSEA

ISSUE	LOCATION / CONSTRUCTION ACTIVITY/ ASPECT	POTENTIAL IMPACT	RISK LEVEL PRIOR TO MITIGATION	INDICATIVE MITIGATION MEASURES	RISK LEVEL FOLLOWING MITIGATION	DOCUMENTS/PROCEDURES/TRAINING REQUIRED
	Tree Felling	Direct impacts on threatened species and endangered populations and communities (aquatic) and clearing	D	<ul style="list-style-type: none"> ▶ 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: <ul style="list-style-type: none"> ✓ 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: <ul style="list-style-type: none"> ✓ 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. ✓ 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: <ul style="list-style-type: none"> ✓ 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: <ul style="list-style-type: none"> ▶ 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. ▶ 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. 	E	<p>Water, Erosion and Sediment ECM (T4MR-FRM-ENV-001-11)</p> <p>Hazardous Chemicals Procedure (T4MR-MPR-SQE-011);</p> <p>Hazardous Chemicals ECP (T4MR-FRM-ENV-001-07)</p> <p>Incident and Event management (T4MR-MPR-SQE-010)</p> <p>Unexpected Heritage Items (Heritage Procedure) Heritage ECM (T4MR-FRM-ENV-001-08)</p> <p>Clearing Management Procedure (T4MR-MPR-ENV-004)</p> <p>Dust and Air Quality ECM (T4MR-FRM-ENV-001-05)</p> <p>Water Discharge Procedure (T4MR-MPR-ENV-003)</p> <p>Waste Management Procedure (T4MR-MPR-ENV-007) and</p> <p>Waste and Resource ECM (T4MR-FRM-ENV-001-10)</p> <p>Environmental Induction</p>
	Dewatering of pools	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	C		D	
	Biosecurity management	Impacts to groundwater dependant ecosystems as a result of groundwater drawdown	D		E	
	Stockpile/haul road construction near vegetation	Indirect impacts due to increased dust, sedimentation and erosion, noise and light.	C		D	
	Works near/in creeks and temporary crossings	Disturbance to aquatic habitats and reduced water quality as a result of fugitive sediments and altered hydrology	C		D	
	General earthworks near vegetation	Alterations to surface water flow regimes and interruptions to fish passage	D		E	
	Vehicular movements	Native fauna mortality from vehicle strikes	C		D	
	Open excavation works	Domestic fauna mortality from vehicle strikes	D		E	
	Use of chemicals					
	Noise impacts					
	Bushfires					

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				<ul style="list-style-type: none"> ▶ 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. <ul style="list-style-type: none"> ✓ 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: <ul style="list-style-type: none"> ✓ Spraying with herbicides. ✓ Physical removal e.g. chipping. ✓ 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						
	BELLATA (CH602.900) MOREE (CH664.000) Site establishment	Noise impacts on local residents and sensitive receivers from construction activities including out of hours works	B	<ul style="list-style-type: none"> ▶ The SEMP would detail how potential noise and vibration impacts would be mitigated and managed during site establishment. 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: <ul style="list-style-type: none"> ✓ 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. ▶ 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. 	C	CONSTRUCTION NOISE AND VIBRATION MANAGEMENT SUB-PLAN
	Clearing and grubbing Demolition Earthworks and drainage	Noise impacts on local residents and sensitive receivers from construction traffic	C		D	AMS Noise and Vibration ECP (T4MR-FRM-ENV-001-09) Complaints procedure
	Paving Saw cutting OOHW	Damage to structures including heritage structures from vibration caused by construction activities	D		E	Induction Toolbox Talk – Interaction with the Community Site Induction

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				<ul style="list-style-type: none"> ▶ 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. ▶ 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						
	BELLATA (CH602.900) MOREE (CH664.000) 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	<p>Generation of dust during construction (from exposed soil/stockpiles, blasting, excavation and vehicles movements).</p> <p>Emissions from vehicles or plant during construction</p> <p>Odours/emissions from disturbance of contaminated soils</p>	<p>B</p> <p>C</p> <p>D</p>	<ul style="list-style-type: none"> ▶ The SEMP would detail how potential impacts on air quality would be mitigated and managed during site establishment. ▶ 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. 	<p>C</p> <p>D</p> <p>E</p>	<p>CONSTRUCTION AIR QUALITY MANAGEMENT SUB-PLAN</p> <p>AMS</p> <p>CONSTRUCTION SOIL AND WATER QUALITY MANAGEMENT SUB-PLAN</p> <p>ESCP</p> <p>Water, Erosion and Sediment ECM (T4MR-FRM-ENV-001-11)</p> <p>Hazardous Chemicals Procedure (T4MR-MPR-SQE-011);</p> <p>Hazardous Chemicals ECP (T4MR-FRM-ENV-001-07)</p> <p>Dust and Air Quality ECM (T4MR-FRM-ENV-001-05)</p>

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				<ul style="list-style-type: none"> 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 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 		Water Discharge Procedure (T4MR-MPR-ENV-003) Waste Management Procedure (T4MR-MPR-ENV-007) and Waste and Resource ECM (T4MR-FRM-ENV-001-10) Complaints procedure Induction Toolbox Talk – Interaction with the Community Toolbox Talk – Access and Careful Driving
HYDROLOGY & FLOODING						
	BELLATA (CH602.900) MOREE (CH664,000)	Impact of flooding on unprotected areas during construction resulting in wash-outs or erosion	C	<ul style="list-style-type: none"> 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. 	D	SEMP
	<ul style="list-style-type: none"> Waterway crossings Transverse drainage General earthworks and construction 	Temporary impact to the behaviour of local surface water systems during construction	C	<ul style="list-style-type: none"> 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. 	D	AMS
		Changes to flow patterns and altered hydrology due to construction in water courses	D	<ul style="list-style-type: none"> Water used during construction would be sourced from various sources to minimise hydrologic impacts at a single location. 	E	Sensitive Area Plans
		Blockages of flow paths affecting low flows through construction within watercourses and through erosion and sedimentation control structures	D	<ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> Installation, if not already present, of a water level monitor at each agreed and approved extraction location prior to any extraction being undertaken. 	E	Establish designs for temporary waterway crossings. Induction
		Sedimentation and changes to geomorphology (aggradation in bed channels) in watercourses	D	<ul style="list-style-type: none"> Prior to each load of extracted water, the groundwater level would be measured and recorded, along with the time and date 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. 	E	Waste and Resource ECM (T4MR-FRM-ENV-001-10) Water, Erosion and Sediment ECM (T4MR-FRM-ENV-001-11) Toolbox Talk - ESC
ABORIGINAL HERITAGE						
	BELLATA (CH602.900) MOREE (CH664,000)	Disturbance of known or unidentified items or places of Aboriginal heritage significance	D	<ul style="list-style-type: none"> The SEMP would detail how potential impacts on heritage would be mitigated and managed during site establishment. The plan would be prepared in consultation with relevant agencies and Aboriginal groups for management of Aboriginal heritage, listed non-Aboriginal heritage items and archaeological areas, and any previously unidentified items/areas of potential heritage significance identified during construction. It would incorporate the results of archaeological subsurface testing and an unexpected finds procedure. 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: <ul style="list-style-type: none"> 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. 	E	SEMP AMS Sensitive Area Plans Unexpected Heritage Items (Heritage Procedure) Heritage ECM (T4MR-FRM-ENV-001-08) Toolbox Talk - Heritage Induction

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	<ul style="list-style-type: none"> Construction of site compounds and stockpile areas Temporary access roads 			<ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> 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. 		
NON-ABORIGINAL HERITAGE						
	BELLATA (CH602.900) MOREE (CH664,000)	Impacts on listed heritage items or items with heritage values due to demolition, altered historical arrangements and access, visual amenity, landscape and vistas, curtilage, subsidence and architectural noise treatment	D	<ul style="list-style-type: none"> To minimise the potential for accidental impacts, the boundary of Moree, Edgeroi, Bellata, and Gurley stations, Edgeroi Woolshed, and the 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. 	E	SEMP
	<ul style="list-style-type: none"> Early works including non-substantial construction activities e.g. services relocations Planned salvage of Aboriginal heritage items 	Damage to heritage items from vibration during construction or operation	D		E	AMS
	<ul style="list-style-type: none"> Clearing of vegetation Initial removal of topsoil Construction of site compounds and stockpile areas Temporary access roads 	Disturbance of known or unidentified places of non-Aboriginal heritage significance	D		E	Sensitive Area Plans Unexpected Heritage Items (Heritage Procedure) Heritage ECM (T4MR-FRM-ENV-001-08) Toolbox Talk - Heritage Induction
VISUAL AMENITY						
	BELLATA (CH602.900) MOREE (CH664,000)	Impacts to nearby residents and business owners due to the presence of construction compounds and activities	B	<ul style="list-style-type: none"> Temporary and any permanent lighting would designed and sited to comply with: <ul style="list-style-type: none"> 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 when required. On completion of construction, all work sites and other land occupied temporarily would be rehabilitated in accordance with the rehabilitation plan. 	C	SEMP
	<ul style="list-style-type: none"> General earthworks and construction Stockpiling Open excavation works 	Light impacts from out-of-hours work during construction	C		D	Site Compound Layout AMS
	<ul style="list-style-type: none"> Clearing of vegetation Construction site Compounds Rehabilitation of disturbed land Evening / night works 	Adverse impacts on landscape character during construction, particularly in greenfield areas	D		E	Sensitive Area Plans Induction
PROTECTED AND SENSITIVE LANDS						

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	▶ Early works including non-substantial construction activities e.g. services relocations	Direct and indirect impacts on protected areas managed by OEH and/or DPI Fisheries under the National Parks and Wildlife Act 1974	D	REFER BIODIVERSITY	E	BIODIVERSITY Management sub-Plan
	▶ General earthworks, structures and construction	Direct and indirect impacts on Key Fish Habitat as mapped and defined in accordance with the Fisheries Management Act 1994.	D		E	
	▶ Stockpiling	Direct and indirect impacts on waterfront land as defined in the Water Management Act 2000.	D		E	
	▶ Clearing of vegetation		D		E	
	▶ Construction site ▶ Compounds ▶ Rehabilitation of disturbed land	Direct and indirect impacts on land or waters identified as Critical Habitat under the Threatened Species Conservation Act 1995, FM Act or EPBC Act	D		E	
		Direct and indirect impacts on biobank sites, private conservation lands and other lands identified as offsets of relevance	D	E		
SOCIO ECONOMIC, LAND USE AND PROPERTY						
	▶ Early works including non-substantial construction activities e.g. services relocations	Temporary impacts on land use during construction including impacts to local businesses. Impacts include reduced access, reduced amenity, loss of privacy.	B	<ul style="list-style-type: none"> ▶ 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 ▶ Relevant stakeholders would be notified regarding service disruptions in accordance with the communication management plan. ▶ Complaints would be managed according to the following procedure: <ul style="list-style-type: none"> ✓ 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: 	C	SEMP Stakeholder Engagement Strategy Communication Management Sub Plan Rehabilitation Plan AMS ESCP Sensitive Area Plans
	▶ General earthworks, structures and construction	Positive impacts due to job creation.	Positive		Positive	
	▶ Stockpiling	Impacts on services and utilities during construction resulting in a loss of services.	C		D	
	▶ Clearing of vegetation	Impacts on the use and functionality of community facilities	C		D	
	▶ Construction site	Impacts on agricultural land use from construction activities including impacts from reduced access, noise and air pollution.	C		D	
	▶ Compounds		C		D	
	▶ Rehabilitation of disturbed land	Impacts on land use as a result of property acquisition.	D		E	
	▶ Evening / night works	Increased demand for accommodation driving up prices for local residents and potentially causing a shortage of emergency accommodation.	B		C	
		Increased trade for food and accommodation during construction	Positive		Positive	

ISSUE	LOCATION / CONSTRUCTION ACTIVITY/ ASPECT	POTENTIAL IMPACT	RISK LEVEL PRIOR TO MITIGATION	INDICATIVE MITIGATION MEASURES	RISK LEVEL FOLLOWING MITIGATION	DOCUMENTS/PROCEDURES/TRAINING REQUIRED
				<ul style="list-style-type: none"> ✓ 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 ✓ 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	C	<ul style="list-style-type: none"> ▶ 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 	D	ISCA Score Rating Tool
		Increased demand on local and regional resources during construction.	C	<ul style="list-style-type: none"> ▶ 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. 	D	
SPOIL AND WASTE						
	<ul style="list-style-type: none"> ▶ General earthworks, structures and construction ▶ Vegetation clearing ▶ Open excavation works ▶ Spoil handling ▶ Stockpiling ▶ Material haulage ▶ Handling of chemicals, waste and hazardous goods 	Inappropriate management of waste generated during construction resulting in excessive waste being directed to landfill.	C	<ul style="list-style-type: none"> ▶ 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: <ul style="list-style-type: none"> ✓ 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. ▶ All waste documentation would be collated and maintained on file in accordance with these guidelines. ▶ Waste material would not 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: <ul style="list-style-type: none"> ✓ 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) 	D	SEMP AMS Waste Management Procedure (T4MR-MPR-ENV-007) and Waste and Resource ECM (T4MR-FRM-ENV-001-10)
HEALTH AND SAFETY						
		Impacts from transport, storage and use of hazardous substances and dangerous goods.	C	<ul style="list-style-type: none"> ▶ 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. 	D	Emergency response sub-plan SWMS
		Reduced safety for road users and pedestrians during construction particularly in the vicinity of houses, businesses and townships.	C	<ul style="list-style-type: none"> ▶ 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. 	D	
		Adverse health from noise and air pollution during construction.	C	<ul style="list-style-type: none"> ▶ Hazards and risks associated with construction activities would be identified prior to construction. 	D	

ISSUE	LOCATION / CONSTRUCTION ACTIVITY/ ASPECT	POTENTIAL IMPACT	RISK LEVEL PRIOR TO MITIGATION	INDICATIVE MITIGATION MEASURES	RISK LEVEL FOLLOWING MITIGATION	DOCUMENTS/PROCEDURES/TRAINING REQUIRED
		Potential for proposal to exacerbate bushfires (storage of dangerous goods, construction site issues such as smoking or hot works).	C	<ul style="list-style-type: none"> ▶ 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 	D	
		Potential for environmental damage resulting from a bushfire passing through the site (e.g. explosion of fuel storages/tanks, vehicles and machinery).	D	<ul style="list-style-type: none"> ▶ 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: <ul style="list-style-type: none"> ✓ 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. 	E	

Appendix D : Minor Ancillary Facility Checklist Template

Minor AF Checklist INSERT SITE NAME

Minor ancillary facility checklist

1. Criteria for minor ancillary facilities

Chapter 6 of the Site Establishment Management Plan (SEMP) outlines the procedure for the approval of ancillary facilities.

As outlined in the procedure, this minor ancillary facility checklist is to be used for minor construction related ancillary facilities including lunch sheds, office sheds, material lay down sites, stockpile areas, areas used to assemble infrastructure, portable toilet facilities or other ancillary facilities determined by the ER to have minor environmental impact. The criteria for minor ancillary facilities are defined in CoA A21 and are replicated in this checklist.

These facilities will be located in accordance with the criteria listed in Table 1 and submitted to the ARTC Environment Manager for notification prior to installation.

Table 1 Criteria for minor ancillary facilities

Site Name	INSERT	
Portion	A	
Chainage	CH 67.450	

Criteria	Compliant (Y) Yes (N) No	Justification
Located within the construction boundary as defined by the approval (CoA A21(a)).		
Compliance with the Interim Construction Noise Guideline (CoA A21(b)(i))		
At least 50m from watercourses and outside the 5% AEP flood zone (CoA A21(b)(ii))		
Not within areas identified as threatened communities or species habitats (CoA A21(b)(iii))		
No significant impacts to utilities, primarily gas and electricity		
Not on or near sites with known Aboriginal or non-Aboriginal heritage (CoA A21(b)(iii))		
Safe access to the road network and rail corridor and low impacts on traffic		

Inland Rail – Narrabri to North Star SP1
Minor ancillary facility checklist
1

Minor AF Checklist INSERT SITE NAME

Criteria	Compliant (Y) Yes (N) No	Justification
and access (CoA A21(b)(i))		
Relatively flat land		
Low environmental impact with respect to waste management and flooding (CoA A21(b)(ii))		
No impacts on biodiversity, soil and water, and heritage items beyond those already approved under SSI 7474 approval (CoA A21(b)(iii))		
Boundary screening around all <u>facilities</u> 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 (COA A22)		

A locational map including site layout and environmental constraints is attached in Appendix A.

2. Mitigation measures

If the above criteria is not satisfied, add addition mitigation measures to the below table.

Table 2 Site specific mitigation measures

	Measure/Requirement	Responsibility	Timing/frequency	Reference
INSERT TOPIC				
1)				
2)				

Minor AF Checklist INSERT SITE NAME

3. Certification

This minor ancillary facility checklist provides a true and fair review of the proposed activity for the Inland Rail N2NS upgrade project.

Signed _____

Name _____

Position: Trans4m Rail JV Environmental Manager Date _____

Signed _____

Name _____

Position: Environmental Representative Date _____

Appendix A

Locational map including site layout and environmental constraints

Appendix E : Environmental Control Maps (ECM's)

**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 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 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. <i>Environmental Protection & Biodiversity Conservation Act 1999</i>	1. <i>Protection of the Environment Operations Act 1997</i> 2. <i>Protection of the Environment Operations (Clean Air) Regulation 2010</i> 3. <i>Road Transport (Vehicle Registration) Regulation 2017</i> 4. <i>Heavy Vehicle (Adoption of National Law) Act 2013</i> 5. <i>Heavy Vehicle National Law (NSW),</i>		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)
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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
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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: <ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> • 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.	<p>Construction activities will be managed to minimise the generation of air emissions, if practicable.</p> <p>Measure may include:</p> <ul style="list-style-type: none"> • 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

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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:				
<ul style="list-style-type: none"> • Prevent adverse environmental impacts from hazardous substances and dangerous goods. 				
3.0 Performance Criteria				
3.1 General				
<ol style="list-style-type: none"> 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
<ol style="list-style-type: none"> 1. <i>Industrial Chemicals Act 2019 (Commonwealth)</i> 2. <i>Industrial Chemicals (General) Rules 2019 (Commonwealth)</i> 3. <i>Fuel Quality Standards Act 2000 (Commonwealth)</i> 	<ol style="list-style-type: none"> 1. <i>Environmental Planning and Assessment Act 1979 (EP&A Act)</i> 2. <i>Environmentally Hazardous Chemicals Act, 1985</i> 3. <i>Protection of the Environment Operations Act 1997 (POEO Act)</i> 4. <i>Work Health and Safety Act 2011</i> 5. <i>Work Health and Safety Regulation 2017</i> 6. <i>Pesticides Act 1999</i> 7. <i>Contaminated Land Management Act 1997</i> 		<ol style="list-style-type: none"> 1. Transport for NSW's Chemical Storage and Spill Response Guidelines (9TP-SD-066) (TfNSW 2015) 	<ol style="list-style-type: none"> 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

				<p>Procedure)</p> <ol style="list-style-type: none"> 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)
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4.2 Definitions & Abbreviations

<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • 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
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5.0 Hazardous Substances & Dangerous Goods Management			
5.1 Actions			
No.	Inductions and Training	Staff Responsible	When
1.	<p>Site inductions will include the following specific components for hazardous chemicals:</p> <ul style="list-style-type: none"> ▶ 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: <ul style="list-style-type: none"> • 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 – <i>The storage of flammable and combustible liquids</i> .	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	<ul style="list-style-type: none"> • Upgrade facility • Clean-up, rectify facility • Notify and train personnel
Inappropriate transport/handling	<ul style="list-style-type: none"> • Notify / train staff through toolbox meetings on the appropriate handling and transport techniques / methods
Inadequate clean-up materials	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Identify appropriate disposal facilities/service providers. • Notify / train staff.
Inaccurate records	<ul style="list-style-type: none"> • 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
<ol style="list-style-type: none"> 1. <i>Environment Protection and Biodiversity Conservation Act, 1999</i> 2. <i>Aboriginal and Torres Strait Islander Heritage Protection Act 1984</i> 	<ol style="list-style-type: none"> 1. <i>Heritage Act, 1977</i> 2. <i>Environmental Planning and Assessment Act, 1979</i> 3. <i>National Parks and Wildlife Act 1974</i> 4. <i>National Parks and Wildlife Amendment (Aboriginal Objects and Aboriginal Places) Regulation, 2010</i> 		<ol style="list-style-type: none"> 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) 	<ol style="list-style-type: none"> 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

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

<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • TRA – Task Risk Assessment • SEMP – Site Establishment Management Plan • CEMP – Environmental Management Plan • ECM – Environmental Control Plan • EPA – Environmental Protection Authority
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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: <ul style="list-style-type: none"> • Heritage, (Aboriginal and Non- Aboriginal) values in the Project area, and the importance of protecting and preserving these values; • Identification of exclusion 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.	<ul style="list-style-type: none"> • NSW: <ul style="list-style-type: none"> ○ 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.	<p>Should any unexpected finds of potential significance to Aboriginal cultural heritage (e.g. places or objects) be discovered during the Project;</p> <ul style="list-style-type: none"> • 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; <ul style="list-style-type: none"> • 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.	<p>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)</p> <ul style="list-style-type: none"> ▶ 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	<ul style="list-style-type: none"> Adhere to the unanticipated discovery protocol in this ECM.
Unanticipated heritage discovery (archaeological or other)	<ul style="list-style-type: none"> Adhere to the unanticipated discovery protocol in this ECM.
Incident or event relating to the management of Aboriginal, indigenous or non-indigenous heritage	<ul style="list-style-type: none"> 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 works⁵	E7	8:00am to 6:00pm (+ respite ²)	8:00am to 1:00pm (+ respite ²)	No work ¹
Permitted hours CoA E2 period⁴	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
<ol style="list-style-type: none"> 1. <i>Environmental Protection & Biodiversity Conservation Act 1999</i> 	<ol style="list-style-type: none"> 1. <i>Environmental Planning and Assessment Act 1979</i> 2. <i>Protection of the Environment Operations Act 1997 (POEO Act)</i> 		<ol style="list-style-type: none"> 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 	<ol style="list-style-type: none"> 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

			<ol style="list-style-type: none"> 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. 	<p>Framework (0-9000-ENV-00-RP0001) (ARTC 2018)</p> <ol style="list-style-type: none"> 7. RMS QA Specification G36 – Environmental Protection (Management System)
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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: <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> • 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 against performance predicted in Condition 1A	PER	Project Planning
2.	Vibration and noise monitoring may be required in response to complaints. <ul style="list-style-type: none"> ▶ 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.	<p>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</p>	PM / PER	Following incident
7.	<p>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)</p>	PER	Monthly

8.0 Suggested Corrective Actions

Problem	Suggested Corrective Action
Community concern received relating to noise and/or vibration	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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

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 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
<ol style="list-style-type: none"> Hazardous Waste (Regulation of Exports and Imports) Act 1989 National Environment Protection (Used Packaging Materials) Measure 2011 (Commonwealth) 	<ol style="list-style-type: none"> Protection of the Environment Operations Act 1997 Protection of the Environment Operations (Waste) Regulation 2014 Waste Classification Guidelines (EPA, 2014). Waste Avoidance and Resource Recovery Act 2001 Work Health and Safety Regulation 2017, 		<ol style="list-style-type: none"> Construction and Demolition Waste: A Management Toolkit Environmental Guidelines: Solid Waste Landfills, Second Edition 2016 Tracking and Transporting Hazardous Waste NSW Asbestos Waste Strategy 2019-21 Waste Avoidance and Resource Recovery Strategy WasteLocate: Asbestos WasteLocate: Tyres 	<ol style="list-style-type: none"> <i>Environment Protection and Biodiversity Conservation Act 1999, Conditions of Approval (EPBC referral reference 2016/7729);</i> Critical State Significant Infrastructure Conditions of Approval (Application No. SSI 7474)and Res; Revised Environmental Management Measure (REMMS); and Secretary’s Environmental Assessment Requirements Environmental Protection Outcomes, (SEARs EPOs). T4MR Global Mandatory Requirements (GMR #11)
4.2 Definitions & Abbreviations				
<ul style="list-style-type: none"> 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) 		<ul style="list-style-type: none"> 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 		

<ul style="list-style-type: none"> • ARTC - Australian Rail Track Corporation • EC – Environment Coordinator • CM- Commercial Manager • WRA – Workplace Risk Assessment 	
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5.0 Waste and Resource Management

5.1 Actions

No.	Pre Construction	Staff Responsible	When
1.	<p>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</p> <p>i. low environmental impact with respect to waste management and flooding,</p>	EM/ Engineers	Pre construction
No.	Inductions and Training	Staff Responsible	When
1.	<p>Site inductions will include the following specific components for waste management:</p> <ul style="list-style-type: none"> • 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.	<p>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.</p>	EM/EC Project Safety Advisor/Manager, First Aiders	Project Delivery
3.	<p>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</p>	EM/ CM	Workplace Planning
No.	Waste Avoidance and Reduction		When
1.	<p>GMR 11.1 – A plan, describing methods to minimise waste and maximise efficient use of resources must be implemented and monitored.</p>	EM, Engineers	Workplace Planning
2.	<p>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.</p>	All personnel	Project Delivery
3.	<p>GMR 11.7 – Material for re-use, recycling or disposal must be segregated and located in areas that are clearly defined and well signed.</p>	All personnel	Project Delivery
4.	<p>Waste minimisation measures will be included in tendering, subcontracting and procurement processes wherever practicable.</p>	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.	<p>CSSI Conditions of Approval E87- Waste generated during construction and operation is to be dealt with in accordance with the following priorities:</p> <p>(a) waste generation is to be avoided and where avoidance is not reasonably practicable, waste generation is to be reduced;</p> <p>(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</p> <p>(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.</p>	All personnel	Project Delivery
7.	<p>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:</p> <ul style="list-style-type: none"> • 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.	<p>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.</p>	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: <ul style="list-style-type: none"> • 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.	<p>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:</p> <ul style="list-style-type: none"> • 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. <p>Refer: T4MRMPR-ENV-002 Resource Use Reporting</p>	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.	<p>Listed/Controlled/Regulated waste which will require segregation typically include, but are not limited to:</p> <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> Inspect facilities for adequacy Notify and train personnel
No/inadequate collection	<ul style="list-style-type: none"> Arrange for collection by approved/licensed waste contractor Segregate and reuse or recycle wastes wherever practicable
Reuse or recycling opportunity not recognised	<ul style="list-style-type: none"> Train/re-train personnel Arrange for recycling collection by approved/licensed waste contractor
Unlicensed operator	<ul style="list-style-type: none"> Confirm operator license/s are appropriate for the required service.

Incorrect disposal	<ul style="list-style-type: none"> • Confirm suitability of waste removal contractor. • Confirm/inspect disposal facilities for suitability. • Notify/train personnel.
Contamination of the Site	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Update records • Improve reporting system • Train personnel

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 is to be read in conjunction with the Construction Environment Management Plan, (7632-T4MR-PL-PES-001)

Distribution

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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
<p>1. <i>Environmental Protection & Biodiversity Conservation Act 1999</i></p>	<p>1. <i>Protection of the Environment Operations Act 1997</i> 2. <i>Protection of the Environment Operations (General) Regulation 2009</i> 3. <i>Water Act 1912</i> 4. <i>Water NSW Act 2014</i> 5. <i>Water NSW Regulation 2020</i> 6. <i>Water Management Act 2000</i> 7. <i>Environmental Planning and Assessment Act (1979);</i> 8. <i>Biodiversity Conservation Act (2016);</i> 9. <i>Fisheries Management Act (1994);</i></p>	<p>1. <i>Local Government Act 1993</i></p>	<p>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</p>	<p>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. Construction 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)</p>

4.2 Definitions & Abbreviations			
<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> • 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.	<p>Site inductions will include the following specific components for surface water and erosion & sediment control management:</p> <ul style="list-style-type: none"> • Awareness of General Environmental Duty and Duty 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 banded. (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 banded 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 chemicals 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.	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Repair/reinstate controls. Review maintenance, staff responsible and resources.
Spills or leaks of chemicals or hydrocarbons	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Repair or replace controls

	<ul style="list-style-type: none"> • Clean up or rehabilitate any impacts • Evaluate failure, investigate alternative controls, site, soils and required water quality levels.
pH levels outside WQO	<ul style="list-style-type: none"> • pH under WQO, need to increase the pH by adding a base such as agricultural lime. <ul style="list-style-type: none"> ○ *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. <ul style="list-style-type: none"> ○ 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 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	<ul style="list-style-type: none"> • 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 F : Environment Incident Severity Classification Table – (T4MR-APP-SQE-010-03)

Environment Incident Severity Classification

Classify according to the most severe outcome

Environment Impact Type		Report Only	Class 3	Class 2	Class 1
		Pollution or degradation which is not related to John Holland operations	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.	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.	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: <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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. <ul style="list-style-type: none"> 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

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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	<p>Failure or lack of erosion and sediment controls resulting in one or more of the following:</p> <ul style="list-style-type: none"> • 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). 	<p>Failure or lack of erosion and sediment controls resulting in one or more of the following:</p> <ul style="list-style-type: none"> • 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). 	<p>Failure or lack of erosion and sediment controls resulting in one or more of the following:</p> <ul style="list-style-type: none"> • 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.	<p>Minor exposure of acid sulphate soils:</p> <ul style="list-style-type: none"> • 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 	<p>Exposure, lack of containment or poor management of acid sulphate soils:</p> <ul style="list-style-type: none"> • 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, 	<p>Mismanagement of acid sulphate soils results in high level or catastrophic downstream impacts:</p> <ul style="list-style-type: none"> • Major ecological damage e.g. significant fish kill incident • Demonstrated long term changes in aquatic habitat • Significant damage to infrastructure

Environment Environment Incident Severity Classification

			<ul style="list-style-type: none"> Localised soil degradation 	<p>minor skin irritation Disruption of public recreational activities.</p>	<ul style="list-style-type: none"> Significant damage to aquatic
CON	Contamination of Land & Groundwater (Inc. spills & contaminated soils)	<p>Spill of ecotoxic or hazardous materials (hydrocarbons, chemicals, effluent, contaminated materials) to land resulting from an event not related to John Holland activities</p> <p>Unexpected find or management of contaminated soil additional to baseline investigation that is not related to John Holland activities</p>	<p>Minor spill of ecotoxic or hazardous materials (hydrocarbons, chemicals, effluent, contaminated materials) to land.</p> <ul style="list-style-type: none"> 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). 	<p>Significant spill of ecotoxic or hazardous materials (hydrocarbons, chemicals, effluent, contaminated materials) to land. Some residual contamination of land;</p> <ul style="list-style-type: none"> 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. 	<p>Major spill of ecotoxic or hazardous materials (hydrocarbons, chemicals, effluent, contaminated materials) to land.</p> <ul style="list-style-type: none"> 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.	<p>Minor pollutant discharge to surface water, no permanent impact on water resources e.g.</p> <ul style="list-style-type: none"> Oil spill escapes into offsite stormwater system where it is contained and does not enter a flowing watercourse; 	<p>Significant and/or persistent discharge to water; or Short-term/localised impact on water resources e.g.</p> <ul style="list-style-type: none"> Oil spill escapes into offsite flowing watercourse; Uncontrolled discharge from sedimentation basin or site drainage system above 	<p>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.</p> <ul style="list-style-type: none"> Acid drainage run-off from mining operations; Tailings dam failure;

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			<ul style="list-style-type: none"> Controlled discharge from sedimentation basin or site drainage system above allowable limits; 	allowable limits (eg pumping untreated water to receiving waters);	<ul style="list-style-type: none"> 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	<p>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.</p> <ul style="list-style-type: none"> 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 	<p>Generation of, noise, vibration, light or odour causing sustained periods of inconvenience or disruption to community and the environment e.g.</p> <ul style="list-style-type: none"> 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 	<p>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.</p> <ul style="list-style-type: none"> 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 from an event not related to John Holland activities	<p>Minor discharge of pollutant to atmosphere outside site or workplace or in breach of a documented obligation e.g.</p> <ul style="list-style-type: none"> Overfill of cement silo, cement dust release; Occasional/sporadic exceedences of air quality criteria. 	<p>Major or persistent releases of pollutant to atmosphere outside site or workplace or in breach of a documented obligation e.g.</p> <ul style="list-style-type: none"> Regular exceedences of air quality criteria. Nuisance dust levels requiring significant offsite clean-up (eg cleaning of inside of houses) 	<p>Major or persistent discharge of hazardous pollutant to atmosphere outside site or workplace e.g.</p> <ul style="list-style-type: none"> Explosion or leak of hazardous gas; Possible or actual evacuation of local vicinity; Continuous exceedence of air quality criteria.

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			<ul style="list-style-type: none"> Nuisance dust requiring minimal or no offsite clean-up (eg issue of carwash voucher) Refrigerant gas accidentally released to the atmosphere 	<ul style="list-style-type: none"> Odour complaints requiring relocation of material or significant changes to waste, earthworks of stockpile management Refrigerant gas purposely released to atmosphere 	
WAS	<p>Waste (solids, liquids, hazardous & non-hazardous classified/prescribed, etc.)</p> <p>Note: Refer to local dangerous goods legislation for appropriate manifest levels requiring Licences, placarding, etc.</p>	<p>Incorrect storage, transport, treatment or disposal of waste not related to John Holland activities</p>	<p>Unauthorised storage, transport, treatment or disposal of a minor, non-trivial quantity (up to 1000 litres, 1000 kg or 1.0 m³) of non-regulated waste in contravention of regulations or project waste management requirements.</p> <p>Examples include:</p> <ul style="list-style-type: none"> Disposal of materials in an incorrect waste facility or outside designated area (lay down/landfill areas). 	<p>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.</p> <p>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</p> <p>Examples include:</p> <ul style="list-style-type: none"> Failure to meet regulatory requirements for environmentally hazardous waste disposal. Repeated dumping of non-hazardous waste in an 	<p>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.</p> <p>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</p> <p>Examples include:</p> <ul style="list-style-type: none"> Reasonable probability of being detrimental to public health.

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				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	<p>European Heritage</p> <ul style="list-style-type: none"> Minor accidental, repairable damage to commonplace structures, or minor infringement of cultural values. <p>Aboriginal Heritage</p> <ul style="list-style-type: none"> Entering of protected sites 	<p>European Heritage</p> <ul style="list-style-type: none"> Significant damage to registered structures / items of cultural / heritage significance, <p>Aboriginal Heritage</p> <ul style="list-style-type: none"> Damage to registered sites of significance, to artefacts, or significant infringement of known cultural values / sacred locations. 	<p>European Heritage</p> <ul style="list-style-type: none"> Destruction or irreparable damage to highly valued structures / items / locations of cultural or heritage significance or value. <p>Aboriginal Heritage</p> <ul style="list-style-type: none"> Destruction or irreparable damage to artefacts, human remains or spiritual overlay.
F&F	Flora & Fauna (inc. weeds & pathogens)	<p>Damage to flora or fauna resulting from an event not related to John Holland activities</p> <p>Introduction or spread of weeds or disease resulting from an event not related to John Holland activities</p>	<p>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.</p> <ul style="list-style-type: none"> Death of a native animal or species, that is not identified as a pest; Accidental felling of a tree; 	<p>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.</p> <ul style="list-style-type: none"> Partial destruction of native habitat leading to impact on local species numbers or 	<p>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.</p>

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			<ul style="list-style-type: none"> • Over clearing of an area that is not native bush; • Localised spread of weeds or pathogens material within site. 	<p>disruption to breeding cycles;</p> <ul style="list-style-type: none"> • Short-term disruption of protected fauna breeding cycle. • Unapproved clearing of an area of remnant native vegetation/Declared Threatened or Rare flora 	<ul style="list-style-type: none"> • 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	<p>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:</p> <ul style="list-style-type: none"> • 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 	<p>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:</p> <ul style="list-style-type: none"> • 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 	<p>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.</p> <ul style="list-style-type: none"> • 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

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			leakage from reservoirs, pipelines, tanks, etc.	<ul style="list-style-type: none"> • 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
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Environment Incident Severity Classification



ABOUT THE ARTIST:

MARK WASHINGTON

Mark is a Kamilaroi artist who works in a variety of mediums and studies Aboriginal and Torres Straight Islander Cultural Arts at TAFE. He loves art, and his passion shows in his work.



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

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