CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

Document and Revision History

Document Details	
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Client	ARTC – Botany Rail Duplication
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Revisions

Rev	Date	Description	Prepared by	Reviewed by	Approved by
4	08/02/2022	Response to ER Comments	Mira Segaran	Rachael Labruyere	James Renwick
5	09/02/2022	Response to ER Comments	Mira Segaran	Rachael Labruyere	James Renwick
6	01/03/2022	Inclusion of DPE comments	Mira Segaran	Rachael Labruyere	James Renwick
7	24/05/2022	Inclusion of DPE comments	Mira Segaran	Rachael Labruyere	James Renwick
8	20/09/2022	Response to ER Comments	Mira Segaran	Rachael Labruyere	James Renwick
9	07/10/2023	6-Monthly Update	Hamish Russell	Eric Zhang	Paul Dalziel

Management reviews

Review date	Details	Reviewed by
08/08/2022	6-Monthly Review	Rachael Labruyere
07/10/2023	6-Monthly Review	Hamish Russell

Table of Content

Compliance Matrix

Reference	Requirement	Location in document
Conditions of Approval		
A1	The CSSI must be carried out in accordance with the terms of this approval and generally in accordance with the description of the CSSI in the *Botany Rail Duplication Environmental Impact Statement* (October 2019) and the *Botany Rail Duplication Submissions Report (March 2020)*.	This CEMP
A2	The CSSI must be carried out in accordance with all procedures, commitments, preventative actions, performance outcomes and mitigation measures set out in the documents identified in **Condition A1** unless otherwise specified in, or required under, this approval.	This CEMP and other JH Management Documents
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.*	This CEMP and other JH Management Documents
A4	The Proponent must comply with all written requirements or directions of the Planning Secretary, in a timely manner, including in relation to: (a) the environmental performance of the CSSI; (b) any document or correspondence in relation to the CSSI (including the provision of such documentation or correspondence); (c) any independent appointment or dismissal made in relation to the CSSI; (d) any notification given to the Planning Secretary under the terms of this approval; (e) any audit of the construction or operation of the CSSI; (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.	PEMP
A5	Where the terms of this approval require a document or monitoring program to be prepared or a review to be undertaken in consultation with identified parties, evidence of the consultation undertaken must be submitted to the Planning Secretary with the document. The evidence must include: (a) documentation of the engagement with the party identified in the condition of approval that has occurred before submitting the document for approval; (b) a log of the dates of engagement or attempted engagement with the identified party and a summary of the issues raised by them; (c) documentation of the follow-up with the identified party where engagement has not occurred to confirm that they do not wish to engage or have not attempted to engage after repeated invitations; (d) outline of the issues raised by the identified party and how they have been addressed; and (e) a description of the outstanding issues raised by the identified party and the reasons why they have not been addressed..	Section 3.3 Appendix E CSWMP CTTAMP CNVMP
A6	This approval lapses five (5) years after the date on which it is granted, unless works are physically commenced on or before that date.	N/A
A7	References in the terms of this approval to any guideline, protocol, Australian Standard or policy are to such guidelines, protocols, Standards or policies in the form they are in as at the date of this approval.	N/A
A8	Any document that must be submitted within a timeframe specified in or under the terms of this approval may be submitted within a later timeframe agreed with the Planning Secretary. This condition does not apply to the immediate written notification required in respect of an incident under **Condition A37**. The Proponent must provide supporting evidence so that the Secretary can consider the need, environmental impacts and consistency of any request.	N/A
A16	Before establishment of a major construction ancillary facility(ies) (excluding minor construction ancillary facilities established under Condition A18), the Proponent must prepare a Site Establishment Management Plan which outlines the environmental management practices and procedures to be implemented for the establishment of the construction ancillary facility(s). The Site Establishment Management Plan must be	Section 2.2, 2.4 CNVMP

	prepared in consultation with the relevant council and government authorities. The Plan must be submitted to the ER for approval one (1) month before the establishment of any major construction ancillary facility(ies). The Site Establishment Management Plan must detail the management of the establishment of ancillary facilities and include: (a) a description of activities to be undertaken during establishment of the facility (including scheduling and duration of works to be undertaken at the site); (b) figures illustrating the proposed operational site layout; (c) a program for ongoing analysis of the key environmental risks arising from the site establishment activities described in subsection (a) of this condition, including an initial risk assessment undertaken prior to the commencement of site establishment works; (d) details of how the site establishment activities described in subsection (a) of this condition will be carried out to: (i) meet the performance outcomes stated in the documents listed in Condition A1, and (ii) manage the risks identified in the risk analysis undertaken in subsection (c) of this condition; and (e) a program for monitoring the performance outcomes, including a program for construction noise monitoring consistent with the requirements of Condition C9. Nothing in this condition prevents the Proponent from preparing individual Site Establishment Management Plans for each major construction ancillary facility.	
A17	The use of a major construction 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 C9 have been approved by the ER.	Section 2.4
A18	Lunch sheds, office sheds, portable toilet facilities, material storage, parking and the like, can be established and used where they satisfy the following criteria: (a) are located within the Construction Boundary; and (b) have been assessed by the ER to have - (i) minor amenity impacts to surrounding residences and businesses, after consideration of matters such as compliance with the Interim Construction Noise Guideline (DECC, 2009), traffic and access impacts, dust and odour impacts, and visual (including light spill) impacts, and (ii) minor environmental impact with respect to waste management and flooding, and (iii) no impacts on biodiversity, soil and water, and heritage items beyond those already approved under other terms of this approval.	Section 2.4 CNVMP
A19	Boundary screening must be erected around major construction ancillary facilities that are adjacent to sensitive receivers for the duration of construction of the CSSI unless otherwise agreed with relevant Council, and adjacent residents, business operators or landowners.	CNVMP
A20	Boundary screening required under **Condition A19** of this approval must reduce visual, noise and air quality impacts on adjacent sensitive receivers.	CNVMP
A21 – A27	ER Requirements	Section 7.1
A28 – A31	AA Requirements	Section 7.1
A32	The Department must be notified in writing of the dates of commencement of work and operation at least one (1) month before those dates.	PEMP
A33	If staging of construction or operation is proposed, the Department must be notified in writing at least one (1) month before the commencement of each stage, of the date of commencement of that stage.	PEMP
A34	No later than one (1) month before the date notified for the commencement of construction (in the pre-construction compliance report), an Independent Audit Program prepared in accordance with the Independent Audit Requirements (Department of Planning and Environment 2018) (the Independent Audit PAR) must be submitted to the Planning Secretary for information	Section 11.3 Appendix L
A35	Independent Audits of the CSSI must be carried out in accordance with: (a) the Independent Audit Program submitted to the Department under Condition A34 of this approval; and (b) the requirements for an Independent Audit Methodology and Independent Audit Report in the Independent Audit PAR.	Section 11.3 Appendix L
A36	In accordance with the specific requirements in the Independent Audit PAR, the Proponent must: (a) review and respond to each Independent Audit Report prepared under Condition A35 of this approval; and (b) make each Independent Audit Report and response to it publicly available and notify the Planning Secretary in writing when this has been done.	Section 11.3 Appendix L

A37	During construction, the Department 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 noncompliance with this approval should be provided within one week of the notification. The requirement to notify the Department under this condition excludes incidents which are required to be notified to the Office of the National Rail Safety Regulator.	Section 10 Appendix K
A38	Subsequent notification must be given and reports submitted in accordance with the requirements set out in Appendix A.	Section 10 Appendix K
Section B Conditions	Community Information and Recording	Section 9 and Communications Strategy
C1	A **Construction Environmental Management Plan** (**CEMP**), or a Staged CEMP where staging is proposed in accordance with **Condition A11**, must be prepared by having regard to the *Environmental Management Plan Guideline – Guideline for Infrastructure Projects* (DPE, April 2020). The plan must detail how the performance outcomes, commitments and mitigation measures specified in the documents listed in **Condition A1** will be implemented and achieved during construction.	This Plan Section 1.2
C2	The **CEMP** must provide:	
C2(a)	A description of activities to be undertaken during construction (including the scheduling of construction)	Section 2.2
C2(b)	Details of environmental policies, guidelines and principles to be followed in the construction of the CSSI	Section 4
C2(c)	A program for ongoing analysis of the key environmental risks arising from the activities described in subsection (a) of this condition, including an initial risk assessment undertaken before the commencement of construction	Section 6.1 Appendix C
C2(d)	Details of how the activities described in subsection (a) of this condition will be carried out to: (i) meet the performance outcomes stated in the documents listed in **Condition A1**; and (ii) manage the risks identified in the risk analysis undertaken in subsection (c) of this condition	Section 6.1 CEMP Sub-Plans Appendix C
C2(e)	An inspection program detailing the activities to be inspected and frequency of inspections	Section 11.1
C2(f)	A protocol for managing and reporting any: (i) incidents; and (ii) non-compliances with this approval or statutory requirements	Section 10.1 Section 11.4 Appendix K
C2(g)	Procedures for rectifying any non-compliance with this approval identified during compliance auditing, incident management or at any time during construction	Section 11.4
C2(h)	A list of all the **CEMP Sub-plans** required in respect of construction, as set out in **Condition C4**. Where staged construction of the CSSI is proposed, the **CEMP** must also identify which **CEMP Sub-plan** applies to each of the proposed stages of construction	Section 3.1
C2(i)	A description of the roles and environmental responsibilities for relevant positions and their relationship with the **ER**	Section 7.1
C2(j)	For training and induction for employees, including contractors and sub-contractors, in relation to environmental and compliance obligations under the terms of this approval	Section 8
C2(k)	For periodic review and update of the **CEMP** and all associated plans and programs	Section 12.1 Section 12.4
C2(l)	Relevant details from the **Site Establishment Management Plan(s)**	Section 2.4
C2(m)	The **Unexpected Heritage Finds Procedure** required under **Condition E12**.	Appendix F
C3	The **CEMP** or a **Staged CEMP** must be prepared and submitted to the **ER** for approval no later than one (1) month before the commencement of construction or where construction is staged, no later than one (1) month before the commencement of that stage.	Section 3

<table>
<tr><td></td><td>Construction must not commence until the ER has approved the CEMP for the relevant stage.</td><td></td></tr>
<tr><td>C4</td><td>CEMP Sub-plans must be prepared in consultation with the relevant government agency(ies) and council(s) identified for each CEMP Sub-plan in Table 3.

Table 3. CEMP Sub-Plan and relevant public authorities
<table>
<tr><th></th><th>Required CEMP Sub-plan</th><th>Relevant agencies to be consulted for each CEMP Sub-plan</th></tr>
<tr><td>(a)</td><td>Construction Transport, Traffic and Access Management Plan</td><td>TfNSW and relevant Council(s)</td></tr>
<tr><td>(b)</td><td>Noise and vibration</td><td>Pipeline operators/asset owners, relevant Council</td></tr>
<tr><td>(c)</td><td>Soil and Water Management Plan</td><td>Relevant Council</td></tr>
</table>
Note: This condition does not preclude the preparation of subplans the proponent has committed to preparing in documents referenced in Condition A1</td><td>Section 3.3
Appendix E
CNVMP
CSWMP
CTTAMP</td></tr>
<tr><td>C5</td><td>The CEMP Sub-plans must state how:</td><td rowspan="4">CNVMP, CSWMP and CTTAMP</td></tr>
<tr><td>C5(a)</td><td>The environmental performance outcomes identified in the documents listed in Condition A1 as modified by these conditions will be achieved;</td></tr>
<tr><td>C5(b)</td><td>The mitigation measures identified in the documents listed in Condition A1 as modified by these conditions will be implemented;</td></tr>
<tr><td>C5(c)</td><td>The relevant terms of this approval will be complied with</td></tr>
<tr><td>C5(d)</td><td>Issues requiring management during construction (including cumulative impacts), as identified through ongoing environmental risk analysis, will be managed.</td><td></td></tr>
<tr><td>C6</td><td>The Soil and Water Management Plan must be prepared by a suitably qualified and experienced person and include:
(a) an Asbestos Management Plan (AMP) prepared in accordance with the National Environment Protection (Assessment of Site Contamination) Measure (NEPM) 2013
(b) an Acid Sulfate Soil Management Plan (ASSMP) developed in accordance with the Acid Sulfate Soils Manual (ASSMAC, 1998); and
(c) an Unexpected Contamination Finds Procedure.</td><td>CSWMP</td></tr>
<tr><td>C7</td><td>Details of all information requested by an agency to be included in a CEMP Sub-plan as a result of consultation, including copies of all correspondence from those agencies, must be provided with the relevant CEMP Sub-Plan.</td><td>Section 3.3
CSWMP
CNVMP
CTTAMP</td></tr>
<tr><td>C8</td><td>Construction must not commence until the CEMP and all CEMP Sub-plans have been approved by the ER and must be implemented for the duration of construction. Where construction of the CSSI is staged, construction of a stage must not commence until the CEMP and sub-plans for that stage have been approved by the ER.</td><td>Section 3
CSWMP
CNVMP
CTTAMP</td></tr>
<tr><td>C9</td><td>The following Construction Monitoring Programs set out below must be prepared and implemented to enable comparison of the actual construction performance against the predicted performance . The Construction Monitoring Programs must be prepared in consultation with the relevant government agencies and councils as identified for each Construction Monitoring Program.</td><td>CNVMP</td></tr>
<tr><td>C10</td><td>Each Construction Monitoring Program must provide:
(a) details of baseline data available;
(b) details of baseline data to be obtained and when;
(c) details of all monitoring of the project to be undertaken;
(d) the parameters of the project to be monitored;
(e) the frequency of monitoring to be undertaken;
(f) the location of monitoring;
(g) procedure for the timing and frequency reporting of monitoring and analysis against relevant
criteria, including details of the timing and frequency for reporting results to the ER, the Planning Secretary and relevant government agencies;
(h) details of the methods that will be used to analyse the monitoring data;
(i) procedures to identify and implement additional mitigation measures where results of
monitoring identify unexpected impact; and
(j) any consultation to be undertaken in relation to the monitoring programs.</td><td>CNVMP</td></tr>
</table>

<table>
<tr><td>C11</td><td>The Construction Monitoring Programs must be submitted to the ER for approval at least one (1) month before the commencement of construction.</td><td>CNVMP</td></tr>
<tr><td>C12</td><td>Construction, which is required to be monitored under the Construction Monitoring Programs, must not commence until the Construction Monitoring Programs have been approved by the ER, and all relevant baseline data for the specific construction activity has been collected.</td><td>CNVMP</td></tr>
<tr><td>C13</td><td>The Construction Monitoring Programs, as approved by the ER must be implemented for the duration of construction and for any longer period set out in the monitoring program or specified by the Planning Secretary, whichever is the greater.</td><td>CNVMP</td></tr>
<tr><td>C14</td><td>The results of the Construction Monitoring Programs must be made publicly available in the form of a Construction Monitoring Report at the frequency identified in the relevant Construction Monitoring Program.
Note: Where a relevant CEMP Sub-Plan exists, the relevant Construction Monitoring Program may be incorporated into that CEMP Sub-Plan.</td><td>CNVMP</td></tr>
<tr><td>C15</td><td>The Noise and Vibration Monitoring Program must include:
(a) noise and vibration monitoring at agreed representative locations in consultation with the AA adjacent to the construction to confirm construction noise and vibration levels; and
(b) for the purposes of (a), noise monitoring during the day, evening and night-time periods must be undertaken within the first month of construction and must cover the range of activities being undertaken at the sites.</td><td>CNVMP</td></tr>
<tr><td>Section D</td><td>Operational Environmental Management</td><td>N/A</td></tr>
<tr><td>E1</td><td>In addition to the performance outcomes, commitments and mitigation measures specified in the documents listed in Condition A1, all reasonably practicable measures must be implemented to minimise the emission of dust and other air pollutants during construction of the CSSI</td><td>Appendix D (ECP 03 – Section 3.5)</td></tr>
<tr><td>E2</td><td>Any work associated with the CSSI must limit the clearing of native vegetation to the greatest extent practicable</td><td>Appendix D (ECP 5 – Section 5.6)</td></tr>
<tr><td>E3</td><td>Impacts to plant community types must not exceed those identified in the documents listed in Condition A1</td><td>Appendix D (ECP 5 – Section 5.6)</td></tr>
<tr><td>E4</td><td>Before any impact on the plant community types or species that are required to be offset, the Proponent must retire the credits specified in Table 4 and in accordance with the offset rules of the Biodiversity Conservation Act 2016.
<table>
<tr><th>PCT ID and Name</th><th>Vegetation Formation</th><th>Number of Credits</th></tr>
<tr><td>PCT 1071 Phragmites australis and Typha orientalis coastal freshwater wetlands of the Sydney Basin Bioregion</td><td>Freshwater Wetlands on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions</td><td>3</td></tr>
<tr><td>PCT 1234 Swamp Oak swamp forest fringing estuaries, Sydney Basin Bioregion and South East Corner Bioregion</td><td>Swamp Oak Floodplain Forest of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions</td><td>8</td></tr>
</table>
Note: Credits have been calculated using the Biodiversity Assessment Method</td><td>Appendix D (ECP 5 – Section 5.6)</td></tr>
<tr><td>E5</td><td>The Proponent must submit to the Planning Secretary for information a copy of the Credit Retirement Report for the retirement of the biodiversity offsets specified in Table 4 within one (1) month of receiving the report.</td><td>Appendix D (ECP 5)</td></tr>
<tr><td>E6</td><td>The CSSI must deliver a net increase in trees. Replacement trees must target an increase in tree canopy and aim to enhance the relevant council's position in respect of the Sydney Green Grid. This condition does not apply to trees that are subject to a biodiversity offset.</td><td>Appendix D (ECP 5 – Section 5.2)</td></tr>
<tr><td>E7</td><td>Replacement trees must:
(a) be located on public land and prioritised within 500 metres of the Construction Boundary in consultation with the relevant council and SACL;
(b) comply with the National Airports Safeguarding Framework Guideline C: Managing the Risk of Wildlife Strikes in the Vicinity of Airports;
(c) be provided no later than six (6) months following the commencement of operation;
(d) have a pot size consistent with the relevant council’s plans / programs / strategies for vegetation management, street planting, or open space landscaping, or as agreed by the relevant council(s). In areas not subject to council plans/programs/strategies,</td><td>Appendix D (ECP 5 – Section 5.6)</td></tr>
</table>

	pot sizes must be informed through consultation with the relevant council(s) and Sydney Airport.	
E8	Measures identified in in the documents listed in Condition A1 to not worsen or improve flood characteristics must be incorporated into the detailed design of the CSSI.	CSWMP
E9	Flood information developed during detailed design, such as flood reports, models and geographic information system outputs, and work as executed information from a registered surveyor certifying finished ground levels, the dimensions and finished levels of all structures constructed as part of the CSSI within flood prone land, must be provided to the relevant council, EESG and the SES in order to assist in preparing relevant documents and to reflect changes in flood behaviour as a result of the CSSI. The council, EESG and the SES must be notified in writing that the information is available no later than one (1) month following the completion of construction. Information requested by the relevant Council, EESG or the SES must be provided no later than six (6) months following the completion of construction or within another timeframe agreed with the relevant council, EESG and the SES.	CSWMP
E10	Following completion of all work described in in the documents listed in Condition A1 in relation to heritage items, except for the archaeological mitigation programs proposed, a Heritage Report including the details of any archival recording, must be prepared in accordance with guidelines and standards published by the Heritage Council of NSW and EESG.	Appendix D (ECP 1 – Section 1.6)
E11	The Heritage Report must be submitted to the Planning Secretary, the Heritage Council of NSW and EESG for information no later than 12 months after the completion of the work referred to in Condition E10.	Appendix D (ECP 1 – Section 1.6)
E12	An Unexpected Heritage Finds Procedure must be prepared to manage unexpected heritage finds in accordance with guidelines and standards published by the Heritage Council of NSW or EESG Human Remains would classify as an unexpected find and should be managed as part of this protocol. Note: Human remains that are found unexpectedly during the carrying out of works may be under the jurisdiction of the NSW State Coroner and must be reported to the NSW Police immediately.	Appendix F Appendix D (ECP 1 – Section 1.6.3)
E13	The Unexpected Heritage Finds Procedure must be implemented for the duration of construction work.	Appendix F Appendix D (ECP 1 – Section 1.6.3)
E14	Work must only be undertaken during the following standard construction hours: (a) 7:00am to 6:00pm Mondays to Fridays, inclusive; (b) 8:00am to 1:00pm Saturdays; and (c) at no time on Sundays or public holidays.	CNVMP
E15	Notwithstanding Condition E14, work may be undertaken between 1:00 pm to 6:00 pm on Saturday.	CNVMP
E16	Notwithstanding **Conditions E14**, **E15** and **E19** work may be undertaken outside the hours specified in the following circumstances: (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) an approval has been obtained for a controlled activity under the *Airports Act 1996*; or (d) where different construction hours are permitted or required under an EPL in force in respect of the CSSI; or (e) work approved under an **Out-of-Hours Work Protocol** for work not subject to an EPL as required by **Condition E29**; or (f) construction that causes LAeq(15 minute) noise levels: (i) no more than 5 dB(A) above the rating background level at any residence in accordance with the *Interim Construction Noise Guideline* (DECC, 2009), and (ii) no more than the 'Noise affected' noise management levels specified in Table 3 of the *Interim Construction Noise Guideline* (DECC, 2009) at other sensitive land uses, and (iii) continuous or impulsive vibration values, measured at the most affected residence are no more than the maximum values for human exposure to vibration, specified in Table 2.2 of *Assessing Vibration: a technical guideline* (DEC, 2006), and (iv) intermittent vibration values measured at the most affected residence are no more than the maximum values for human exposure to vibration, specified in Table 2.4 of *Assessing Vibration: a technical guideline* (DEC, 2006); or (g) negotiated agreements with directly affected residents. *Note: Section 5.24(1)(e) of the EP&A Act requires that an EPL be substantially consistent with this approval.*	CNVMP

E17	On becoming aware of the need for emergency works in accordance with **Condition E16**, the Proponent must notify the **AA**, **ER** and the EPA (if an EPL applies) of the need for that work. The Proponent must use best endeavours to notify all noise and/or vibration affected occupants of sensitive land uses of the likely impact and duration of those works.	CNVMP
E18	Except as permitted by an EPL, out-of-hours work that may be regulated through the **Out of Hours Work Protocol** as per **Condition E28** includes, but is not limited to: (a) carrying out work that, during standard hours, would result in a high risk to construction personnel or public safety, based on a risk assessment carried out in accordance with AS/NZS ISO 31000:2009 “Risk Management”; or (b) where the relevant road authority has advised the Proponent in writing that carrying out the work during standard hours would result in a high risk to road network performance and a road occupancy licence will not be issued; or (c) where the relevant utility service operator has advised the Proponent in writing that carrying out the work during standard hours would result in a high risk to the operation and integrity of the utility network; or (d) where an approval is required for a controlled activity in accordance with the Airports Act 1996; or (e) work undertaken in a rail possession for operational or safety reasons. *Note: Other out-of-hours works can be undertaken with the approval of an EPL, or through the project’s **Out-of-Hours Work Protocol** for works not subject to an EPL.*	CNVMP
E19	Except as permitted by an EPL or approved through the Out of Hours Work Protocol in **Condition** **E29**, highly noise intensive work must only be undertaken: (a) between the hours of 8:00 am to 6:00 pm Monday to Friday; (b) between the hours of 8:00 am to 1:00 pm Saturday; and if continuously, then not exceeding three (3) hours, with a minimum cessation of work of not less than one (1) hour between each block where the work is likely to impact the same noise sensitive receivers. For the purposes of this condition, 'continuously' includes any period during which there is less than one (1) hour between ceasing and recommencing any of the work. Note: This condition does not prevent a negotiated agreement being reached with affected sensitive receivers as per **Condition E16**.	CNVMP
E20	The Proponent must consult with proponents or applicants of other State Significant development and infrastructure within 200 metres of the CSSI and take reasonable steps to coordinate work, including utility work, to minimise cumulative impacts of noise and vibration and maximise respite for affected sensitive receivers.	CNVMP
E21	All work undertaken for the delivery of the CSSI, including those undertaken by third parties (such as utility relocations), must be coordinated to ensure respite is provided**.** The Proponent must: (a) reschedule any work to provide respite to impacted noise sensitive receivers so that the respite is achieved in accordance with **Condition E26**; or (b) consider the provision of alternative respite or mitigation to impacted noise sensitive receivers; and (c) provide documentary evidence to the AA and **ER** in support of any decision made by the Proponent in relation to respite or mitigation.	CNVMP
E22	Noise generating work in the vicinity of potentially affected community, religious, educational institutions and noise and vibration-sensitive businesses and critical working areas (such as theatres, laboratories and operating theatres) resulting in noise levels above the relevant NML must not be timetabled within sensitive periods, unless other reasonable arrangements with the affected institutions are made at no cost to the affected institution.	CNVMP
E23	Mitigation measures must be implemented with the aim of achieving the following construction noise management levels and vibration criteria: (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);	CNVMP

	(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). Any work identified as exceeding the noise management levels and/or vibration criteria must be managed in accordance with the **Noise and Vibration CEMP Sub-plan.** *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. Mitigation measures must provide ongoing mitigation for construction noise*	
E24	Owners and occupiers of properties at risk of exceeding the screening criteria for cosmetic damage must be notified before works that generate vibration commences in the vicinity of those properties. If the potential exceedance is to occur more than once or extend over a period of 24 hours, owners and occupiers are to be provided a schedule of potential exceedances on a monthly basis for the duration of the potential exceedances, unless otherwise agreed by the owner and occupier. These properties must be identified and considered in the **Noise and Vibration CEMP Sub-plan**.	CNVMP
E25	The Proponent must conduct vibration testing before and during vibration generating activities that have the potential to impact on heritage items to be retained and protected, to identify minimum working distances to prevent cosmetic damage. In the event that the vibration testing and monitoring shows that the preferred values for vibration are likely to be exceeded, the Proponent must review the construction methodology and, if necessary, implement additional mitigation measures.	CNVMP
E26	The Proponent must provide respite* for sensitive land uses where work is undertaken outside hours specified in **Condition E14** and **E15** and exceeds the NML by 25 dB(A) or are greater than 75 dB(A) (LAeq(15 min)), whichever is the lesser at the façade of the building of a residential receiver. (The noise level must be reduced by 5dB where the noise contains annoying characteristics and increased by 10dB if the property has been treated or offered at-property noise treatment) *Note* ***** *respite can be any combination of days or hours where out of hours work would not be more than 5dB(A) above the rating background level at any residence.*	CNVMP
E27	In order to undertake work outside hours specified in **Condition E14** and **E15**, the Proponent must identify appropriate respite* required by **Condition E26**, and/or additional mitigation measures required by **Condition E28**, for out-of-hours work in consultation with the community at each affected location on at least a 3 monthly basis. This consultation must include (but not be limited to) providing the community with a three-monthly forward schedule of likely out of hours works. The schedule must include: (a) an indicative schedule of likely out-of-hours work for a period no less than three (3) months; (b) a description of the potential work, location and duration; (c) the noise characteristics and likely noise levels of the work; and (d) likely mitigation and management measures to be implemented and/or offered. The outcomes of the community consultation (including any agreed alternative arrangements), the identified respite periods and the scheduling of the likely out-of-hour works must be provided to the **AA, ER and** EPA. *Note* ***** *respite periods can be any combination of days or hours where out of hours works would not be more than 5dB(A) above the rating background level at any residence.*	CNVMP
E28	Additional mitigation measures such as temporary alternative accommodation or other agreed mitigation measure, must be offered/ made available to residents affected by out-of-hours work (including where utility work is being undertaken for the project) where the construction noise levels, between: (a) 10:00 pm and 7:00 am, Monday to Friday; (b) 10:00 pm Saturday to 8:00 am Sunday; and (c) 6:00 pm Sunday and public holidays to 7:00 am the following day unless that day is Saturday then to 8:00am, are predicted to exceed the NML by 25 dB(A) or are greater than 75 dBA (LAeq(15 min)), whichever is the lesser and the impact is planned to occur for more than two (2) nights over a seven (7) day rolling period. The NML must be reduced by 5 dB where the noise contains annoying characteristics and increased by 10 dB if the property has been treated or offered at-property noise	CNVMP

	treatment. The noise levels and duration requirements identified in this condition may be changed through an EPL applying to the CSSI.	
E29	An **Out-of-Hours Work Protocol** must be prepared to describe the process for the consideration, management and approval of work which is outside the hours defined in **Conditions E14** and **E15** and **E19** and that is not subject to an EPL. The Protocol must be approved by the Planning Secretary before commencement of out of hours work. The Protocol must be prepared in consultation with the AA. The Protocol must: (a) provide a process for the consideration of out-of-hours work against the relevant noise management level and vibration criteria (including ground-borne noise), including the determination of low and high-risk activities; (b) provide a process for the identification of mitigation measures for residual impacts, including respite periods in consultation with the community at each affected location, consistent with the requirements of **Condition E26** and **E27,** and additional mitigation measures in accordance with **Condition E28**; (c) identify procedures to facilitate the coordination of out-of-hours works approved by an EPL to ensure appropriate respite is provided; (d) identify an approval process that considers the risk of activities, proposed mitigation, management and coordination, including where: (i) low risk activities can be approved by the **ER** in consultation with the **AA**, and (ii) high risk activities can be approved by the **ER** in consultation with the **AA,** and the approval provided to the Planning Secretary for information before work commences; and (e) identify arrangements to notify EPA and community for approved out of hours works, which maybe detailed in the **Communication Strategy**.	CNVMP
E30 – E34	Operational Groundborne Noise	Design Management Plan/ONVR
E35	The Proponent must identify the utilities and services (hereafter “services”) potentially affected by Construction to determine requirements for diversion, protection and/or support. The Proponent, in consultation with service providers, must ensure that disruption to services resulting from the Construction is avoided where possible. Where unavoidable, customers must be advised in accordance with the **Communication Strategy** required under **Condition B1**.	CNVMP
E36	Before commencement of any construction, a structural engineer must undertake condition surveys of buildings, structures, utilities and the like that are identified in the **Noise and Vibration CEMP Sub-Plan** as being at risk of damage due to construction vibration unless as otherwise instructed or agreed to by the pipeline or utility operator. The results of the surveys or agreement with the pipeline or utility operator must be documented in a **Condition Survey Report** for each item at risk of damage. Copies of **Condition Survey** **Reports** must be provided to the owners of the items surveyed, and no later than one month before the commencement of construction.	CNVMP
E37	After completion of construction, condition surveys must be undertaken by a structural engineer of all items for which condition surveys were undertaken in accordance with **Condition E36**. The results of the surveys must be documented in a **Condition Survey Report** for each item surveyed. Copies of **Condition Survey Reports** must be provided to the landowners of the items surveyed no later than three (3) months following the completion of construction.	CNVMP
E38	The Proponent, where liable, must rectify any property damage caused directly or indirectly (for example from vibration or groundwater change) by the construction or operation of the CSSI at no cost to the owner unless otherwise agreed with owner.	CNVMP
E39	Reinstated billboards must be reinstated like for like (the billboard must be no larger than existing and use the same technology) in the immediate vicinity of their current location	Appendix D, ECP 02
E40	All reasonably practicable erosion and sediment controls must be installed and appropriately maintained to minimise water pollution. When implementing such controls, any relevant guidance in the *Managing Urban Stormwater* series must be considered.	CSWMP
E41	A **Site Contamination Report**, documenting the outcomes of Stage 1 and Stage 2 contamination assessments of land upon which the CSSI is to be carried out, or land associated with the CSSI, that is suspected, or known to be, contaminated must be prepared by a suitably qualified and experienced person in accordance with guidelines made or approved under Section 105 of the *Contaminated Land Management Act 1997* (NSW). *Note: for that land where Stage 1 and Stage 2 contamination assessments have already been undertaken, they do not need to be undertaken again for the purposes of this condition.*	CSWMP

E42	A **Remediation Action Plan** must be prepared by a suitably qualified and experienced person in accordance with guidelines made or approved under Section 105 of the *Contaminated Land Management Act 1997* (NSW).	CSWMP
E43	The proponent must engage a NSW EPA accredited Site Auditor throughout the duration of works to ensure that any work required in relation to soil or groundwater contamination is appropriately managed. The Proponent must adhere to the management measures accepted by the Site Auditor.	CSWMP
E44	The Proponent must submit to the Planning Secretary the following: (a) an **Interim Audit Advice** or a **Section B Site Audit Statement** prepared by the Site Auditor that certifies that the **Remediation Action Plan** prepared in **Condition E42** is appropriate and that the site can be made suitable for the proposed use. (b) if work is to be completed in stages, any **Interim Audit Advice/s** issued by the Site Auditor to confirm satisfactory completion of each stage. (c) a **Section A1 Site Audit Statement** or a **Section A2 Site Audit Statement** and accompanying **Site Audit Report** prepared by a NSW EPA accredited Site Auditor must be submitted to the Planning Secretary and the relevant Council for information no later than one month before the commencement of operation.	CSWMP
E45	Contaminated land must not be used for the purpose approved under the terms of this approval until a **Site Audit Statement** determines the land is suitable for that purpose and any conditions on the **Site Audit Statement** have been complied with.	CSWMP
E46	The Proponent must endeavour to achieve a best practice level of performance for the CSSI being a minimum 'Design' and 'As built' rating score of 65 using the Infrastructure Sustainability Council of Australia infrastructure rating tool or an equivalent level of performance using a demonstrated equivalent rating tool.	Sustainability Management Plan
E47	Before any local 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 Council within three (3) weeks of completion of the survey and at least two weeks before the road is used by heavy vehicles associated with the construction of the CSSI.	CTTAMP
E48	The use of local roads must minimise impacts to local traffic, cyclists and pedestrians. Management measures must be incorporated in the **Construction Transport, Traffic and Access Management Plan** as relevant, and: (a) demonstrate that the use of local roads will not compromise the safety of the public; (b) describe the measures that will be implemented to avoid where practicable the use of local roads past schools, aged care facilities and childcare facilities during peak times for operation.	CTTAMP
E49	Closure and relocation of bus stops during construction must be undertaken in consultation with the relevant bus service providers and relevant council(s).	CTTAMP
E50	If damage to roads occurs as a result of construction of the CSSI, the Proponent must either (at the landowner's discretion): (a) compensate the relevant road authority for the damage so caused. The amount of compensation may be agreed with the relevant road authority, but compensation must be paid even if no agreement is reached; or (b) rectify the damage to restore the road to at least the condition it was in before work commenced as identified in the **Road Dilapidation Report**.	CTTAMP
E51	During work, all reasonably practicable measures must be implemented to maintain pedestrian, cyclist and vehicular access to, and parking in the vicinity of, businesses and affected properties. Where disruption cannot be avoided or minimised, alternative pedestrian, cyclist and vehicular access, and parking arrangements must be developed in consultation with affected businesses and implemented before the disruption. Adequate signage and directions to businesses must be provided before, and for the duration of, any disruption.	CTTAMP
E52	Access to all utilities and properties must be maintained during construction, where practicable, unless otherwise agreed with the relevant utility owner, landowner or occupier.	CTTAMP
E53	Any property access physically affected by the CSSI during construction must be reinstated to at least an equivalent standard, unless otherwise agreed by the landowner or occupier.	CTTAMP
E54	Safe pedestrian and cyclist access must be maintained around work sites during construction. In circumstances where pedestrian and cyclist access is restricted or removed due to construction, the relevant council(s) must be informed two weeks before any disruption, and alternate routes which comply with the relevant standards must be provided and signposted or controlled before, and for the duration of, any disruption.	CTTAMP
E55	The Proponent must take reasonable steps to coordinate construction traffic impacts with Proponents of other State Significant proposals near the CSSI and take	CTTAMP

	reasonable steps to coordinate work to minimise cumulative traffic impacts in consultation with TfNSW and key Stakeholders.	
E56	Construction vehicles (including staff vehicles) associated with the CSSI must be managed to minimise parking, idling and queuing on public roads.	CTTAMP
E57	The CSSI must be constructed in a manner that minimises visual impacts of construction sites, including light spill.	Appendix D (ECP 2 – Section 2.5)
E58	The Proponent must construct and operate the CSSI with the objective of minimising the impact of light spill to surrounding properties and aircraft operations.	Appendix D (ECP 2 – Section 2.4 and 2.5)
E59	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 and relevant Australian Standards in the series AS/NZ 1158 – Lighting for Roads and Public Spaces and NASF Guideline E: Managing the Risk of Distractions to Pilots from Lighting in the Vicinity of Airports. Additionally, the Proponent must manage residual night lighting impacts to protect properties adjoining or adjacent to the CSSI, in consultation with affected landowners.	Appendix D (ECP 2 – Section 2.5)
E60	Utilities Management	N/A
E61	Waste generated during construction and operation must be dealt with in accordance with the following priorities: (a) waste generation must be avoided and where avoidance is not reasonably practicable, waste generation must be reduced; (b) where avoiding or reducing waste is not possible, waste must be re-used, recycled, or recovered; and (c) where re-using, recycling or recovering waste is not possible, waste must 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*.	Appendix D (ECP04, Section 4.5.3) CSWMP
E62	All waste must be classified in accordance with the EPA's *Waste Classification Guidelines*, with appropriate records and disposal dockets retained for audit purposes.	Appendix D (ECP04 Section 4.5.2) CSWMP
E63	The CSSI must be designed, constructed and operated so as to not worsen water quality of surface water discharged from the rail corridor unless an EPL in force in respect of the CSSI contains different requirements.	SWMP
E64	Drainage feature crossings (permanent and temporary watercourse crossings and stream diversions) and drainage swales and depressions must be constructed in accordance with relevant guidelines and designed by a suitably qualified and experienced person.	CSWMP
E65	Works on waterfront land must be carried out in accordance with *Guidelines for Controlled Activities on Waterfront Land* (NRAR 2018).	CSWMP
Revised Environmental Mitigation Measures		
CNV2	A CNVMP will be prepared as a sub plan to the CEMP before any main construction works begin. This will include: • identification of nearby sensitive receivers • description of works, construction equipment and hours of work • criteria for the project and relevant licence and approval conditions • requirements for noise and vibration monitoring • details of how community consultation and notification will be completed • procedures for handling complaints • details on how respite will be applied where ongoing high impacts are seen at certain receivers. The CNVMP will also consider cumulative construction impacts and the likelihood for 'construction fatigue' from consecutive projects in the area and ongoing operation and maintenance activities in the rail corridor, and define a suitable management approach. Quantitative road traffic noise impacts from temporary detours during construction would also be evaluated, especially for local roads with low existing volumes. Ongoing operation and maintenance activities of the existing rail corridor during the period of construction will be managed through ARTC's existing environmental management system	Noise and Vibration Management Sub-Plan
CWQ1	A Soil and Water Management Plan will be developed to manage soil and water risks during the projects main construction works, including risks associated with encountering existing and potential soil contamination. Procedures to store, handle and	Soil and Water Management Sub-Plan

	use materials and equipment appropriately to prevent spills and leaks will be included in the SWMP.	
CTT1	Implementation of Construction Transport, Traffic and Access Management Plan (CTTAMP) for the main construction works. As a minimum, the CTTAMP will include: • identification of haulage routes • notification and consultation strategy with public and relevant authorities/stakeholders • special event and emergency services management • parking restrictions • protocol for monitoring cumulative traffic impact • Pre and post-construction surveys of local road pavement conditions to identify any potential damage caused by heavy vehicles, and processes for rectification (as appropriate) • Requirements for post-construction road safety audits. The CTTAMP will also consider cumulative construction impacts and define a suitable management approach. The CTTAMP will not be created for enabling	Traffic Transport Access Management Sub-Plan

Emergency & Key Contacts

Position	Name	Phone
EPA pollution hotline		131 555
Fire and Rescue NSW		000 (for pollution incidents that present an immediate threat to human health or property) 1300 729 579 (for pollution incidents that do not present an immediate threat to human health or property)
The Ministry of Health		02 9391 9000
SafeWork NSW		131 050
Bayside Council		1300 581 299
ARTC EnviroLine (24-hour community information line)		1300 550 402
Environment Manager	Hamish Russell	0438 003 915
Senior Project Manager	Paul Dalziel	0437 475 070
Environmental Representative	Rui Henriques	0404 031 391
Acoustic Advisor	Dave Anderson	0421 611 226
ARTC Environmental Representative	Alison Wedgwood	0456 943 284
ARTC South Train Control	Train Transit Manager	(02) 6930 5311

Glossary & Abbreviations

Abbreviation	Expanded text
AEO	Airport Environment Officer
AMS	Activity Method Statement
ARTC	Australian Rail Track Corporation
ASS	Acid Sulfate Soils
ASSMP	Acid Sulfate Soils Management Plan
BRD	Botany Rail Duplication Project
CEMP	Construction Environmental Management Plan
Compliance audit	Verification of how implementation is proceeding with respect to a Construction Environmental Management Plan (CEMP) (which incorporates the relevant approval conditions).
CoA	Conditions of approval
CSSI	Critical State Significant Infrastructure
Minister, the	Minister of the NSW Department of Planning and Environment (or delegate)
DPE	Department of Planning and Environment
EIS	Environmental Impact Statement
EEC	Endangered Ecological Community
EESG	Environment, Energy and Science Group of the Department (formerly OEH)
EPA	NSW Environment Protection Authority
EMS	Environmental Management System
Environmental aspect	Defined by AS/NZS ISO 14001:2015 as an element of an organisation's activities, products or services that can interact with the environment.
Environmental impact	Defined by AS/NZS ISO 14001:2015 as any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organisation's environmental aspects.
Environmental incident	An unexpected event that has, or has the potential to, cause harm to the environment and requires some action to minimise the impact or restore the environment.
Environmental objective	Defined by AS/NZS ISO 14001:2015 as an overall environmental goal, consistent with the environmental policy, that an organisation sets itself to achieve.
Environmental policy	Statement by an organisation of its intention and principles for environmental performance.
Environmental target	Defined by AS/NZS ISO 14001:2015 as a detailed performance requirement, applicable to the organisation or parts thereof, that arises from the environmental objectives and that needs to be set and met in order to achieve those objectives.

Environmental Representative (ER)	A suitably qualified and experienced person independent of Project design and construction personnel employed for the duration of construction. The principal point of advice in relation to all questions and complaints concerning environmental performance.
EP&A Act	Environmental Planning and Assessment Act 1979 (NSW)
EPL	Environment Protection Licence
ESCP/ERSED	Erosion and Sediment Control Plan/Erosion and Sediment Controls
GMRs	Global mandatory requirements
Hold point	Is a verification point that prevents work from commencing prior to approval
HSE	Health, safety and environment
IMS	Integrated management system
ISCA	Infrastructure Sustainability Council of Australia
JH	John Holland
Non-compliance	Failure to comply with the requirements of the Project approval or any applicable licence, permit or legal requirements.
Non-conformance	Failure to conform to the requirements of Project system documentation including this CEMP or supporting documentation.
NVMP	Noise and Vibration Management Plan
PDCA	Plan-Do-Check-Act
PEMP	Project Environmental Management Plan
Principal, the	ARTC
POEO Act	Protection of the Environment Operations Act 1997 (NSW)
Project, the	Botany Rail Duplication Project
RAP	Remediation Action Plan
REMMs	Revised Environmental Mitigation Measures
ROL	Road occupancy licence
SEP	Site Environmental Plan
SEAR's	Secretary's Environmental Assessment Requirements
SEMP	Site Establishment Management Plan
SMP	Sustainability Management Plan
SWMP	Soil and Water Management Plan
SYD	Sydney Airport Corporation
TRA	Task Risk Assessment
WRA	Workplace Risk Assessment

1. Introduction

1.1 Background

ARTC have awarded the contract for design and construction of the Botany Rail Duplication Project to John Holland (JH).

1.2 Purpose

This Construction Environmental Management Plan (CEMP) and associated sub plans have been prepared to outline and describe how JH will comply with the NSW Minister for Planning's conditions of approval SSI-9714 (CoA), environmental documents and client specifications. Additionally, it outlines how JH will minimise the environmental risks, and achieve environmental outcomes on the Project by providing a structured approach to ensure appropriate controls are implemented.

Operation of the Project will be managed in accordance with CoA Part D and has been excluded from this plan.

Implementing the CEMP and sub plans effectively will ensure that the Project is constructed in accordance with the requirements of the Minister's Conditions of Approval, Revised Environmental Mitigation Measures and the Projects other environmental performance requirements.

The CEMP has been prepared in accordance with:

- The Project approval SSI-9714
- AS/NZS ISO 14001.
- John Holland (JH) Environmental Management System (EMS).

The objectives of this CEMP are to:

- Describe the scope of the Project, including a description of activities to be undertaken during construction and the scheduling of construction, along with site layout figures showing project boundaries.
- Identify environmental obligations attached to the Project
- Provide details of how the performance outcomes, commitments and mitigation measures specified in the EIS will be implemented and achieved during construction
- Outline the environmental policies, guidelines and principles to be followed in the construction of the Project.
- Describe a monitoring program for ongoing analysis of the Project activities and provide procedures for rectification of any environmental non-compliances identified.
- Provide a protocol for managing and reporting environmental incidents and environmental non-compliances
- Describe the roles and responsibilities of relevant Project personnel as they relate to environmental management during construction of the Project

The requirements of the CoA for a CEMP and sub-plans and where they are met in this CEMP (and sub-plans) are shown in the Compliance Matrix. This CEMP is the overarching document in the EMS for the Project and is applicable to all staff and sub-contractors associated with the construction of the Project

2. Project Description

The Botany Line connects Port Botany to the Enfield Intermodal Logistics Centre and is critical to the Sydney Freight Metropolitan network. The Botany Line has several constraints which restrict the capacity of the line, and it is ARTC's intention to alleviate all constraints and increase capacity to meet current and future container freight demand. The Botany Duplication Project forms part of this strategy.

2.1 Key features of the Botany Duplication Project.

The Botany Duplication Project would involve:

- Track duplication – including construction of a new track within the rail corridor for a distance of about three kilometres
- Track realignment (slewing) and upgrading – including moving some sections of track sideways (slewing) and upgrading some sections of track to improve the alignment of both tracks and minimise impacts on adjoining land uses
- New crossovers – including construction of new rail crossovers to maintain and improve access at two locations (totalling four new crossovers)
- Bridge works – including construction of new bridge structures at Mill Stream, Southern Cross Drive, O'Riordan Street and Robey Street (adjacent to the existing bridges at these locations), and re-construction of the existing bridge structures at Robey Street and O'Riordan Street
- Embankment/retaining structures – including construction of new embankment and retaining structures adjacent to Qantas Drive between Robey Street and O'Riordan Street and a new embankment between the Mill Stream and Botany Road bridges.
- Bi-directional signalling upgrades, drainage work and protecting/relocating utilities along the length of the project
- Ancillary Facilities – including compounds, laydown areas and site access facilities

Figure 1-1 presents the location of the works as presented in the EIS.

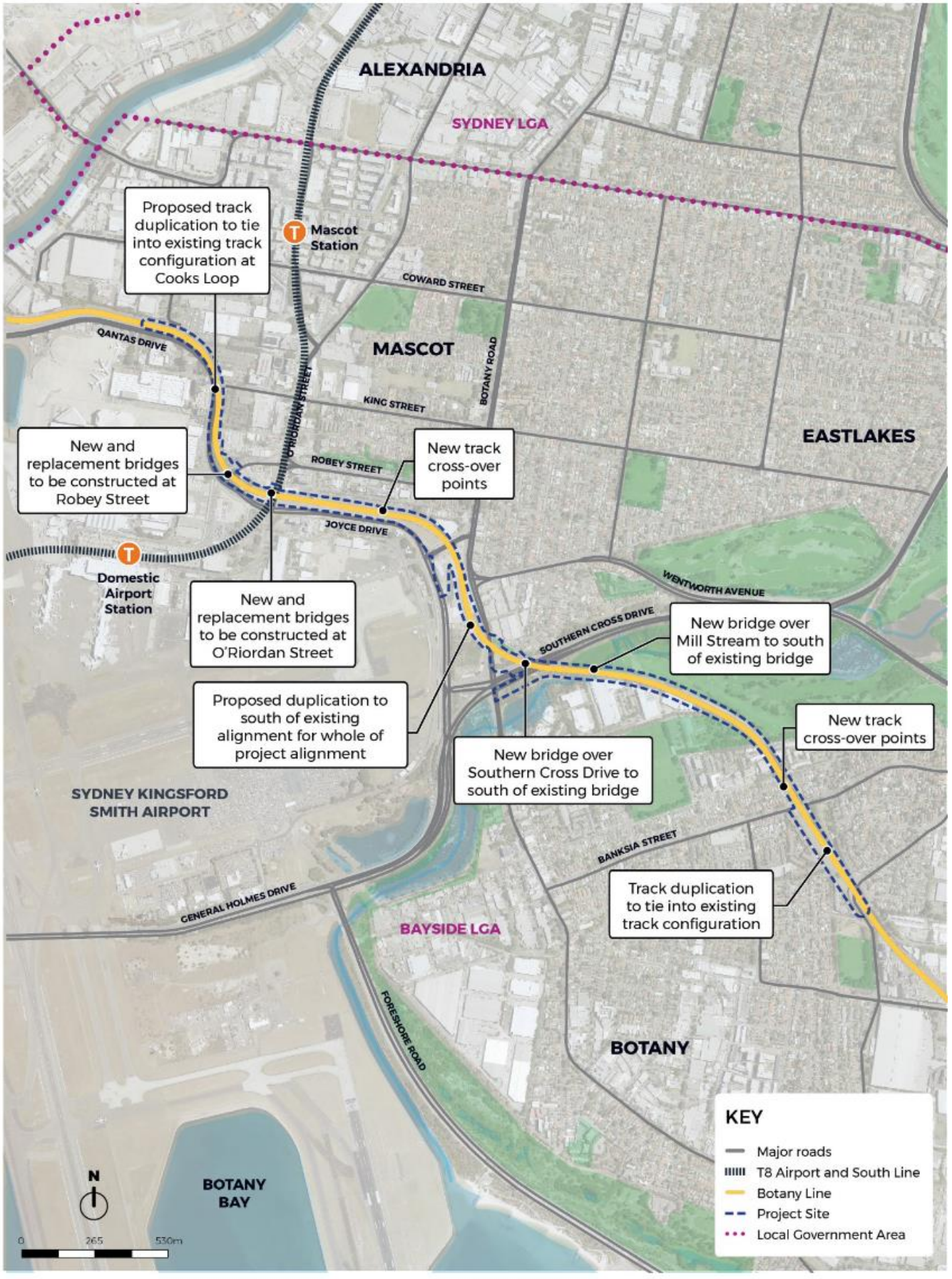


Figure 0-1 *Project overview*

2.2 Construction activities and scheduling

Key construction activities of the Project are described in Table 2-1 below.

Some Project activities may be undertaken prior to Construction as part of survey or site investigation activities. These activities will be undertaken under enabling and early works permissions including Low Impact Works Approvals (LIWAs) and Enabling Works/Site Environmental Management Plan which must be reviewed and endorsed by the Environmental Representative and managed independent to this CEMP.

Detailed plans showing an overview of construction activities are presented in Appendix B of this Plan.

Table 2-1 Key construction activities

Component	Typical activities
Survey and Investigative Works	Survey, geotechnical and contamination investigation works, utility works and other works as determined by ARTC to have minimal environmental impact.
Site Establishment	Install site fencing, hoarding and signage Installing site environmental management controls, including sediment and erosion control, screening and noise attenuation Installing traffic management measures Establishing work areas, construction compounds and site access arrangements Clearing and trimming of vegetation Establishing road/pedestrian/cyclist diversions where required
Track Infrastructure	
Track works	A new track would be installed within the rail corridor for the entire length of the project site on the southern side of the existing track. The new track would include the track formation, ballast and associated rail infrastructure. The existing track would be upgraded (where required) including raising/realigning (slewing) within the existing rail corridor. Four new crossovers would be constructed within the existing rail corridor at two locations. Existing track drainage within the rail corridor would be adjusted as required to suit the new or revised track levels.
Rail bridges	
Robey Street Bridge	Construction of two single span bridge structures. One of the new structures would be located on the southern side of the existing bridge, while the other would be constructed in the position of the existing bridge (which would be removed as part of the project).
O'Riordan Street Bridge	Construction of two single span structures. One of the new structures would be located on the southern side of the existing bridge, while the other would be constructed in the position of the existing bridge (which would be removed as part of the project).
Botany Road Bridge	Some minor remediation works may be required to the abutments and headstock of the existing bridge including piling for the approach slabs. The existing bridge would be retained as part of the project.

Component	Typical activities
Southern Cross Drive bridge	Construction of a new two-span bridge structure to be located to the south of the existing bridge. The existing bridge would be retained as a separate structure.
Mill Stream Bridge	The proposed bridge works at Mill Stream would involve a new two-span bridge structure to be located south of the existing bridge. The proposed bridge pier would be sited outside the banks of Mill Stream. The existing bridge would be retained as a separate structure.
Other Structures	
Embankments, cuttings and retaining walls	New embankments, embankment widening and minor cuttings would be required along the following sections of the corridor: • between Southern Cross Drive and Botany Road (within the 'Botany triangle') on the southern side of the existing track • between the western side of Mill Stream and Southern Cross Drive on the southern side of the existing track • between Bay Street and the eastern side of Mill Stream on the southern side of the existing track. New retaining walls would likely be required in areas along the length of the project. The largest retaining walls, would likely be located between O'Riordan Street and west of Robey Street on the southern side of the rail corridor and, subject to detailed design, are not anticipated to exceed around 4.5 metres from road level.
Utilities relocation and protection	Impacted utilities would be relocated or protected in line with the requirements of the utility providers and potential site constraints. Key utility works that would be required as part of the project include: relocation or protection of the existing Qenos high pressure ethylene pipeline protection of the existing APA group ethane pipeline protection or relocation of the existing Jemena gas mains protection or relocation of other minor utilities as required (to be determined during detailed design) protection or relocation of existing Ausgrid high voltage (HV) cables.
Billboard adjustments	Temporary removal of a number of existing billboards during construction to allow for construction of the new second track and associated structures. Replacement of impacted billboards following completion of construction works. Where billboards cannot be relocated within their original location due to space constraints, replacement billboards would be installed within other sections of the corridor. If opportunities for replacement or relocation are not available, the affected parties would be appropriately compensated under the Land Acquisition (Just Terms Compensation) Act 1991.
Land Acquisition	
Land acquisition	No land acquisition has been identified for the project.

Construction of the Project is planned to commence in early 2022, with a planned construction completion date in early 2024. Following testing and commissioning, the site will be handed over to ARTC for operation. Figure 2-1 presents an indicative construction program for the works.

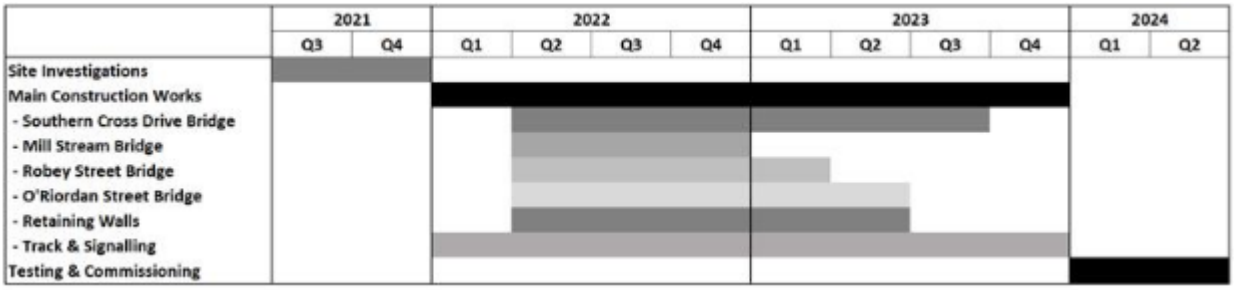


Figure 2-1 Indicative Construction Program

2.3 Construction Hours

JH will undertake works in accordance with the Project Environmental Protection Licence (EPL 21678). No scheduled activities will occur outside of the EPL premise boundary, with the EPL Premise Map updated in line with any changes to the project boundary.

CoA-E14 and E15 detail that works must only be undertaken during the following standard construction hours:

(a) 7:00am to 6:00pm Mondays to Fridays, inclusive;
(b) 8:00am to 1:00pm Saturdays and 1:00pm to 6:00pm on Saturday; and
(c) At no time on Sundays or public holidays

In addition to the above, construction hours stipulated within the EPL must be complied with for works subject to the Project EPL. Should Out of Hours activities be required, and the activities not permitted under the Project EPL, JH will seek a variation from the NSW EPA to the licence. Further details are included in the Construction Noise and Vibration Management Plan (BRD-JHG-EN-0000-MPL-13003).

2.4 Ancillary Facilities and Compounds

Ancillary Facilities will be used to support construction of the Project. Establishment of Major Ancillary Facilities will be carried out in accordance with the Site Establishment Management Plan (SEMP) produced (in consultation with relevant council and government authorities). The SEMP will consider the following where applicable:

a) a description of activities to be undertaken during establishment of the facility (including scheduling and duration of works to be undertaken at the site);
b) figures illustrating the proposed operational site layout;
c) a program for ongoing analysis of the key environmental risks arising from the site establishment activities described in subsection (a) of this condition, including an initial risk assessment undertaken prior to the commencement of site establishment works;
d) details of how the site establishment activities described in subsection (a) of this condition will be carried out to:
    i. meet the performance outcomes stated in the documents listed in **Condition A1**, and
    ii. manage the risks identified in the risk analysis undertaken in subsection (c) of this condition; and
e) a program for monitoring the performance outcomes, including a program for construction monitoring consistent with the requirements of **Condition C9.**

The operation of Major Ancillary Facilities for construction will be managed by this CEMP (and sub-plans) once approved. Where an approved Minor Ancillary Facility is intended to be converted to a Major Ancillary Facility, the facility will continue to operate under the Minor Ancillary Facility Approval (and scope) until such time as the SEMP for the facility has been completed and implemented.

3. CEMP Structure, Review and Revision

Construction, as defined within the Planning Approval, will not commence until the CEMP and relevant Sub-plans are approved by the Environmental Representative (ER).

Table 3-1 provides the sections of the CEMP that show compliance with the requirements of the Guideline for the Preparation of Environmental Management Plans (DIPNR, 2004).

Table 3-1 Guideline for the Preparation of Environmental Management Plans (DIPNR) compliance matrix

Requirement	Document Reference
Introduction	Section 1
Project Description	Section 2
CEMP Context	Section 3.1 and Section 4
CEMP Objectives	Section 1.2
Environmental Policy	Section 5.1
Environmental Management Structure and Responsibility	Section 4 and Section 7
Approval and Licensing Requirements	Section 6.3
Reporting	Section 12.3
Environmental Training	Section 8.2
Emergency Contacts and Response	Section 10
Risk Assessment	Section 6.1 and Appendix C
Environmental Management Activities and Controls	Appendix D
Environmental Schedules	Section 9.3.1 and Section 12.3
Environmental Monitoring	Section 11
Environmental Auditing	Section 11.3
Corrective Action	Section 11.4
EMP Review	Section 12.4

A full compliance matrix against the Required Environmental Mitigation Measures (REMMs) is presented in Appendix A including the Design REMMs. Design REMMs which are not relevant to construction and managed under design documentation have been included for information only within this CEMP and referenced as N/A.

3.1 CEMP Structure, Sub-Plans and Procedures

The CEMP is the overarching document under CoA-C1. Three sub-plans will be produced as part of the CEMP and in accordance with CoA-C4; the Construction Transport, Traffic and Access Management Plan, Noise and Vibration Management Plan and the Soil and Water Management Plan.

The management of the following aspects is considered appropriate and effective through Environmental Procedures/Environmental Control Plans (ECPs) and presented in Appendix D:

- Flora and Fauna
- Non-Aboriginal Heritage
- Aboriginal Heritage
- Air Quality
- Waste and Spoil
- Visual Amenity

Figure 3-1 presents the structure of the CEMP and associated management plans and procedures for the Project.

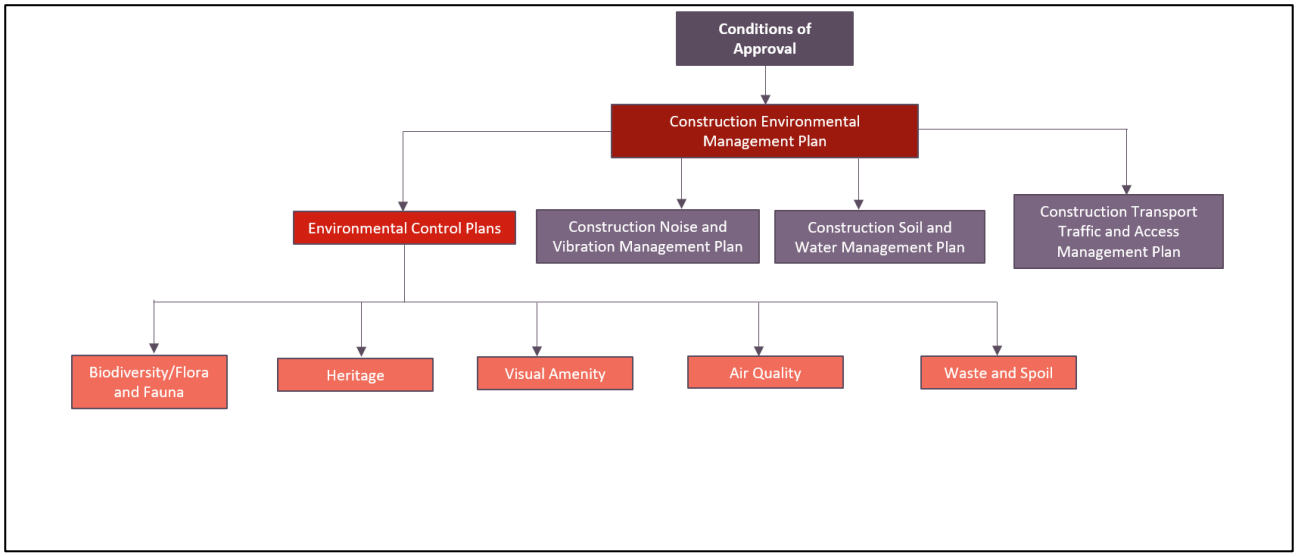


Figure 3-1 CEMP Structure

3.2 Issue Revision and Re-issue

The master 'controlled' CEMP document shall be held within the Project's document management system, Sharepoint and issued to ARTC, ER and AA via the Aconex system.

In respect to approval of the CEMP, in accordance with CoA-A25 (d) the ER will approve the CEMP (and sub-plans), after verifying all relevant matters set out in this planning approval pertaining to the documents have been met and make a written statement to the Planning Secretary to this effect.

Prior to the approval of the CEMP by the ER, the AA will endorse the NVMP sub plan as per CoA-A31(d).

Where minor changes are made to the CEMP (or sub-plans), the ER and AA in accordance with CoA A31(g)(iii) will consider relevant amendments made to the CEMP (and sub-plans) and, if satisfied such amendment is necessary, endorse the amendment.

All revisions and amendments to the management plans will be undertaken in accordance with the requirements of the Planning Approval SSI_9714, including any approved modifications.

3.3 Stakeholder Consultation and Approval of Plans

CEMP Sub-plans are required to be prepared in consultation with the relevant government agencies as listed in CoA-C4 and Table 3-2 below.

Comments received on the CEMP sub-plans will be considered and, where relevant, incorporated into the respective sub-plan and recorded in Appendix E. The initial consultation period extended 13 December 2021 – 12 January 2022. Ongoing consultation including any further responses provided after the approval of the Plan(s) will be recorded and included in the subsequent revision of the CEMP and associated sub-plan(s).

Table 3-2 CEMP Sub-Plan Consultation

Required CEMP Sub-Plan	Agency Consultation
Construction Transport, Traffic and Access Management Plan	TfNSW Bayside Council
Noise and Vibration Management Plan	Bayside Council Pipeline/Asset Owners and Operators
Soil and Water Management Plan	Bayside Council

3.4 Hold Points

The activities outlined in Table 3-3 are not to proceed without objective review and approval by the nominated authority. These activities below are considered hold points. These hold points should be incorporated into the working plans for the project (ECPs, construction methodologies, etc.).

Table 3-3: Project Hold Points

Item	Process Held	Acceptance Criteria	Approval Authority
CEMP and Sub-plans	Site activities	Site specific CEMP and Sub-plans have been developed, reviewed and approved.	ER
Works that require a Project Approval Consistency Assessment	Specific site activities related to Consistency Assessment.	Consistency Assessment approval	ARTC and ER
Dewatering	Dewatering / pumping water off the site.	S120 POEO Act	EPA (currently no dewatering permitted for the Project)
Sediment and erosion control measures	Construction activities involving ground disturbance.	Erosion and Sediment Control Plan (ESCP) has been developed, reviewed, approved and implemented	Environment Manager (or delegate)
Vegetation removal	Commencement of site clearing or vegetation removal.	Vegetation to be retained has been delineated and or protected and detailed in the pre-clearing permit (Appendix M). Number of trees and location to be recorded prior to removal.	Environment Manager (or delegate)
Out of Hours Work (OOHW)	Works to be performed outside of approved construction hours	Relevant EPL or Out of Hours Protocol	Environmental Manager (or delegate) AA/ER
Dangerous Goods	Transport of dangerous goods	Verification that transport vehicles meet the requirements.	Construction Manager (or delegate)
Dangerous Goods	Storage of dangerous goods	Verification that bunded storage is provided and that offset distances are maintained for the storage area.	Construction Manager (or delegate)
Controlled/ Hazardous Waste	Transport of Controlled / Hazardous waste from the site	Verification that the waste has been classified in accordance with the guidelines, transport licensing in place and landfill can lawfully receive the waste	Construction Manager (or delegate)

Item	Process Held	Acceptance Criteria	Approval Authority
Encounter of Unexpected Item	Commencement of works in the affected area	Unexpected Heritage Finds Procedure (Appendix F) and Unexpected Contamination Finds Procedure (Soil and Water Management Plan)	Construction Manager (or delegate) Environmental Manager (or delegate) Contamination Consultant or Heritage Consultant (as relevant)
Ancillary Facilities	Establishment of new major or minor ancillary facilities	Approval of Site Establishment Management Plan (Major Ancillary Facilities) Minor Ancillary Facility Checklist	ER
Construction Monitoring Programs	Construction Works	Approval of CEMP Sub-Plans	ER

4. Environmental Management System

The Project has adopted and tailored to satisfy Project-specific requirements (including consistency with the ARTC EMS) the JH EMS which is accredited to ISO 14001. The EMS provides structure to environmental management of the Project and covers areas such as training, record management, inspections, objectives and policies. This CEMP has been prepared as part of the EMS.

The EMS is based on the ISO14001 framework and the concept of Plan-Do-Check-Act (PDCA) model. The PDCA model provides an iterative process to achieve continual improvement. The concept has been applied to the JH EMS and this CEMP. It can be briefly described as follows:

- Plan: establish environmental objectives and processes necessary to deliver results in accordance with the John Holland environmental policy.
- Do: implement the processes as planned.
- Check: monitor and measure processes against the environmental policy, including its commitments, environmental objectives and operating criteria, and report the results.
- Act: take actions to continually improve.

Figure 4-1 shows how the EMS framework is integrated into a PDCA model within the JH EMS (and this EMP)

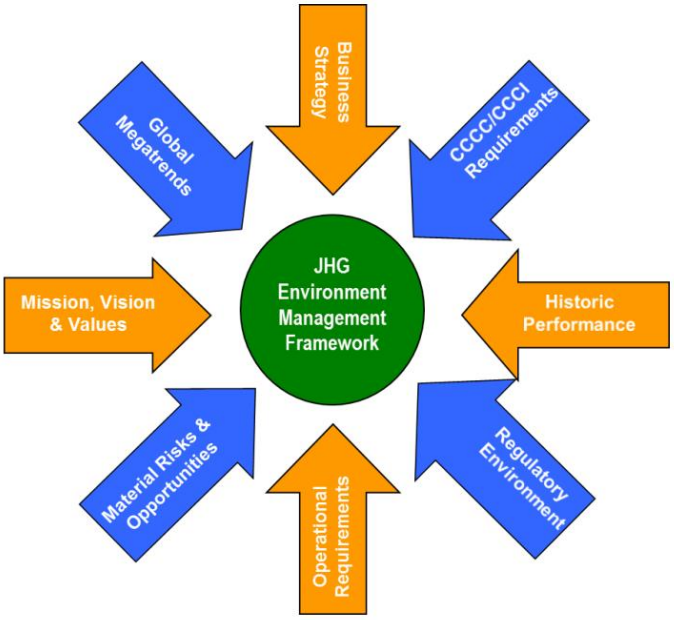


Figure 4-1: Primary Sources of Environmental Considerations

The EMS provides structure to environmental management of the Project and covers areas such as training, record management, inspections, objectives and policies. Figure 4-2 details the structure of the JH EMS including the CEMP, other documents, processes and procedures.

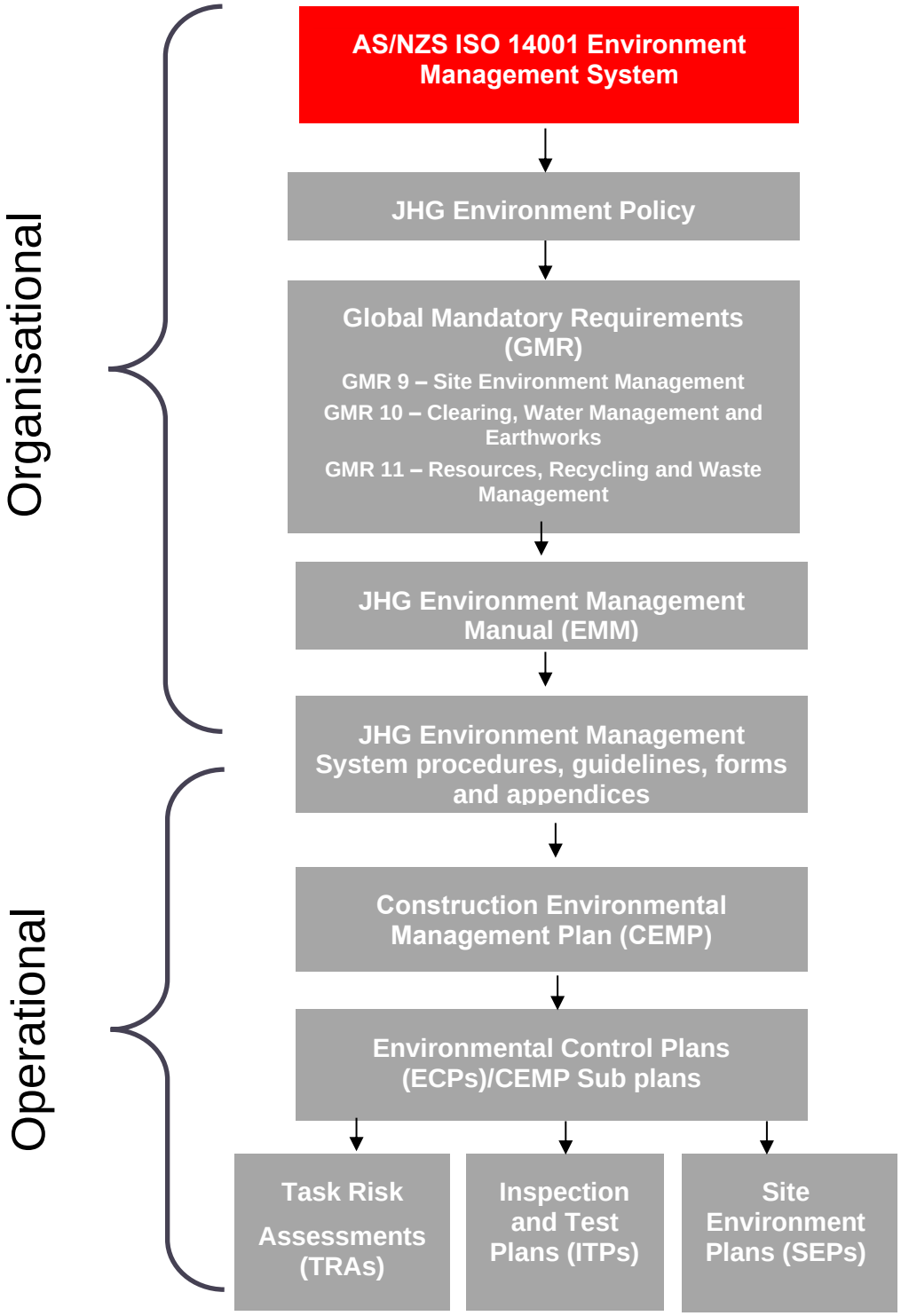


Figure 4-2: Environmental management system structure

5. Leadership

John Holland Project management demonstrate leadership and commitment with respect to the EMS by:

- Taking accountability for the effectiveness of the EMS on the Project
- Ensuring that the Environment Policy and environmental objectives are established and are compatible with the strategic direction and the context of the Project
- Ensuring the integration of EMS requirements into the Project's business processes
- Ensuring that the resources needed for the EMS are available on the Project
- Communicating the importance of effective environmental management and of conforming to the EMS requirements
- Ensuring that the EMS achieves its intended outcomes on the Project
- Directing and supporting Project personnel to contribute to the effectiveness of the EMS
- Promoting continual improvement
- Supporting other relevant management roles to demonstrate their leadership as it applies to their areas of responsibility.

5.1 Environmental Policy

The project will initially operate in accordance with both the John Holland and ARTC Environmental Policies which have been endorsed both companies' top management respectively. A Project Specific Environmental Policy will be developed following the commencement of construction which aligns to both the John Holland and ARTC Environmental Policies. The policies provide a framework for setting objectives and includes a commitment to the protection of the environment, including prevention of pollution and other specific commitments relevant to the BRD project. The Environment Policies will be communicated within the Project and available to all interested parties. A copy of the Environment Policies is attached in Appendix G as well as available on each companies' websites.

6. Planning

6.1 Risks and Opportunities

JH's risk management approach includes a comprehensive Safety, Quality and Environment (SQE) risk management planning process consisting of strategic, operational, team and individual processes. High level risks identified during pre-contract award risk assessments identify using a risk management hierarchy the best approach to project planning and managing the environmental risks and opportunities.

JH is committed to effective risk management prior to commencement of works and before employees are mobilised. All identified risks are incorporated into normal planning activities and are specifically designed to address Risk Management throughout the life cycle of works. The steps in the JH SQE Risk Management process are designed to address the specific risks associated with works conducted on the project.

With respect to the delivery of the project, JH will implement three levels of project environmental management documentation:

- Workplace Risk Assessment (WRA) & Construction Environmental Management Plan (CEMP);
    - All system, procedural and contractual requirements based on legislation and best practice are considered in planning and executing the work related to contract or project.
    - Environmental Risk Assessment and mitigation strategies are considered on a project wide basis
    - More detailed planning activities required for the project are identified (i.e. AMS)

- Activity Method Statement (AMS) and Task Risk Assessments (TRA); and
    - Links Environmental Risks to the activity schedule
    - Includes system and procedure requirements
    - Development of Environment Control Plans (ECP)for the project
    - Identifies the Site Environmental Plan (SEP) requirements for the project
- Site Environmental Plan (SEP)
    - A visual communication tool that illustrates the location of the environmentally sensitive areas to be protected, and the environmental controls to be installed prior to and during works. It is the implementation plan for environmental controls.

Project WRA's, AMS's and TRA's are owned by Project Management, Project Engineers, Supervisory Staff and Workforce. Project subject matter experts act as advisors during the preparation of these documents ensuring that environmental risks are suitably incorporated and acted upon. Implementation of the Managing SQE Risk Procedure by the Project team enables the actions identified in relation to risks and opportunities, and the achievement of environmental objectives, to be incorporated and used to:

- establish operating criteria
- implement control, in accordance with the operating criteria

Further detail of the John Holland risk assessment process may be found in the Project Workplace Safety Management Plan. The John Holland risk management process is maintained to AS/NZS ISO 31000:2018 Risk Management – Principals and Guidelines.

This CEMP has been prepared as part of the Workplace Risk Assessment phase, incorporating risks identified during the conceptual review process. The environmental risk assessment and controls are detailed in the AMSs and SEPs which are prepared as work progresses and specific site conditions are encountered and documented.

Change management enables environmental impacts associated with any variation in the scope of the permanent or changes to temporary works to be captured and managed effectively. As the SQE process documents are updated, the outcomes of the SQE reviews will be incorporated into the CEMP. This may be conducted in a scheduled review or as project scope or environmental aspects alter (physical, regulatory, commercial or technical). The requirement for a consistency assessment, review of environmental factors or modifications to the planning approval will also be investigated as part of the change management process.

It should be noted that these SQE documents are live documents which will be reviewed and reassessed continually as the project progresses.

The environmental aspects and impacts associated with the project (strategic and activities risks) identified during the WRA process are listed in Appendix C. All environmental aspects have been assigned with a risk ranking based on likelihood and consequences. The residual risks are the risk ranking following implementation of the proposed mitigation measures. The Environmental Risk Assessment (ERA) and the WRA will be reviewed and updated immediately following any environmental incident or change in design or scope.

6.2 Aspect Specific Management Plans

The CEMP sub-plans and Aspect Specific Management Plans describe the management measures and controls, responsibilities and monitoring requirements to be implemented to minimise potential impacts on the environment and the community.

6.2.1 Environmental Procedures

The Project environmental management system procedures, forms and other documents provide instructions and records related to both environmental and non-environmental activities throughout

the Project. A list of forms and checklists (subject to change) to be used to monitor environmental performance as detailed in the JH EMS is provided in Appendix H.

Project specific procedures will be developed in accordance with the requirements for the Project. Where applicable, existing sub-contractor procedures and work instructions will be applied or amended for use on the Project.

6.2.2 Environmental Control Plans

Significant environmental risks, with a medium or high-risk ranking, shall be controlled to a degree which is commensurate with the level of risk and the level of influence which JH have over these issues. These are documented in Environmental Control Plans which are contained in Appendix D.

Specific details and controls are included in the ECPs, should additional risks be encountered on site, these shall be addressed either by updating this CEMP or by using additional specific ECPs.

6.2.3 Site Environmental Plans

Site Environmental Plans (SEPs) provide a simple but effective tool to identify key risk areas, assist in the planning and management of specific areas and promote ongoing communication with construction personnel throughout the Project. They consist of a series of plans that clearly show the overarching environmental and socially sensitive areas within and surrounding the Project footprint, including vegetation, heritage, sensitive receivers, waterways, contamination, etc. in relation to the construction works and support activities (including but not limited to material storage areas, stockpile locations and temporary cabins/toilet facilities). SEPs will be progressively updated with the works and associated specific mitigation measures.

An example SEP for the Project is provided in Appendix I. If any new environmental constraints or environmental aspects are identified during the construction, the SEPs will be updated, however, they will be document controlled separately to this CEMP and/or other applicable sub-plans. An update of a SEP will not require this CEMP or sub-plans to be updated.

6.2.5 Erosion and Sediment Control Plans

Erosion and Sediment Control Plans (ESCPs) are used to identify the locations of erosion and sediment controls within the Project site. They are produced by a Certified Professional in Erosion and Sediment Control (CPESC) for high risk construction areas and reviewed by a CPESC for other areas,for construction stages from initial vegetation clearing to rehabilitation, when erosion and sediment controls are no longer required and are removed. ESCPs will be developed and implemented prior to commencing activities where there is a risk of erosion and sediment loss.

The ESCPs will be modified over time to reflect the changing site conditions and may be produced in conjunction with SEPs to provide more detailed site-specific environmental mitigation measures.

6.3 Global Mandatory Requirements

The Global Mandatory Requirements (GMRs) outline the control strategies and minimum standards for managing, and where possible, eliminating the key risks we are exposed to across the JH business.

These standards allow JH to:

- Minimise the impact of our activities on the environment and communities
- Reduce our use of natural resources and energy, and the generation of waste
- Be a reliable and trustworthy partner to our customers, dedicated to providing environmentally sustainable solutions throughout our diverse business.

The GMRs set environmental standards that can be applied across all Projects to ensure a consistent approach to environmental management.

6.4 Regulatory Requirements and Compliance

6.4.1 Legislation

A register of legal and other requirements for the Project is contained in Appendix J. This register will be reviewed at regular intervals, such as during management reviews, and updated with any applicable changes. Any changes made to the legal requirements register will be communicated to the wider Project team, including subcontractors where necessary through toolbox talks and specific training as detailed in Section 8 of this CEMP.

6.4.2 Permits and licences

A number of permits and licenses will be required to be obtained for the Project, which will be obtained and maintained as required for the duration of the Project. Table 6-1 presents details of the relevant environmental approvals, permits and licenses identified for the project. This list will be maintained by the JH Environmental Manager and will be reviewed prior to the commencement of construction, at regular intervals during construction and at least annually as part of the management review.

Table 6-1 Environmental approvals, permits and licences

Permit / licence	Legislation	Project component	Responsibility	Status
Environment Protection Licence (EPL)	Protection of the Environment Operations Act 1997.	Scheduled Activity	JH	Project EPL 21678 in force from 06 May 2022.
Controlled Activity Permit	Airports Act 1996	Intrusions into prescribed airspace/ works on Commonwealth land	JH	As required prior to activities that will intrude on the prescribed airspace.
Road Occupancy Licences (ROL)	Section 138 of the Roads Act 1993.	Work on an existing public/classified road.	JH	Ongoing – multiple licences may be required.

6.4.3 Compliance Tracking

A Conditions of Approval Compliance Matrix is included in Appendix A, and was established upon commencement of construction to ensure the approval conditions are captured, addressed and closed out. The Register includes the Conditions of Approval, Design and Construction REMMs and is linked to the Doors system for the Design REMMS (where required) as detailed in the Project Design Management Plan. The register will be reviewed by JH and ARTC on a 6 monthly basis (as part of the CEMP and Management Review process) to verify compliance with each condition. Outputs from the review will be provided to the ER and AA (as required). Should any non-compliances be identified, the process detailed in Section 11.4 will be implemented.`

6.4.4 Sydney Airport Corporation Limited (SACL Requirements)

Where works are carried out on SACL land, building approvals will be sought in accordance with the *Airport (Building Control) Regulations.* A minor CEMP specific to the works on SACL land will be developed and provided to SYD and the Airport Environment Officer (AEO) for review and approval.

Building applications are reviewed by both SYD and the ABC/AEO for compliance against the Airports Act and Regulations. SYD and ABC/AEOapproval must be in place prior to works commencing.

Pre-lodgement meetings will be held (as required) to present information to SYD to enable a briefing on the upcoming works and permits/licences being requested.

6.4.5 Environmental objectives and targets

As a means of assessing environmental performance during construction of the Project, environmental objectives and targets have been established. These objectives and targets have been developed with consideration of the significant environmental aspects, associated risks and opportunities and compliance obligations. The Project's environmental objectives are as follows:

- Full compliance with statutory approvals.
- No regulatory infringements (PINs or prosecutions).
- Address non-conformances and corrective actions within specific timeframes.
- Disseminate regular Project updates and other information through the Project website and other tools identified in the Community Engagement Strategy.
- Record and response to complaints within the timeframe specified in the Communication Strategy.
- Develop and maintain a program of ongoing environmental training.
- Capture lessons learnt from environmental incidents to minimise repeat issues.
- Any other Objectives and Targets included in the Sustainability Management Plan.

Performance against the objectives and targets will be monitored and reported as detailed in Section 12 of this CEMP.

6.4.6 EIS Performance Objectives

The performance objectives from the EIS are presented in Table 6-2 along with the references to this CEMP and associated sub-plans.

Table 6-2 Environmental Performance Objectives

Key Issues (as listed in the SEARS)	SEARS Desired Performance Outcomes	Project Specific Environmental Outcomes	CEMP/ Sub-Plan Reference
Traffic and Transport	Network connectivity, safety and efficiency of the transport system in the vicinity of the project are managed to minimise impacts. The safety of transport system customers is maintained. Impacts on network capacity and the level of service are effectively managed. Works are compatible with existing infrastructure and future transport corridors.	The project assists in the following: • meeting the forecast demand for container freight transport on the Botany Line • encouraging a shift in freight transport from road to rail, supporting a reduced rate of growth in truck movements and associated traffic congestion • minimising impacts on the local and regional network during construction • maintaining motorist, pedestrian and cyclist safety • maintaining safe access to properties.	CTTAMP
Noise and Vibration Amenity	Construction noise and vibration (including airborne noise, ground-borne noise and blasting) are effectively managed to minimise adverse impacts on acoustic amenity. Increases in noise emissions and vibration affecting nearby properties and other sensitive receivers during operation of the project are effectively managed to protect the amenity and well-being of the community.	The project minimises impacts on the local community by: • controlling noise and vibration at the source • controlling noise and vibration on the source to receiver transmission path • controlling noise and vibration at the receiver • implementing practicable and reasonable measures to minimise the noise and vibration impacts of construction activities on local sensitive receivers.	CNVMP
Noise and Vibration Structural	Construction noise and vibration (including airborne noise, ground-borne noise and blasting) are effectively managed to minimise adverse impacts on the structural integrity of buildings and items including Aboriginal places and environmental heritage.	The project minimises impacts on structures by: • controlling vibration at the source • controlling vibration on the source to receiver transmission path • implementing practicable and reasonable measures to minimise	CNVMP

	Increases in noise emissions and vibration affecting environmental heritage as defined in the *Heritage Act 1977* during operation of the project are effectively managed.	vibration impacts during construction and operation.	
Heritage	The design, construction and operation of the project facilitates, to the greatest extent possible, the long term protection, conservation and management of the heritage significance of items of environmental heritage and Aboriginal objects and places. The design, construction and operation of the project avoids or minimises impacts, to the greatest extent possible, on the heritage significance of environmental heritage and Aboriginal objects and places.	The project is designed to minimise the surface footprint. The design is sympathetic to the heritage significance of surrounding listed heritage items and, where practicable, avoids and minimises impacts on heritage. Impacts on heritage are managed in accordance with relevant legislation, including the EP&A Act, the *Heritage Act 1977* and relevant guidelines.	Appendix D ECP 01
Biodiversity	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.	The project is designed to minimise impacts on biodiversity. Where practicable, the design minimises the need to clear vegetation and recommends offsets where vegetation loss cannot be avoided. The project would minimise further impacts on biodiversity through the implementation of relevant mitigation measures. Potential impacts on biodiversity are managed in accordance with relevant legislation.	Appendix D ECP 05
Flooding	The project minimises adverse impacts on existing flooding characteristics. Construction and operation of the project avoids or minimises the risk of, and adverse impacts from, infrastructure flooding, flooding hazards, or dam failure.	Construction is undertaken in a manner that minimises the potential for adverse flooding impacts, through the implementation of mitigation measures. During operation the project would have no significant impact on the extent of the floodplain or its hazard categorisation. Changes in flooding patterns would not result in a significant change to the Flood Planning Area or the future development potential of land located outside the project footprint, or the social and economic costs of flooding.	CSWMP
Water-Hydrology	Long term impacts on surface water and groundwater hydrology (including drawdown, flow rates and volumes) are minimised. The environmental values of nearby, connected and affected water sources, groundwater and dependent ecological systems including estuarine and marine water (if applicable) are maintained (where values are achieved) or improved and maintained (where values are not achieved). Sustainable use of water resources.	Construction compounds and work areas are laid out such that flows are not significantly impeded. Some minor material within Mill Stream would be excavated and scour protection constructed along the eastern and western banks of Mill Stream. The project avoids long term impacts on surface water. Groundwater drawdown impacts during both construction and operation is considered negligible. No Groundwater Dependent Ecosystems are present in the project site or would be affected by the project. During operation, negligible change to the existing conditions is expected. Opportunities to reuse water resources are achieved during the design process and the use of water during construction is minimised	CSWMP

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).	Impacts on water quality are minimised during construction and operation. Erosion and sediment controls during construction are implemented in accordance with *Managing Urban Stormwater: Soils and Construction Volume 1* (Landcom, 2004) and *Managing Urban Stormwater: Soils and Construction Volume 2* (DECC, 2008a). The project will protect or contribute to achieving the Water Quality Objectives, during construction and operation. Construction water quality discharge will comply with the requirements of ARTC's management plans.	CSWMP
Soils	The environmental values of land, including soils, subsoils and landforms, are protected. Risks arising from the disturbance and excavation of land and disposal of soil are minimised, including disturbance to acid sulfate soils and site contamination.	Site-specific soil 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, 2014a).	CSWMP
Air Quality	The project is designed, constructed and operated in a manner that minimises air quality impacts (including nuisance dust and odour) to minimise risks to human health and the environment to the greatest extent practicable	The project is constructed and operated in accordance with the requirements of the *Protection of the Environment Operations Act 1997* and ARTC's existing environmental management system. Potential impacts would result from the generation of dust from construction works. Air quality impacts are expected to be minor and manageable through established mitigation and management measures. Impacts from odour are not anticipated. Operational air quality impacts are not anticipated for any pollutants. Operational air quality impacts from the project were not deemed to be significant. Air quality impacts are not considered to be of significance or of concern in relation to community health.	Appendix D ECP 03
Health and Safety	The project avoids or minimises any adverse health impacts arising from the project. The project avoids, to the greatest extent possible, risk to public safety.	Construction targets zero safety incidents. Dust, odour and other emissions will be effectively managed to avoid human health impacts. Noise will be managed to comply with relevant criteria and minimise the potential for health impacts.	Section 8.1
Hazards and Risks	The project avoids or minimises any adverse impacts arising from the use or proximity to hazardous goods. The project avoids, to the greatest extent possible, risk to public safety.	All dangerous goods are stored, handled and transported in accordance with relevant regulatory requirements and Australian Standards. Any works to utilities and high pressure pipelines will be in accordance with relevant regulatory	Appendix C

		requirements and Australian Standards. There will be no impacts on the operations of Sydney Airport. Any short term intrusion into the airspace will involve consultation with Sydney Airport Corporation Limited and the relevant approval process followed.	
Socio-economic, Land Use and Property	The project minimises adverse social and economic impacts and capitalises on opportunities potentially available to affected communities. 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.	During construction there would be temporary leasing of land for site compounds, the removal and replacement of advertising billboards, and disruptions to access of private properties in the vicinity of the project site. The design of the project minimises permanent land take outside of the rail corridor. Overall, the project is expected to result in long term social and economic benefits to local and Greater Sydney communities. These mainly relate increased rail freight efficiency and capacity across the regional and national freight network and less congestion on the road due to reduced freight movements made by trucks.	Details included in the Design Management Plan
Sustainability	The project reduces the NSW Government's operating costs and ensures the effective and efficient use of resources. Conservation of natural resources is maximised.	The design of the project would be based on the principles of sustainability. A sustainability assessment is being carried out under the Infrastructure Sustainability Council of Australia's Infrastructure Sustainability Rating Tool version 2.0. The project considers governance, economic, environment and social principles.	Details included in the Sustainability Management Plan
Waste	All wastes generated during the construction and operation of the project are effectively stored, handled, treated, reused, recycled and/or disposed of lawfully and in a manner that protects environmental values.	Suitable spoil will be recycled or reused. Off-site waste re-use will be managed in accordance with relevant NSW EPA resource recovery exemptions and requirements. Waste will be disposed of at appropriately licensed facilities.	Appendix D ECP 04
Climate Change Risk	The project is designed, constructed and operated to be resilient to the future impacts of climate change.	Climate change risks are considered throughout the design and development process. The project is designed to maximise climate change resilience while minimising costs and impacts on the community and environment. The climate change risk assessment is maintained in line with updated global climate models and regional projection data. The project is designed, constructed and operated in accordance with relevant climate change legislation and guidelines.	Details included in the Sustainability Management Plan

7. Resources, Responsibilities and Authority

The key environmental management roles and responsibilities for the construction phase of the Project are described in Section 7.1.

7.1 Roles and Responsibilities

The BRD Management Team ensures that the responsibilities and authorities for relevant roles are assigned and communicated within the wider project team.

Table 7-2 contains a list of the responsibilities and authorities for implementation of the EMS and CEMP on the project.

Role	Environmental Responsibilities and Authorities
Senior Project Manager (JH)	▪ Ensure all works comply with relevant regulatory and Project requirements. ▪ Ensure the requirements of this CEMP are fully implemented, and in particular, that environmental requirements are not secondary to construction, programme or cost requirements. ▪ Endorse and support the development, review and implementation of the Environmental Policy (Appendix G). ▪ Liaise with ARTC, Environmental Representative and other government authorities as required. ▪ Participate and provide guidance in the regular review of this CEMP, sub-plans and supporting documentation. ▪ Provide adequate resources (personnel, financial and technological) to ensure effective development, implementation and maintenance of the EMS (and CEMP). ▪ Ensure that all personnel receive appropriate induction training, including details of the environmental and community requirements. ▪ Ensure that complaints are investigated to ensure effective resolution. ▪ Stop work immediately if an unacceptable impact on the environment is likely to occur.
Construction Manager	▪ Plan construction work in a manner that avoids or minimises impact to environment. ▪ Ensure the requirements of this CEMP are fully implemented. ▪ Ensure construction personnel manage construction work in accordance with statutory and approval requirements. ▪ Support the JH Environment and Sustainability Manager in achieving the project environmental objectives. ▪ Ensure environmental management procedures and protection measures are implemented. ▪ Ensure all Project personnel attend an induction prior to commencing work. ▪ Liaise with ARTC and other government authorities as required. ▪ Stop work immediately if an unacceptable impact on the environment is likely to occur.
Project Engineer	▪ Implement and monitor onsite environmental management and compliance measures across all sites in conjunction with Environmental Advisor ▪ Undertake site inspections
Design Manager	▪ Ensure relevant environmental and planning requirements are considered and addressed in design development ▪ Provide input to and review consistency of assessments on design changes
Safety Manager	▪ Ensure environmental and planning requirements are addressed in relevant safety documents

	▪ Collaborative incident management and reporting in the event of safety incidents with a potential to cause environmental impact.
Site Superintendent	▪ Communicate with all personnel and sub-contractors regarding compliance with the CEMP and site-specific environmental issues. ▪ Ensure all site workers attend an environmental induction prior to the commencement of works. ▪ Co-ordinate the implementation of the CEMP. ▪ Co-ordinate the implementation and maintenance of pollution control measures. ▪ Identify resources required for implementation of the CEMP. ▪ Support the JH Environment and Sustainability Manager in achieving the Project environmental objectives, including on ground implementation of the EWMS and ESCP. ▪ Report any activity that has resulted, or has the potential to result, in an environmental incident immediately to the JH Environment and Sustainability Manager / Environmental Advisor. ▪ Co-ordinate action in emergency situations and allocate required resources. ▪ Stop activities where there is an actual or immediate risk of harm to the environment and advise the Construction Manager and Environment and Sustainability Manager.
Environment Manager (and Sustainability Lead)	▪ The environmental responsibilities of the Environment and Sustainability Manager, (also known in this document as the Environmental Manager), include, but are not limited to, the following: ▪ Overall responsibility for the implementation of environmental matters on the Project and liaison with the ER. ▪ Report to Senior Project Manager and other senior managers on the performance and implementation of the CEMP. ▪ Ensure management reviews of the CEMP are undertaken annually, documented and actions implemented. ▪ Ensure environmental risks of the Project are identified and appropriate mitigation measures implemented. ▪ Identify where environmental measures are not meeting the targets set and where improvement can be achieved. ▪ Obtain and update all environmental licences, approvals and permits as required. ▪ Liaise with Environmental Representative and approval authorities. ▪ Preparing reports on a monthly basis outlining the Project Works undertaken and the achievements that have been met, as well as identifying those areas where improvements were made. ▪ Oversee site monitoring, inspections and audits. ▪ Develop and facilitate induction, toolbox talks and other training programs regarding environmental requirements for all site personnel. ▪ Notify ARTC and relevant authorities in the event of an environmental incident or environmental non-conformance and manage corrective action implementation and close-out of these. ▪ Stop activities where there is an actual or immediate risk of harm to the environment, or to prevent environmental non-conformities, and advise the Senior Project Manager, Construction Manager and Superintendent.

Community and Stakeholder Manager	▪ Ensure that all community consultation activities are carried out. ▪ Report any environmental issues to the Environment and Sustainability Manager raised by stakeholders or members of the community. ▪ Communicate general Project progress, performance and issues to stakeholders including the community. ▪ Maintain the 24-hour complaints/information hotline.
Environmental Coordinator and Environmental Graduate	▪ Assist in preparing and revising the CEMP, sub-plans and associated documentation in accordance with all relevant requirements. ▪ Undertake site inspections, carry out monitoring activities and complete site checklists. ▪ Ensure monitoring records are appropriately maintained, reviewed and any non-compliance issues addressed. ▪ Assist all site staff with issues concerning Project environmental matters. ▪ Assist in developing training programs regarding environmental requirements and deliver where required, including delivery of the environmental component of toolbox talks. ▪ Stop activities where there is an actual or immediate risk of harm to the environment and advise the Senior Project Manager, Construction Manager, Superintendent and JH Environmental Manager.
Site Personnel	▪ Comply with the relevant requirements of the CEMP, or other environmental management guidance as instructed by a member of the Project's management. ▪ Participate in the mandatory Project/site induction program. ▪ Report any environmental incidents to the foreman immediately or as soon as practicable if reasonable steps can be adopted to control the incident. ▪ Undertake remedial action as required to ensure environmental controls are maintained in good working order. ▪ Stop activities where there is an actual or immediate risk of harm to the environment and advise the Senior Project Manager, Construction Manager, Superintendent or JH Environmental Manager.
Quality Manager	▪ Environmental document control ▪ Organise audits and communicate action to close out status.
ARTC	▪ ARTC is the Proponent under the EP&A Act with ultimate responsibility to DPE for compliance with the Project Planning Approval
Environmental Representative	▪ The primary role of the ER is to independently oversee compliance with the Project Planning Approval. ▪ Responsible for approval of this CEMP
Acoustic Advisor	▪ The AA independently oversees construction noise and vibration planning, management and mitigation in accordance with the Project Planning Approval.
DPE	▪ Responsible for assessing compliance with the Project Planning Approval and any documents which need specific approval of the Secretary including the OOHW Protocol
EPA	▪ Responsible for issuing JH with an EPL for the works and subsequent variation applications as work progresses

	▪ Monitoring compliance with the EPL

7.1.1 Subcontractor Selection and Management

All subcontractors are required to work in accordance with this CEMP including:

- Participation in project/site inductions, toolbox talks and specific environmental training
- Carrying out observations, inspections, audits and incident investigations (as required).
- Compliance with the JH EMS
- Planning, implementing and monitoring environmental protection measures and keeping environmental records; and
- Development and / or review of EWMSs (as required).

8. Competence, training, and awareness

To ensure that this CEMP is effectively implemented, each level of management is responsible for ensuring that all personnel reporting to them are aware of the requirements of this CEMP. The Environmental Manager or their delegate, will coordinate the environmental training, which may be presented in conjunction with other training and development activities (e.g. safety). Training requirements are presented in Table 8-1 below.

The Project shall:

- determine the necessary competence of persons doing work under its control that affects its environmental performance and its ability to fulfil its compliance obligations
- ensure that these persons are competent based on appropriate education, training or experience
- determine training needs associated with its environmental aspects and its environmental management system
- where applicable, taken actions to acquire the necessary competence, and evaluate the effectiveness of the actions taken
- maintain an induction register that includes the following details:
  - dates
  - name of training course as per Environmental Induction Program
  - names of persons trained, their position and signature; and
  - trainer details providing to all employees.
- Ensure that all employees, subcontractors, suppliers (as required) and consultants are inducted in the CEMP.

The Project shall ensure that persons doing work under the Projects control are aware of:

- the Environment Policy
- the environmental requirements described in Global Mandatory Requirements 9
- the significant environmental aspects and related actual or potential environmental impacts associated with their work (as detailed in the ECPs)
- their contribution to the effectiveness of the environmental management system, including the benefits of enhanced environmental performance
- the implications of not conforming with the environmental management system requirements, including not fulfilling the organisation's compliance obligations

Table 8-1 Training Requirements

Required Project documentation	Responsibility	JH tools to be used by Project to manage documentation
Training needs analysis	L&D Representative	SharePoint

Required Project documentation	Responsibility	JH tools to be used by Project to manage documentation
Education, training, experience, verification of competency records - for Individuals	HR Representative	SharePoint
Internal Training programmes (if required)	L&D Representative	L&D Course Catalogue
External Training programmes (if required)	L&D Representative	SharePoint
Counselling and Disciplinary records – for individuals	HR Representative	SharePoint
Subconsultant/subcontractor/supplier experience, certifications, and ratings – for organisations (including for subcontractors)	Commercial Representative	SharePoint
Subcontractor HSEQ Deliverables	Commercial Representative	SharePoint
Project Online Induction	L&D Representative	e-learning Centre
Induction attendance records	HR Representative	SharePoint
Project Orientation/Environmental On-boarding	Project Environment Representative	SharePoint
Site Orientation attendance records	HR Representative	SharePoint
Pre-start Meetings and attendance records	Supervisor(s)	SharePoint
Environmental Pre-Start	Project Environmental Representative	Sharepoint
Toolbox Meetings and attendance records	Supervisor(s)	SharePoint
HSEQ Alert briefing records	HSEQ Representative	SharePoint

8.1 Health, Safety and Environment Behavioural Framework

Presented as four core themes; ‘Standards’, ‘Communication’; ‘Risk management’ and ‘Involvement’; our HSE behaviours describe a set of everyday behaviours that are expected of all employees and people we work with to drive better HSE outcomes. The HSE Behavioural Framework encourages a culture that serves as an operational control.

The HSE behaviours are outlined in Figure 8.1 below.

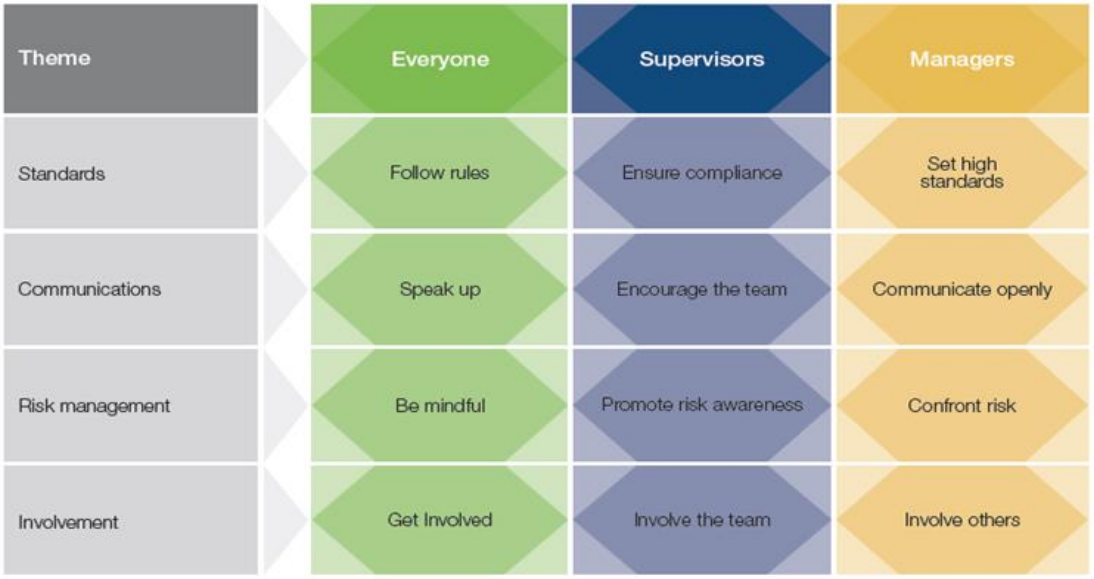


Figure 8-1: Behavioural Framework (excerpt from the 'Our HSE Behaviours Handout')

The framework describes the behaviours that are expected of 'Everyone', 'Supervisors' and 'Managers'. Four themes (that are critical to any strong HSE culture) are displayed. These are 'Standards', 'Communication', 'Risk Management' and 'Involvement'. These are the key elements of our strong safety culture which supports our vision.

There are twelve sets of behaviours across each of the three employee groups and the four themes, all of which are interdependent. Each of the twelve sets of behaviours are supported by a set of positive and negative statements that provide practical guidance on what is expected.

The HSE behaviours will be integrated within:

- **Inductions and Training –** to communicate the expected HSE Behaviours to staff, subcontractors and workforce
- **Toolbox and Pre-Starts –** to communicate expected HSE Behaviours to workplace members as they relate to a specific task or change in hazards/risks
- **Audits and reviews –** to identify a workplace's strengths.

The HSE Behavioural Plan provides the framework for incorporating the desired behaviours through all levels of project delivery.

8.2 Training

8.2.1 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 environmental requirements of the project. The Environment Manager (or delegate) will conduct the environmental component of the site inductions.

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

- Relevant details of the CEMP including purpose and objectives.
- Requirements of due diligence and duty of care.
- Legal Requirements and associated penalties for non-compliance.
- Working Hours
- Key conditions of licences, permits and approvals.

- Potential environmental emergencies on site and the emergency response procedures.
- Reporting and notification requirements for pollution and other environmental incidents (including penalties).
- Specific environmental management requirements and responsibilities.
- Environmental Aspects and Risks including Noise, Contamination, Soil and Water, Heritage, Air Quality, Visual Amenity, Biodiversity and ERSED.
- Information relating to the location of environmental constraints and unexpected finds.
- Key environmental issues and measures.

The induction content will be reviewed and approved by the heritage consultants prior to commencement of construction works likely to impact heritage items.

The induction will also include information about the surrounding community, the key stakeholders and any location specific sensitivities. The induction will provide information on what to do if approached by a member of the public or media, and an outline of Project personnel and sub-contractor responsibilities and obligations relating to the community.

An induction register will be maintained as a record of all environment inductions and kept on-site. The Environment Manager and/or Sustainability Lead may authorise amendments to the induction at any time. Possible reasons for changes to the induction may be Project modifications, legislative changes or amendments to this CEMP or related documentation.

Short-term visitors to site undertaking inspections / entering the site (such as regulators) will be required to undertake a visitors induction and be accompanied by inducted personnel at all times.

Temporary visitors to site for purposes such as deliveries will be required to be accompanied by inducted personnel at all times. The ER will review and approve the induction program (where required) and monitor implementation.

8.2.2 Toolbox talks, 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 also be tailored to specific environmental issues relevant to upcoming works and will include details of SEPs for relevant personnel. Relevant environmental issues include (but are not limited to):

- Erosion and sedimentation control
- Dewatering
- Contamination and spoil management
- Hours of work
- Emergency and spill response
- Heritage
- Noise and vibration management,
- Air quality, dust control and odour management, and
- Sustainability.

Toolbox talk 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. The proposed training matrix for the project is based on the risks below in Table 8-2:

Table 8-2: Proposed Training Matrix

Training	Senior Managers	General Superintendent	Engineers	Environmental Staff	Community Staff	Foreman	Leading Hands	Labourers	Subcontractors	Design Staff	Administrative Staff
Project Induction (including Environmental Aspects and Mitigation Measures)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Erosion and Sediment Control	Y	Y	Y	Y		Y	Y	Y	Y		
Pollution Incident Response (including fire response).	Y	Y	Y	Y	Y	Y	Y	Y	Y		

The Environment Manager (or delegate) will review and approve the training program and monitor implementation. Site awareness notes, in the form of posters, or similar will be developed and distributed to the General Superintendent, Project engineers, the Foreman and others with a responsibility for managing specific work locations or activities. This documentation may also be distributed to the broader workforce at daily pre-start meetings or made available in project offices/break facilities.

8.2.3 Daily Pre-Start Meetings

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 Site Superintendent (or delegate) will conduct 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. The daily pre-start is encouraged to be an interactive meeting, providing the workforce with an opportunity to provide comment on the management of site activities.

The environmental component of pre-starts will be determined by relevant person and environmental personnel and will include any environmental issues that could potentially be impacted by, or impact 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. Communication

9.1 Internal and External Communication

Clear lines of communication within JH is key to minimising environmental impacts and achieving continual improvements in environmental performance. This includes communication within the JH Environment and wider Project team.

The environmental team will meet regularly 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, AA, DPE, EPA and relevant ARTC personnel. The purpose of these meetings will be to communicate ongoing environmental performance and to identify any issues to be addressed.

In addition, environment team members will participate in regular meetings with Sydney Gateway to discuss upcoming works and any potential cumulative impacts from the works.

An environment team member will attend toolbox talks and training and will provide input into daily pre-starts, when required. This will provide an opportunity for the environment team members to communicate on environmental performance, to advise on any upcoming sensitive environmental matters for future work areas, receive feedback from on-site personnel and generally raise awareness on environmental matters. This process is further described in Section 8.2.

9.2 Liaison with EPA, government authorities or other relevant stakeholders

The JH Environment Manager (or delegate) has the responsibility to report on the ongoing environmental performance of the Project to ARTC, ER, AA, EPA, and other regulatory agencies. The JH Environment Manager (or delegate) will report regularly to ARTC on progress and any key environmental matters and to the EPA, as required.

The JH Environment Manager (or delegate) is the authorised contact person for communications with the client and the EPA on environmental matters.

9.3 Community liaison and/or notification

To ensure effective community engagement and communication, JH will establish a Communication Strategy which will include the implementation and coordination of community consultation and notifications.

The Community and Stakeholder Manager (or delegate) will aim to notify all noise and/or vibration affected sensitive receivers of the likely impact and duration of works, including emergency works when necessary, as required in accordance with the CoA and Project EPL.

Community engagement and notifications will include the use of a number of tools and platforms during construction, and will include:

- Notifications regarding work outside standard working hours and work that might impact residents, businesses and stakeholders.
- Email/SMS updates.
- Newsletters, information brochures and fact sheets to provide regular community and business updates on the progress of the construction program.
- Meetings with key stakeholders as needed.
- Alerts.
- Port Botany Duplication portal updates and enhancements.
- Site signage around construction and ancillary facilities.
- Media including media releases, social and advertisements.

A database of stakeholders and their interests / issues and contact details will be maintained throughout construction. Project contact cards will be issued to construction personnel to be used in the event a member of the public or media approaches them on-site.

Project staff will attend Project-specific community awareness training to ensure they respond to the community in a sensitive and appropriate manner if approached.

9.3.1 Complaints management

Community enquiries and complaints related to the construction activities will be referred to the 24-hour community information line (1300 550 402) and /or the community email address (botanyduplication@jhjg.com.au). The telephone number and email address will be included in community notifications issued to the local area prior to the commencement of construction as well as included on the project website (www.botanyduplication.com.au).

The telephone number, postal address and email address will be displayed on the site hoarding at each construction site area.

Complaints and inquiries received will be logged within the ARTC Consultation Manager Database. Response times for complaints/enquiries are presented in Table 9-1.

Table 9-1: Complaints/Enquiries Reporting Periods

Category	Acknowledge	Resolve and Record	Escalate (if required)
From the media or an elected representative of Local, State or Federal Parliament	Refer to ARTC within two hours		
Urgent enquiries and complaints, involving: ▪ Serious property damage that represents an immediate risk to people in the vicinity ▪ injury that requires immediate medical attention, or hospitalisation ▪ individuals in acute distress, especially arising from impacts relating to construction or maintenance works.	Within 15minutes	Within two hours	▪ Senior Project Manager ▪ ARTC Project Manager
Non-urgent complaints (by phone)	Within two hours	Within 24 hours	
Non-urgent complaints (by email or social media)	Within two hours	Within 24 hours	
Non-urgent complaints (by letter)	N/A	Within 24 hours	
Non-urgent enquiries (by phone or email)	Within one business day	Within five business days	
Social media comments or enquiries	N/A	Within 24 hours (to ARTC)	

The Environment Manager (or delegate) will apply an adaptive approach to ensure that corrective actions are applied in consultation with the appropriate construction staff to allow modifications and improvements in the management of any environmental issues resulting in community complaints.

Further details of the Complaints Management System are outlined in the Stakeholder Engagement and Communication Management Plan.

10. Incidents and Emergencies

10.1 Environmental Incidents

In the event of an environmental incident, the BRD Pollution Incident Reporting Management Plan (PIRMP) detailed in Appendix K will be implemented. The PIRMP includes requirements under the ARTC Incident Reporting Procedure (COR-PR-PR-012) and has been written in accordance with the requirements of the Project EPL 21678. The PIRMP details how incidents will be classified, tracked and investigated on the project. On the BRD Project, four classes of incidents will be applied:

- Class 1: Incidents which have high severity impacts on the community and/or environment and may have irreversible residual impacts.
- Class 2: Incidents which have moderate severity impacts on the community and/or environment (1-3 months duration) but are fully reversible with no residual impacts.
- Class 3: Incidents which have low severity impacts on the community and/or environment in the short term (<1 month duration) and are fully reversible with no residual impacts.
- Report Only: Pollution or degradation which is not related to JH activities.

Examples of environmental incidents with the corresponding Class are detailed in Table 10-1.

Table 10-1: Environmental Incident Classification.

Class	Environment Impact Type	Example Incident
1	Land Contamination	Major spill of hazardous materials (hydrocarbons, chemicals, effluent, contaminated materials) to land. • Persistent contamination of land; • Residual effects experienced offsite; • Extensive clean-up required;
2	Surface Water Contamination	Short-term/localised impact on water resources e.g. • Oil spill escapes into offsite flowing watercourse; • Uncontrolled discharge from sedimentation basin or site drainage system above allowable limits (eg pumping untreated water to receiving waters);
3	Noise and Vibration	Unplanned generation of, noise or vibration exceeding documented limits or controls and causing inconvenience or disruption to community and the environment e.g. • Concrete pour over-run without OOH Permit • Substantiated public complaint satisfactorily resolved at project level • 'Please Explain' received from Regulatory Authority satisfactorily, resolved at project level
Report Only	Waste	Incorrect storage, transport, treatment or disposal of waste not related to John Holland activities

The JH Event Notification and Reporting Matrix (included in the PIRMP) will be followed in the event of an environmental incident. In addition, JH will notify ARTC as soon as possible in the event of an environmental incident. Where an incident is deemed notifiable under the PRIMP JH will notify ARTC immediately (within 12 hours if outside construction hours) to enable ARTC to meet the requirements of CoA A37. An incident is deemed notifiable under the PRIMP if i it has the potential to result in material harm to the environment with remediation costs likely to be greater than $10,000..

JH will provide to ARTC all relevant information required in order for ARTC to provide the relevant notification to DPE in accordance with CoA A37 and A38.

10.1.1 Incident Investigation

Where required, investigations will be conducted and action plans established to ensure that the event does not occur again. Environmental investigations will include:

- identification of the cause, extent and responsibility of the incident
- identification and implementation of the necessary corrective action
- identification of the personnel responsible for carrying out the corrective action
- implementation or modification of controls necessary to avoid a repeat occurrence of the incident
- recording of any changes in written procedures required
- advising the relevant government agencies if any substantial pollution has occurred.

Where there are lessons learnt from the investigation or current procedures are identified as being ineffective, the CEMP, PIRMP and any other relevant plan or document will be revised to include the improved procedures or requirements.

10.2 Emergency Response

The Incident Management Plan (BRD-JHG-PM-0000-MPL-12022) details the emergency response actions to be taken on the project. The Plan includes:

- a list of key emergency personnel and responsibilities for emergency planning and response
- Response guidelines for various emergency situation and critical incidents
- Emergency response and evacuation processes including post incident considerations
- Reference information including emergency contact numbers, location maps etc.

The Project team will:

- prepare to respond by planning actions to prevent or mitigate adverse environmental impacts from emergency situations;
- respond to actual emergency situations;
- take action to prevent or mitigate the consequences of emergency situations, appropriate to the magnitude of the emergency and the potential environmental impact;
- periodically test the planned response actions, where practicable;
- periodically review and revise the process and planned response actions, in particular after the occurrence of emergency situations or tests; and
- provide relevant information and training related to emergency preparedness and response, as appropriate, to relevant interested parties, including persons working under its control.

The Project team shall maintain documented information to the extent necessary to have confidence that the process is carried out as planned.

Emergency planning and awareness training will be undertaken for the Project and will include identification of potential environmental emergencies, identification of the response procedures for those emergencies and testing of the emergency response procedures.

11. Monitoring Inspections and Auditing

Regular compliance activities, such as inspections, observations and monitoring will be undertaken throughout construction of the Project. Subcontractors' works will be included in inspections, observations and monitoring as appropriate. Copies of all environmental inspection reports prepared in accordance with this CEMP and sub-plans will be kept with the Project records and closed out within the agreed timeframes.

An Independent Environmental Audit Program has been prepared and is contained in Appendix L. This schedule has been prepared based on the Environmental Risk Analysis contained in Appendix C and includes both internal and independent audits. The Audit Program has been provided to DPE for approval in line with CoA A34.

11.1 Environmental Inspections

11.1.1Environmental Weekly Inspections

The Environment Team will undertake as a minimum weekly inspection of the work site to evaluate the effectiveness of environmental controls using the Environmental Inspection Checklist/online system. Additional inspections may be undertaken by other appropriate delegates as well as prior to and after adverse weather conditions (as applicable).

If any maintenance and/or deficiencies in environmental controls or in the standard of environmental performance are observed, they will be recorded on the checklist form. Records will also include details of any maintenance required, the nature of the deficiency, any actions required and an implementation priority. As a minimum the following aspects and conditions are to be assessed and documented:

- Weather conditions
- Site activities and approvals
- Waste management

- Erosion and sediment control measures
- Water quality (protection of drains, dewatering requirements)
- Air quality including dust
- Noise and vibration
- Flora and Fauna
- Heritage
- Waste management and disposal (using designated bins, concrete wash outs)
- Storage and use of hazardous materials and spill kits

All inspections will be uploaded/recorded in the on-line system Soteria along with any corresponding corrective action items or NCRs.

11.1.2 Environmental Representative and ARTC inspections

The ER and ARTC representatives will undertake regular inspections of works sites, and in particular critical activities throughout construction of the Project. The frequency will be assessed at the start of construction and will be agreed with the ER and ARTC based on the environmental risks associated with the construction activities being undertaken.

The Environment Manager (or authorised delegate) will participate in all ER and ARTC inspections, and records maintained. Deficiencies and required actions will be analysed and prioritised at the completion of the inspection and timeframes for implementation of corrective actions agreed.

11.1.3 Daily surveillance

Daily inspection will be carried out during Project activities that have a high inherent environmental risk, such as work near water, vegetation clearing activities or work near a sensitive environment. Daily surveillance will include a check of relevant environmental controls and resources required to ensure effective operation and maintenance. If deficiencies are noted, they can be rectified immediately.

11.2 Environmental monitoring

Monitoring will be undertaken to validate the impacts predicted for the Project, to measure the effectiveness of environmental controls and implementation of this CEMP, and to address approval requirements. The monitoring requirements for required aspects are included in the relevant environmental management sub plans.

Monitoring will be undertaken in accordance with relevant guidelines, or in accordance with the detail provided in the aspect-specific monitoring program or plan. In general terms each monitoring program will provide the following, where appropriate:

- details of baseline data (available or to be obtained and when);
- the parameters of the Project to be monitored;
- the frequency of monitoring to be undertaken;
- the location of monitoring;
- the timeframes and format for reporting of monitoring results;
- procedures to identify and implement additional mitigation measures where results of monitoring are unsatisfactory; and
- any consultation to be undertaken in relation to the monitoring programs.

A non-conformance may be issued by the Environment Manager (or delegate) in response, if required specifically by the monitoring program. The timing for any improvement will be agreed between the relevant Engineer/Superintendent and Environment and/or Sustainability Lead (or delegate) based on the level of risk (e.g. a significant risk will require immediate action).

All environmental monitoring equipment shall be maintained and calibrated according to manufacturer's specifications and appropriate records kept.

Specific environmental aspect monitoring including Noise and Vibration, Surface and Groundwater is detailed in the relevant CEMP sub-plans, Noise and Vibration Management Plan and Soil and Water Management Plan respectively.

11.3 Auditing

John Holland will conduct internal audits of the Project at planned intervals to provide information on whether the EMS conforms to:

- the requirements of the ISO 14001 (2015);
- is effectively implemented and maintained

JH will implement an internal audit programme on the Project, the programme will include the frequency, methods, responsibilities, planning requirements and reporting of its internal audits. When establishing the programme, consideration will be given to the EMS processes, changes affecting the Project and the results of previous audits. The CEMP shall be reviewed as a minimum every six months.

Prior to each audit, JH will:

a) define the audit criteria and scope for the audit

b) select auditors based on objectivity and the impartiality of the audit process

Following the audit, the Environment Manager is responsible for ensuring that the results of the audits are reported to the relevant management teams. Documentation will be retained on Sharepoint as evidence of the implementation of the audit programme and the audit results.

Independent audits

Auditing will also be undertaken by an independent environment auditor (independent to the Botany Rail Duplication Project) in accordance with the DPE Independent Audit Requirements (2018). An audit methodology will be provided prior to the audit and an Independent Audit Report prepared.

11.4 Environmental Non-conformance and Non-compliance

A non-conformance is a failure to comply with a requirement, standard or procedure such as this CEMP or associated documents. A non-compliance is the failure to adhere with an Act or its Regulations, including licences and approvals granted under an Act. For internal reporting purposes, reporting will occur in accordance with these definitions.

Environmental non-conformances/non-compliance may be identified through improvement opportunities, regular environmental inspections/monitoring, internal or external audits, complaints, community consultation, observations or through incident management. Any member of the Project team, the Environmental Representative, Acoustic Advisor, ARTC Representative and/or a public authority may raise a non-conformance, non-compliance or improvement opportunity.

Additionally, non-conformance/non-compliance activities may be stopped, if necessary, by the JH Environment Manager, Environmental Advisors or other Project personnel. The works will not re-commence until a corrective / preventative action has been closed out.

11.4.1 Corrective and Preventative Actions

Corrective actions will be recorded where an issue is identified and raised, the Environment Manager (or delegate) will liaise with the appropriate JH personnel or qualified person(s) to determine the most appropriate corrective action to implement.

Where assessed by Environment Manager (or delegate) to be appropriate, the corrective action will be actioned through a non-conformance report.

Preventive actions will be identified when environmental events, relevant incidents, complaints, audit findings and non-conformances are discussed at the regular coordination Meetings with

ARTC and the ER. Trends relating to environmental incidents, non-conformance and non-compliance findings may also be reviewed at this time to identify any reoccurring issues.

Any member of the JH team, including subcontractors can contribute and provide suggestion to any required or appropriate preventative action.

11.4.2 Non-Conformance/Non-Compliance Reporting and Close-out

Non-conformances and Noncompliance will be documented using the John Holland Procedure Non-conformance and Corrective Action Procedure (JH-MPR-SQE-007).

Where a non-conformance is raised as part of an audit or an incident or complaint investigation the audit, incident or complaint report may be used to close out the non-conformance and it will not be necessary to raise a separate non-conformance reporting process.

Details included in non-conformance/non-compliance reports will be specific to the event that has taken place and include the following:

- date raised and by whom
- description of the system deficiency (non-conformance)
- agreed actions including responsibilities and timing for completion
- cause and proposed remedy and action to prevent recurrence
- reinspection information
- date closed and by whom

Once agreed actions have been completed, the Environment Manager shall sign-off to signify close-out and provide a copy to ARTC and the ER. Any changes to operations or practices resulting from actions are to be communicated to employees and sub-constructors as required. A register of all non-conformances raised during delivery of the Works will be maintained on SharePoint.

12 Environmental Review

12.1 Environmental Records

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

- Monitoring, inspection and compliance reports/records.
- Correspondence with public authorities.
- Induction and training records.
- Reports on environmental incidents, other environmental non-conformances, complaints and follow-up action.
- Waste Tracking Records and dockets.
- Community engagement information.
- Minutes of CEMP and EMS review meetings and evidence of any action taken.
- CEMP and Sub Plans.
- Site Environmental Plans (SEPs)
- Environmental audit reports.

All environmental management documents are subject to ongoing review and continual improvement. This includes times of change to scheduled activities or to legislative or licensing requirements.

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

12.2 Document control

JH, or ARTC where relevant, will coordinate the preparation, review and distribution, as appropriate, of the environmental documents and records listed in Section 12.1. During the Project,

the environmental documents and records will be stored electronically on the Sharepoint document control system.

JH will implement a document control procedure to control the flow of documents internally and between ARTC, stakeholders and subcontractors.

The procedure will ensure that documentation is:

- Developed, reviewed and approved prior to issue.
- Issued for use.
- Controlled and stored for the legally required timeframe.
- Removed from use when superseded or obsolete.
- Archived.

The Document Register will be maintained on the Project SharePoint system.

12.3 Environmental Reporting

Prior to, during and following construction, various reports will be prepared to fulfil ARTC and other reporting needs, and requirements under the Project approvals. Table 12-1 sets out the reporting requirements applicable to the Project, timing of the reporting, who is responsible for managing preparation of the reports and the intended recipient(s).

Additional reporting may be necessary as the works progress. In such a circumstance, Table 12-1 will be amended to reflect these changes.

Table 12-1 Reporting requirements

No.	Report	Requirement	Timing	Responsibility	Recipient
1	Monthly Environmental report	For incorporation in Project Monthly Reports including environmental statistics (i.e. incidents, regulatory action, complaints on environmental issues), regulatory and authority considerations, monitoring program performance and key environmental issues. Reporting in accordance with Appendix TSWD 27	Within 10 working days of the end of each calendar month.	JH Environment Manager	ARTC /Independent Verifier
3	EPL annual returns	Report on compliance with EPL.	Within 60 days of the anniversary of the EPL (5 July 2023).	JH Environment Manager	EPA
4	ER inspection reports (including input from the AA)	Report of site environmental performance following routine inspections.	Fortnightly (as determined by the ER)	Environmental Representative and Acoustic Advisor	ARTC /DPE
5	ER and AA monthly reports	Reports of environmental performance during the calendar month.	Monthly	Environmental Representative and Acoustic Advisor	ARTC /DPE

No.	Report	Requirement	Timing	Responsibility	Recipient
6	Environmental risk assessment	Conducted for each construction stage, Project changes and significant issues.	Prior to construction during development of CEMP and as required thereafter.	JH Environment Manager	ARTC
7	Monitoring Program results	Report on monitoring data recorded and potential exceedances against criteria.	As required	JH Environment Manager Construction Manager Environmental Advisors	ARTC
8	Compliance Tracking Register	Report on project compliance with the CoA and REMMs	Quarterly	JH Environment Manager Construction Manager	ARTC

12.4 Management review

The Project shall continually improve the suitability, adequacy and effectiveness of the John Holland EMS to enhance environmental performance. As part of this continual improvement process, John Holland Management conduct yearly reviews of the John Holland EMS, to ensure its continuing suitability, adequacy and effectiveness. When the EMS review is complete an update of system improvements is communicated via the IMS to all projects and employees.

The management review shall include consideration of the status of actions from previous as well as changes in:

- External and internal issues that are relevant to the environmental management system;
- Needs and expectations of interested parties, including compliance obligations;
- Significant environmental aspects;
- Risks and opportunities;
- Extent to which environmental objectives have been achieved;
- Environmental performance, including trends in non-conformance/corrective actions and monitoring and measurement results;
- Compliance obligations;
- Audit results;
- Resourcing;
- Relevant communication(s) from interested parties, including complaints; Opportunities for continual improvement

An bi-annual management review will be undertaken with ARTC and JH, and will aim to:

- Identify of areas of opportunity for improved environmental performance.
- Analyse the causes of nonconformities and deficiencies, including those identified in environment inspections and audits.
- Verify of the effectiveness of corrective and preventative actions.
- Highlight any changes in procedures resulting from process improvement.

The project shall retain documented information as evidence of the results of management reviews.

Where the management review identifies aspects of the CEMP that should be amended, this will be undertaken before the next management review, where appropriate. Any amendments to the

CEMP or associated documentation identified as being necessary to avoid non-compliance issues or are in response to key environmental risks will be prioritised to be undertaken as soon as practicable. In addition to during Management Review, the CEMP will be reviewed when the following situations arise:

- Client recommendations for changes (particularly following initial review)
- Changes to the Company's standard system
- Opportunities for improvement or deficiencies in the project system are identified.
- Following an audit of the system or the occurrence of significant incidents or non-conformances
- As a minimum every 6 months.

Appendix A. Compliance Matrix

Reference	Safeguards and mitigation measures	Location in document
CAH1	An unexpected finds procedure will be prepared and include requirements for: • protecting any unexpected finds (including Aboriginal heritage items and human skeletal remains) encountered during construction activities • procedures to manage reporting and investigation when unexpected finds are encountered.	Appendix F
CAH2	If suspected human skeletal remains are uncovered at any time throughout undertaking the proposed works, the unexpected finds procedure will be implemented.	Appendix F
CAQ1	Dust suppression will be undertaken as required using water sprays, water carts or other media on: • unpaved work areas subject to traffic or wind • sand, spoil and aggregate stockpiles • during the loading and unloading of dust generating materials. As a minimum, level 1 watering should be undertaken on general construction areas and level 2 watering should be undertaken on heavy construction areas. Further discussion including a description of construction work classification is provided in section 5.2 of Technical Report 3 – Air Quality Impact Assessment	Appendix D (ECP 03 – Section 3.5)
CAQ2	Visual dust monitoring will be performed on a routine basis, and all staff will be trained to look out for visible dust leaving the worksite in the direction of sensitive receptors. If the works are creating visible dust plumes, the works will be modified or stopped until the dust hazard is reduced to an acceptable level. If complaints are received relating to dust from construction works, works will be reviewed to identify opportunities to reduce potential impacts from dust. In the instance of ongoing dust issues, or complaints, a short-term dust monitoring device will be installed in the relevant area which may be adjacent to a sensitive receptor near any longer term construction area.	Appendix D (ECP 03 – Section 3.5)
CAQ3	Construction vehicles with potential for loss of loads (such as dust or litter) will be covered when using public roads.	Appendix D (ECP 03 – Section 3.5)
CAQ4	Plant and equipment will be maintained in good condition to minimise spills and air emissions that may cause air quality impacts	Appendix D (ECP 03 – Section 3.5)
CAQ5	The size of stockpiles will be minimised where possible and located as far as practicable from sensitive receptors	Appendix D (ECP 03 – Section 3.5)
CAQ6	Identified areas which may have elevated PFAS/PFOS concentrations are limited to small areas shown in the Technical Report 5 – Contamination Assessment (WSP 2019)). This report includes specific management measures. Dust management measures are considered sufficient to manage dust from areas potentially containing PFAS however high risk areas will be identified in the site induction so all personnel are aware of the importance of dust management in these areas. Dust management measures will prevent visible dust from potentially contaminated areas from leaving the construction site boundary	Appendix D (ECP 03 – Section 3.5), Appendix C
CBD1	If additional vegetation is identified to be impacted, an ecologist will undertake further assessment for impact and the need for offsetting in accordance with the legislation, prior to clearing	Appendix D (ECP 05 – Section 5.6)
CBD2	Protocols to prevent introduction or spread of chytrid fungus will be detailed in the relevant management plan and implemented following the DPE Hygiene protocol for the control of disease in frogs (DECC, 2008c)	Not Applicable – LIWA 008
CBD3	The project environmental induction will include information on the ecological values of the study area, protection measures to be implemented to protect biodiversity and penalties for breaches.	Section 8.2.1
CBD4	Disturbance of vegetation will be limited to the minimum necessary to construct works. The contractor will design the layout of the work areas to locate infrastructure, where practicable, to previously cleared areas or areas of exotic vegetation to minimise or avoid impacts on native vegetation (and particularly EECs). Equipment storage and stockpiling of resources will be restricted to designated areas in cleared land.	Appendix D (ECP 05 – Section 5.6)
CBD5	A trained ecologist will undertake pre-clearing surveys and be present during the clearing of native vegetation or removal of potential fauna habitat during construction where necessary to avoid impacts on resident fauna as far as is practicable. Pre-clearing surveys will include: • inspections of native vegetation for resident fauna and/or nests or other signs of fauna occupancy • inspections of bridges for roosting bats • pre-clearing surveys for the Green and Golden Bell Frog at Mill Stream as a precaution • capture and relocation or captive rearing of less mobile fauna (such as nestling birds) by a trained fauna handler and with assistance from Wildlife Information Rescue and Education Service (WIRES) as required	Appendix D (ECP 05 – Section 5.6 and 5.9)
CBD6	Where the project site adjoins native vegetation, the limits of clearing will be marked and temporary fencing installed and maintained around the vegetated areas prior to the commencement of construction activities to avoid unnecessary vegetation and habitat removal.	Appendix D (ECP 05 – Section 5.6)
CBD7	Management and disposal of the weeds, including the priority weeds, will be conducted in accordance with the Biosecurity Act 2015 and the NSW Weed Control Handbook (DPI 2018c). Vehicles and other equipment to be used within the rail corridor will be cleaned to minimise seeds and plant material entering the study area to prevent the introduction of further exotic plant species or disease.	Appendix D (ECP 05 – Section 5.7)

CBD8	Revegetation of riparian areas along Mill Stream, Mill Pond and New Pond following construction will be undertaken by a bush regeneration contractor. Disturbed areas will be stabilised as soon as possible following construction and locally endemic species typical of Swamp Oak swamp forest and Coastal freshwater wetlands will be used to revegetate these disturbed riparian areas. The methodology for revegetation, including a suitable plant species list, will be included in the CEMP. A minimum 12-month maintenance period would follow the revegetation of Mill Stream riparian areas and any other disturbed areas.	Appendix D (ECP 05 – Section 5.6)
CCT1	A remediation action plan (RAP) will be prepared for Area 1 in accordance with the National Environmental Protection (Assessment of Site Contamination) Measure (NEPM 2013) prior to placement of the asbestos capping layer. Remediation in Area 1 will be undertaken in accordance with the endorsed RAP. Following this, a validation report will be prepared by a suitably qualified environmental consultant to validate the suitability of the project site for its proposed use. Installation of the capping layer will be done under the supervision of a suitably qualified and experienced consultant, as defined in Schedule B9 of the NEPM. The final elevationof residual contaminated soils will be surveyed prior to the installation of the marking layer and capping layers. Final levels should also be surveyed and included in the SWMP and ARTC asbestos register.	Soil and Water Management Plan
CCT2	West of Robey Street within Area 2, existing investigations will be supplemented with additional sampling using a test pit or trenching method in accordance with NEPM 2013 and WA Department of Health (WA-DoH) 2009, Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia. If enabling works in this area are undertaken prior to additional sampling, ACM will be assumed to be present and works will be supervised by an appropriately licensed contractor. This will be specified in site EMPs for the enabling works.	Soil and Water Management Plan
CCT3	An acid sulfate soils management plan (ASSMP) will be developed prior to start of enabling works in accordance with the ASSMAC (1998) Acid Sulfate Soils Manual and included in the SWMP. ASS encountered during construction will be managed in accordance the ASSMP	Soil and Water Management Plan
CCT4	An asbestos management plan (AMP) will be prepared prior to start of enabling works in accordance with NSW EPA guidelines (including waste guidelines), SafeWork NSW 2014, Managing Asbestos in or on Soil and relevant industry codes of practice. This AMP will be included in the SWMP.	Soil and Water Management Plan
CCT5	An emu pick involving the systematic manual collection of identified asbestos surface fragments will be undertaken prior to soil disturbance in Area 1 and the section west of Robey Street in Area 2, to remove ACM fragments from the site surface. A clearance certificate will be obtained from a licensed asbestos assessor	Soil and Water Management Plan
CCT7	Procedures to store, handle and use materials and equipment appropriately to prevent spills will be prepared and implemented during construction, and included in the SWMP. Immediately contain and clean up leakage of fuels, oils, chemicals and other hazardous liquids in accordance with the Safety Data Sheet and ARTC's NSW Pollution Incident Response Management Plan to prevent migration of contaminants to other parts of the site	Soil and Water Management Plan, Appendix C
CCT8	Employ stockpile management procedures as per ARTC's Standard Environmental Management Measures for segregating soil and preventing cross-contamination of clean soil with contaminated soil. These will be documented in the SWMP.	Soil and Water Management Plan, Appendix C
CCT9	ACM impacted soil will be handled and managed in accordance with the AMP at all times during construction. Areas that are designated as ACM contaminated areas will be clearly fenced off and suitable warning signs posted prior to soil disturbance in that area. Hygiene facilities will be provided incorporating a high standard of washing facilities and storage area for contaminated clothing/footwear. These areas will only be accessible to authorised personnel and work permitted only under controlled/supervised conditions by appropriately qualified/licensed personnel.	Soil and Water Management Plan, Appendix C
CCT10	An unexpected finds procedure will be prepared prior to commencement of enabling works and included as part of the SWMP. It will identify the process to follow in the event that indicators of contamination are encountered during construction (such as odours, ACM or visually contaminated materials).	Appendix F
CFL1	Plan, implement and maintain measures, which are aimed at: • intercepting flow from areas upstream of the project and diverting it in a controlled manner whether through or around the construction sites • implementing construction practices that minimise the potential for scour through stabilisation of disturbed surfaces.	Soil and Water Management Plan
CFL2	Spoil stockpiles will need to be located in areas which are not subject to frequent inundation by floodwater and ideally outside the 1% AEP flood extent. The CEMP will define the flood immunity criteria for stockpiles proposed to be located in areas that are inundated during a 1% AEP event. These criteria will be based on the duration of stockpiling operations, the type of material stored, the nature of the receiving drainage lines and also the extent to which the stockpile will impact flooding conditions in adjacent areas.	Soil and Water Management Plan
CFL3	As a minimum, site facilities are to be located outside high flood hazard areas based on a 1% AEP flood and ideally outside the 1% AEP flood extent. For site facilities located within the floodplain, the CEMP is to identify how risks to personal safety and damage to construction facilities and equipment will be managed. The CEMP will need to include details of: • the procedure to monitor accurate and timely weather data, and disseminate warnings to construction personnel of impending flood producing rain • an evacuation plan for construction personnel should a severe weather warning be issued.	Soil and Water Management Plan

CFL4	The CEMP will need to include details and procedures to manage the potential for proposed construction activities to adversely impact on flood behaviour in adjacent development. A more detailed assessment of the impact that construction activities will have on flood behaviour, as well as the scope of measures which will be required to mitigate those impacts, will need to be undertaken during the detailed design phase, with the benefit of more refined construction plans and details by the preferred construction contractor. Subject to the outcomes of further design development and flood assessment during the detailed design phase, a floor level survey may need to be undertaken of affected properties (i.e. in properties where there is a potential increase in flood levels) to determine whether construction activities will increase flood damages in adjacent development and if mitigation measures are required. The layout of the construction compounds, material storage areas, as well as temporary crane pads and temporary piling platforms will need to be designed to: • limit the extent of works located in floodway areas • divert overland flow either through or around work areas in a controlled manner • minimise adverse impacts on flood behaviour in adjacent development. Measures to manage residual flood impacts may include: • staging construction to limit the extent and duration of temporary works on the floodplain • ensuring construction equipment and materials are removed from floodplain areas at the completion of each work activity or should a weather warning be issued of impending flood producing rain • providing temporary flood protection to properties identified as being at risk of adverse flood impacts during any stage of construction of the project • developing flood emergency response procedures to remove temporary works during periods of heavy rainfall.	Soil and Water Management Plan
CHS1	The site EMPs will include a section specific to utility management and utility protection.	Section 2.2
CHS2	Construction-related risks related to public safety from general construction activities (listed in section 21.3.1) will be incorporated into the relevant management plans with measures to minimise and manage risks	Appendix D, Soil and Water Management Plan, Traffic Management Plan, Noise and Vibration Management Plan
CHS3	The management of all chemicals and detonators used during construction will comply with the relevant Australian Standard.	Appendix C
CHS4	The relevant management plan will include a review of the required dangerous goods quantities to be used and stored during construction to validate Applying SEPP 33 (DoP 2011a) screening assessment. If the Applying SEPP 33 (DoP 2011a) thresholds levels are not exceeded, no further work is needed. If the Applying SEPP 33 (DoP 2011a) thresholds are exceeded, a preliminary hazard analysis will be completed and provided to the DPE for reference	Appendix C
CHS5	Management plans will be developed and implemented for the project to ensure that the necessary approvals are sought, particularly for the use of cranes. Use of cranes will comply with National Airports Safeguarding Framework Guideline F (DIRDC, n.d.) Where necessary, use of cranes that will infringe the obstacle limitation surface will be limited to curfew hours and/or permits obtained from Sydney Airport.	Section 6.4.3
CHS6	Management plans will be developed and implemented for the project to ensure the lights proposed for use comply with CASA Manual of Standards 139 section 9.21 and National Airports Safeguarding Framework Guideline E (DIRDC, n.d.).	Appendix D (ECP 02 – Section 2.5)
CHS7	Management plans will include measures to minimise waste attracting wildlife, particularly birdlife. These will include, but not be limited to: • food waste being stored in covered bin • waste being regularly removed from site.	Appendix D (ECP 04 – Section 4.5)
CLP1	The removal, and reinstatement of billboards will be undertaken in consultation with land owners and billboard owners	Appendix D (ECP02 – Section 2.5)
CLP2	As a priority, billboards will be replaced like for like. If replacement and relocation are not available, the affected parties will be appropriately compensated under the Land Acquisition (Just Terms Compensation) Act 1991.	Appendix D (ECP02 – Section 2.5)
CLP3	Consultation will be carried throughout construction with the surrounding businesses, the local community and key stakeholders including Bayside Local Council, Sydney Airport and other potentially impacted stakeholders to advise them in advance of proposed works and any temporary access arrangements that may be required.	Section 3.3, 9.2, 9.3 and Appendix E
CLP4	Prior to any impact on access, alternative arrangements will be negotiated with the affected parties in order to enable continued access and to minimise disruption as much as reasonably possible.	Traffic Management Plan, Appendix E
CLP5	Affected property owners and businesses will be provided with advanced notification of relevant project schedules, construction works and changes to access arrangements.	Section 9.2 and 9.3
CLV1	Shade cloth screening on site boundary fencing will be provided where works or compound sites are being undertaken in close proximity to residential areas to screen street level views into the construction site, such as: • Myrtle Street • Bay Street • Ellis Street • Banksia to Morgan Street	Appendix D (ECP 02 – Section 2.5)

CLV2	Temporary lighting required during the construction period will be sited and designed to avoid light spill into residential properties. Particular consideration will be given to works near Baxter Road, McBurney Avenue and between Myrtle Street and Stephen Road which are located close to residential properties and hotels.	Appendix D (ECP 02 – Section 2.5)
CNH1	For the Botany Water Reserves (also known as Botany Wetlands or Botany Swamps), the following site specific management measures will be implemented: • establishment of fenced exclusion zones around the item's SHR curtilage to prevent inadvertent impacts to the item prior to, and during construction of the project • engagement of an arborist to ensure significant plant species are not impacted during the construction phase if impacts outside of the project footprint are proposed • archaeological monitoring in areas assessed as containing low potential for Phase 1 archaeological remains where subsurface impacts are proposed. This would be carried out in accordance with recommendations set out in Section 11.5 of Technical Report 9 – Statement of Heritage Impact.	Appendix D (ECP 01 – Section 1.6)
CNH2	The CEMP will identify measures to specifically minimise the potential impact to the bridge during the construction phase of the project. This may include establishment of protective barriers or pads around elements of the bridge to ensure impacts to fabric are avoided	Appendix C and Appendix D (ECP 01 – Section 1.6)
CNH3	The CEMP will include measures to prevent inadvertent impacts to fabric within the curtilage of the Sydney Airport Group south of Qantas Drive. This may include establishment of an exclusion zone around the LEP curtilage for the item. The inclusion of the exclusion zone in the ECMs would be appropriate.	Appendix C and Appendix D (ECP 01 – Section 1.6)
CNH4	For the potential archaeological remains shown in Figure 15.4, archaeological monitoring or testing will be undertaken (where required) in accordance with recommendations set out in Section 11.5 of Technical Report 9 – Statement of Heritage Impact	Appendix D (ECP 01 – Section 1.6)
CNH7	The location of subsurface excavations will be designed, where possible to avoid areas containing low or moderate potential for State and locally significant Phase 1 and 2 resources.	Appendix D (ECP 01 – Section 1.6)
CNH8	The project environmental induction will include making contractors aware of areas of high/moderate archaeological potential, areas containing highly significant fabric, relevant strategies to minimise potential impacts on archaeological remains and heritage fabric, information regarding the identification and management of unexpected archaeological and heritage finds and their obligations under NSW heritage legislation and the conditions of approval for the project. The induction will be provided to relevant contractors and subcontractors and its preparation overseen and approved by a suitably qualified heritage professional.	Section 5.3 and Appendix D (ECP 01 – Section 1.6)
CNH9	An Unexpected Finds Procedure will be established and implemented in the case of unexpected structural and archaeological finds	Appendix F
CNH10	The Heritage Council must be notified if a relic is uncovered during construction	Appendix F
CNV1	Site EMPs will be prepared before any enabling works begin. Specific to the activities proposed, these plans will include: • identification of nearby sensitive receivers • description of works, construction equipment and hours of work • mitigation measures that apply to the works proposed • criteria for the project and relevant licence and approval conditions • requirements for noise and vibration monitoring • details of how community consultation will be completed in accordance with the community and stakeholder engagement plan • details of how respite will be applied where ongoing high impacts are seen at certain receivers. The requirement for enabling works out of hours will be described in the site EMPs to be approved by the independent Environmental Representative (ER). The Site EMPs will detail: • the proposed activities and predict the potential noise impact against the relevant noise and vibration criteria • the relevant mitigation measures, including consideration of sleep disturbance and respite periods • the required community notification specific to the activities proposed.	Enabling Works/Site EMP
CNV3	Community consultation measures will be included in the CNVMP and community and stakeholder engagement plan, including periodic notification (monthly letterbox drop or equivalent) detailing all upcoming construction activities delivered to impacted sensitive receivers at least 14 days prior to commencement of relevant works.	Section 9.2, 9.3
CNV5	Where feasible and reasonable, construction will be carried out during Standard Construction Hours. If it is not possible to restrict the works to daytime, then they will be scheduled so noise intensive equipment is not used after 11:00 pm, where possible, noting that there is a requirement for many of the works to be completed during possessions, and restrictions on working hours during these periods are generally not feasible.	Noise and Vibration Management Plan
CNV6	Where noise intensive equipment is to be used near sensitive receivers, the works will be scheduled for Standard Construction Hours, where possible. If it is not possible to restrict the works to daytime then they will be scheduled so noise intensive equipment is not used after 11:00 pm, where feasible	Noise and Vibration Management Plan
CNV7	Monitoring will be carried out at the start of noise and vibration intensive activities which are near to receivers to confirm that actual levels are consistent with the predictions. Where mitigation measures have been specified, the monitoring results should confirm their effectiveness.	Noise and Vibration Management Plan

CNV10	Noise impacts are predicted for the compound between Banksia Street and Stephen Road due to the proximity of the nearest receivers. The use of this compound site during out of hours works associated with the road closures at Robey Street and O'Riordan Street will be avoided as far as practicable.	Noise and Vibration Management Plan
CNV11	Where works are required within the minimum working distances and considered likely to exceed the cosmetic damage criteria: • different construction methods with lower source vibration levels will be investigated and implemented, where feasible • attended vibration measurements will be undertaken at the start of the works to determine actual vibration levels at the item. Works will be ceased if the monitoring indicates vibration levels are likely to, or do, exceed the relevant criteria	Noise and Vibration Management Plan
CNV12	Building condition surveys will be completed before and after the works where buildings or structures, including heritage items, are within the minimum working distances and considered likely to exceed the cosmetic damage criteria during the use of vibration intensive equipment. Appropriate criteria will be confirmed for each item before the works begin, based on the surveys	Noise and Vibration Management Plan
CNV13	The potential human comfort impacts and requirement for vibration intensive works will be reviewed as the project progresses. Where receivers are within the human comfort minimum working distances, the impacts will be managed with the procedures defined in the CNVMP	Noise and Vibration Management Plan
CNV14	The requirement for vibration intensive works near heritage items will be reviewed during detailed construction planning. Where heritage items are considered potentially sensitive to vibration impacts, the more stringent DIN 4150 Group 3 guideline values will be applied and monitoring will be completed when vibration intensive works are in close proximity. Condition surveys will be completed before and after the works where heritage items are within the minimum working distances and considered likely to exceed the cosmetic damage criteria.	Noise and Vibration Management Plan
CNV15	The likelihood of cumulative or consecutive construction noise impacts will be reviewed during detailed design when detailed construction schedules are available. Coordination will occur between the various projects to minimise concurrent works (particularly concurrent out of hours work) in the same areas, where possible. Specific additional management and mitigation measures designed to address potential consecutive impacts will be developed and used to minimise the impacts as far as practicable, in consultation with the affected community	Noise and Vibration Management Plan
CNV16	All employees, contractors and subcontractors will receive an environmental induction. The induction must at least include: • all relevant project specific and standard noise and vibration mitigation measures • relevant licence and approval conditions • permissible hours of work • any limitations on noise generating activities with special audible characteristics • location of nearest sensitive receivers • construction employee parking areas • designated loading/unloading areas and procedures • site opening/closing times (including deliveries) • environmental incident procedures	Section 8.2.1
CNV17	No swearing or unnecessary shouting or loud stereos/radios/phone calls on speaker on site. No dropping of materials from height, throwing of metal items and slamming of doors. No unnecessary idling of vehicles near to receivers.	Appendix C
CNV18	Use quieter and less vibration emitting construction methods where feasible and reasonable. For example, when piling is required, bored pile rather than impact-driven piles will minimise noise and vibration impacts	Appendix C
CNV19	Simultaneous operation of noisy plant within discernible range of a sensitive receiver will be avoided. The offset distance between noisy plant and adjacent sensitive receivers will be maximised. Plant used intermittently will be throttled down or shut down. Noise-emitting plant will be directed away from sensitive receivers, where possible.	Appendix C
CNV20	Plan traffic flow, parking and loading/unloading areas to minimise reversing movements within the site	Appendix C
CNV21	Non-tonal reversing beepers (or an equivalent mechanism) will be fitted and used on all construction vehicles and mobile plant regularly used on site as well as any out of hours work.	Appendix C
CNV22	Loading and unloading of materials/deliveries will occur as far as possible from sensitive receivers. Site access points and roads will be selected as far as possible away from sensitive receivers. Dedicated loading/unloading areas will be shielded if close to sensitive receivers	Appendix C
CNV23	Where possible, noise from mobile plant will be reduced through additional: • residential grade mufflers • damped hammers such as 'City' Model Rammer Hammers • Air Parking brake engagement is silenced.	Appendix C
CNV24	Stationary noise sources will be enclosed or shielded while ensuring that the occupational health and safety of workers is maintained. Appendix F of AS 2436: 1981 lists materials suitable for shielding	Appendix C
CNV26	Structures, such as site sheds, will be used to shield residential receivers from noise (where practicable), noting that upper floors of multi-storey buildings will be unlikely to benefit.	Appendix C
CRW1	Where feasible and practicable, construction material will be sourced from within the Sydney region.	Appendix D (ECP 04 – Section 4.5.5.3)

CRW2	Site EMPs will be prepared before any enabling works begin. The Site EMPs will detail how waste will be managed during enabling works activities that could generate significant waste e.g. billboard removal and vegetation clearance. The Site EMPs will include: • all key early and enabling works waste streams • classification of waste streams in accordance with the Waste Classification Guidelines (EPA, 2014a) • applicable resource recovery orders and exemptions including the existing 'The Australian Rail Track Corporation excavated material order 2019' and 'The Australian Rail Track Corporation excavated material exemption 2019' • waste identification, handling and segregation procedures • proposed waste reuse, recovery and recycling and disposal measures • waste tracking, record keeping and reporting requirements • key sources of construction related resource use • energy conservation and energy efficiency practices to be implemented	Appendix D (ECP 04 – Section 4.5)
CRW3	The CEMP will consider management of all construction waste including spoil in accordance with the waste management hierarchy. The CEMP will include: • all key construction waste streams • classification of waste streams in accordance with the Waste Classification Guidelines (EPA, 2014a) • applicable resource recovery orders and exemptions including the existing 'The Australian Rail Track Corporation excavated material order 2019' and 'The Australian Rail Track Corporation excavated material exemption 2019' • waste identification, handling and segregation procedures • spoil disposal locations, onsite spoil management and offsite transport protocols • proposed waste reuse, recovery and recycling and disposal measures • waste tracking, record keeping and reporting requirements • key sources of construction related resource use • energy conservation and energy efficiency practices to be implemented	Appendix D (ECP04)
CRW4	Construction waste will be minimised by accurately calculating materials brought to the site and limiting materials packaging.	Appendix C and Appendix D (ECP 04 – Section 4.5)
CRW5	All waste will be assessed, classified, managed and disposed of in accordance with the Waste Classification Guidelines (EPA, 2014a)	Appendix D (ECP 04 – Section 4.5.2)
CRW6	The size of stockpiles will be determined by material quantity requirements, space availability, stockpile stability and safety, indicative volumes and restrictions. Stockpile siting and management will include the following parameters: • will be no higher than three metres • will be sited as far as practical from sensitive receivers and where possible equipment i.e. site compound buildings, sited between the stockpile and receiver • will be located in areas which are not subject to frequent inundation by floodwater and ideally outside the 1% AEP flood extent • will not be sited next to schools or day care facilities • will be temporary and material not needed for ongoing maintenance will be removed at completion of construction	Appendix D (ECP 04 – Section 4.5)
CSO1	The community will be informed about changes to amenity and access through the community and stakeholder engagement plan. The plan will include: • communication with residents to provide an overview of the project, and the likely nature, extent and duration of amenity and access changes as a result of construction. Particular attention will be given to ensuring any vulnerable groups are appropriately targeted, these may include families with children, people with need for assistance, older people, people with disability, people with mobility difficulties or medical conditions, and culturally and linguistically diverse people in Mascot • communication of measures to minimise construction fatigue experienced by residents, businesses and general community members (such as construction respite periods associated with out of standard construction hours works, if required) • communication of the complaints and enquiry procedure through which community members can contact the project to raise any concerns regarding amenity and access changes, such as the ARTC Enviroline.	Appendix C and Section 9.1, 9.2, 9.3
CSO2	Targeted communication on measures to minimise impacts on amenity and access will be carried out with the following stakeholders: • Bayside Council about timing of the most noise intensive works and changed traffic conditions that may affect public open space areas and active transport routes within the LGA • community infrastructure and accommodation facilities (hotels) if direct impacts are identified such as temporary changes to access or utility services.	Appendix C and Section 3.3, 9.1, 9.2, 9.3
CTT2	Provide suitably designed construction site access which will consider: • road design guidelines • visible temporary regulatory, warning and guide signs • use of accredited traffic controllers where appropriate • provision of deceleration lanes at accesses abutting highly trafficked roads	Appendix C and Traffic Management Plan
CTT3	• Administrative controls to limit truck activities during peak periods. • Implement radio communication and designated truck idling areas to minimise impact of truck queuing on public roads. • Temporary traffic controls.	Appendix C and Traffic Management Plan

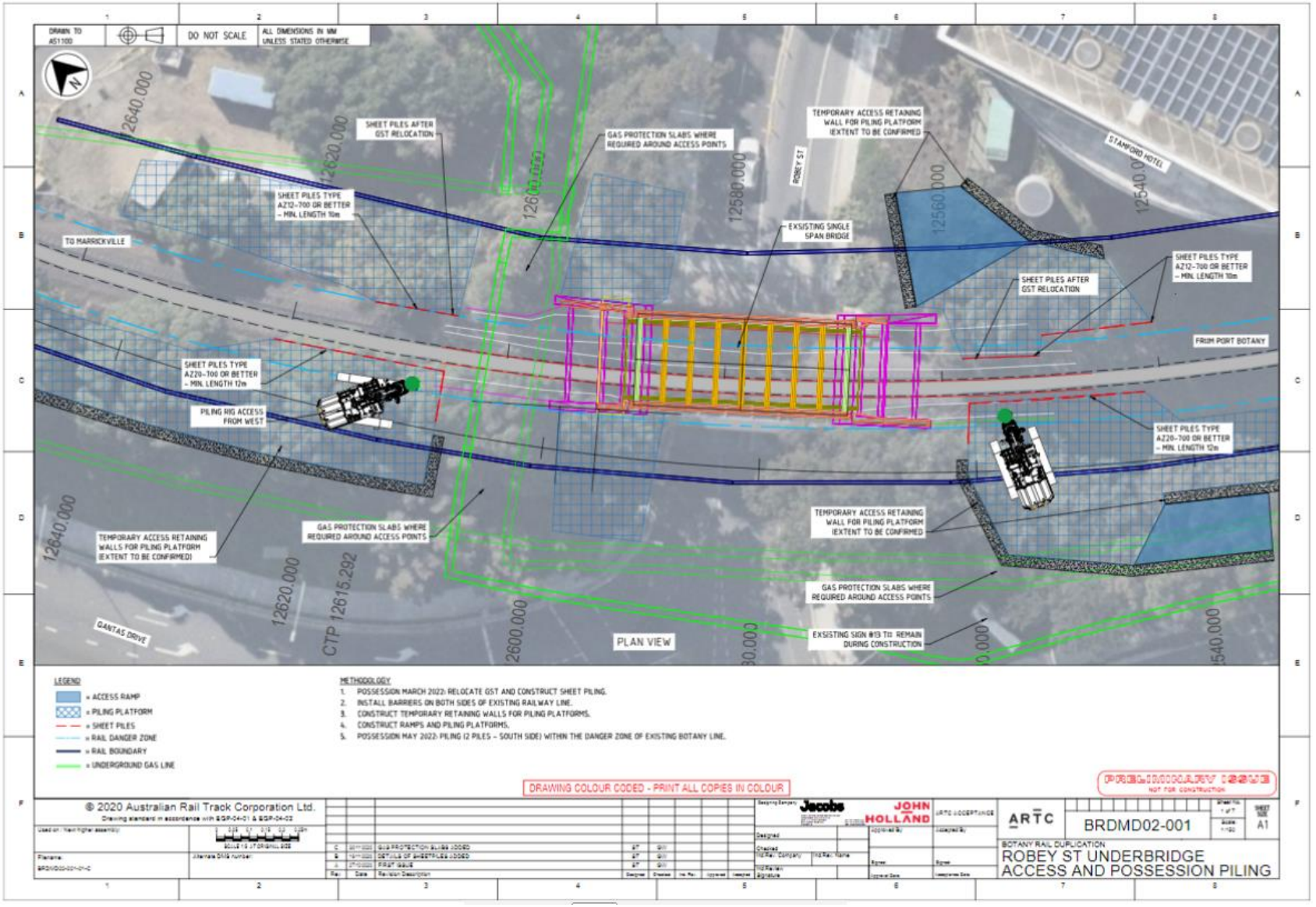
CTT4	• Maximise parking at each site and compound. • Encourage carpooling/cycling/public transport. • Providing shuttle buses between off-site parking locations. • Providing shuttle buses between the two main on-site compounds and smaller construction compounds. • Develop a protocol to review the approach to management of worker parking in the event complaints are received relating to workers using on-street parking	Appendix C and Traffic Management Plan
CWQ2	Leakage of fuels, oils, chemicals and other hazardous liquids will be immediately cleaned up in accordance with the Safety Data Sheet and relevant emergency response procedures.	Appendix C and Soil and Water Management Plan
CWQ3	Adequately stocked spill kits will be readily accessible to site personnel during all refuelling activities	Appendix C and Soil and Water Management Plan
CWQ4	Construction plant and equipment will be regularly inspected and maintained to prevent leaks.	Appendix C and Soil and Water Management Plan
CWQ5	All potentially contaminating substances will be stored in secure, bunded and impervious locations away from surface water features and outside of the extent of the 20 year ARI design flood wherever practicable	Appendix C and Soil and Water Management Plan
CWQ6	Impervious and bunded areas will be established for the on-site maintenance of construction plant and equipment.	Appendix C and Soil and Water Management Plan
CWQ7	The area of exposed soils within the project site will be minimised through staging vegetation clearing and ground disturbing works across the project site. Disturbed areas and all long-term stockpiles will be protected or stabilised during periods of inactivity. Areas disturbed by construction activities will be rehabilitated and restored as soon as possible after completion of works in the area	Soil and Water Management Plan
CWQ8	Where feasible, construction activities will be scheduled to avoid ground disturbance works or in-stream works during periods of heavy or prolonged rainfall.	Soil and Water Management Plan
CWQ9	Protect stockpiles of loose material from erosion due to rain and wind	Appendix C and Soil and Water Management Plan
CWQ10	Erosion and sediment control measures will be implemented prior to soil disturbance in accordance with Managing Urban Stormwater: Soils and Construction Volume 1 (Landcom, 2004) and included in the SWMP. Erosion and sediment controls throughout the project site will be regularly inspected and maintained.	Appendix C and Soil and Water Management Plan
CWQ11	Remove all material from the site as soon as practical at the completion of work	Appendix C and Soil and Water Management Plan
CWQ13	Instruct site workers on the need to prevent materials from washing or blowing into the stormwater system	Appendix C and Soil and Water Management Plan
CWQ14	Infiltration trenches will be installed to allow for potentially contaminated water to be collected and infiltrated back into groundwater rather than flowing to surface water	Appendix C and Soil and Water Management Plan
CWQ16	Bins will be provided on-site for litter. All general litter and waste collected on-site will be transported off-site to an appropriate waste facility.	Appendix C and Soil and Water Management Plan, Appendix D (ECP 04 – Section 4.5)
DCC1	Measures to mitigate any extreme, high and medium climate change risks will be further refined and included in the detailed design to ensure there are no residual extreme or high climate risks, and minimise medium risks where practicable. The following potential measures will be considered: • designing drainage systems to consider the increase in rainfall intensity due to climate change • locating new rail systems infrastructure above predicted climate change flood levels, where practicable • placing cable routes outside climate change flood inundation zones where feasible • adjusting the neutral point when specifications are prepared for the stressing of steel rail to account for likely temperature variations and increases in average maximum temperatures • selecting equipment that is resilient to the projected temperature changes over its design life • designing ventilation systems for signalling equipment rooms/location cases to account for increased temperatures due to climate change • connecting to existing system at the site where UPS changeovers are provided to bridge power supply when changing from electricity network to critical infrastructure back-up supply to reduce risk of power failure • limiting outside exposure of cables where possible, ensure the installation of surge protection and provide a redundant power source to reduce likelihood and impacts of lightning strikes to exposed cables • reducing the number of signalling cabinets to reduce the amount of exposed cabling.	N/A

DFL1	As a minimum, the modification and duplication of the existing rail line is to be configured to ensure the existing level of flood immunity is not reduced by the project. Measures to improve the existing level of flood immunity are to be further investigated during detailed design with the goal of providing a 1% annual exceedance probability (AEP) level of flood immunity.	N/A
DFL2	The new bridge crossing over Mill Stream is to provide a minimum freeboard of 0.5 metres between the underside of the bridge structure and the peak 1% AEP flood level.	N/A
DFL3	Rail location cabinets (LOCs) for housing communications, power and signalling equipment for the system and control network will be located a minimum 0.5 metres above the peak 1% AEP flood level in accordance with ARTC standards.	N/A
DFL4	A 10% AEP level of flood immunity is to be provided to the new access roads.	N/A
DFL5	A detailed hydrologic and hydraulic (flood) assessment of the impacts of the project on flood behaviour and the associated measures which are required to mitigate those impacts will be undertaken during detailed design. Works within the floodplain will be designed to minimise adverse impacts on surrounding development (including roads) for flooding up to the 1% AEP event in magnitude. Assessment will also be made of impacts during floods up to the probable maximum flood (PMF) in the context of impacts on critical infrastructure and flood hazards. Subject to the flood assessment during detailed design, it may be necessary to collect detailed ground survey (including floor levels and entry levels to buildings and basement carparks) in affected areas to determine whether the project will increase flood damages in adjacent development (i.e. in properties where there is a potential for increases in peak flood levels for events up to 1% AEP in magnitude) or increase the flood hazard to basement carparks (i.e. in basement carparks where there is a potential for increases in the frequency, rate and volume of flow into basement carparks for events up to the PMF).The design of the project will need to incorporate measures that are aimed at mitigating the impact of the project on flood behaviour in properties where existing buildings will experience above-floor inundation during floods up to the 1% AEP event, or where there is the ingress of floodwater to basement carparks during storms up to the PMF. Drainage structures will be sized and positioned more precisely during detailed design to mitigate these impacts. Localised increases in flow velocities at the outlets to upgraded or relocated, or new stormwater drainage systems will be mitigated through the provision of scour protection and energy dissipation measures	N/A
DHS1	Independently facilitated AS 2885.6 SMS workshops will be completed with each high pressure pipeline owner and the construction contractor. The SMS workshops will be conducted once design has reached a level that enables completion of a compliant AS 2885.6 process. This level is considered to be detailed design and will be completed before construction relating to the relevant utilities commence.	N/A
DHS2	The location of key utility infrastructure which relate to the project site and proposed construction works will be identified and documented in the relevant design drawings and reports, prior to construction works commencing.	N/A
DHS3	Details of proposed works for key utilities, such as relocate or protect will be confirmed prior to construction works commencing.	N/A
DHS4	Based on the current design, detailed windshear assessment is not warranted. Consultation with Sydney Airport Corporation Limited is required to confirm any need for detailed assessment in accordance with *National Airports Safeguarding Framework Guideline B* during detailed design.	N/A
DHS5	Lighting associated with operation and maintenance of the rail line, including train headlights, will comply with CASA Manual of Standards 139 section 9.21 and National Airports Safeguarding Framework Guideline E.	N/A
DHS6	The rail alignment has been designed in conjunction with the protected airspace associated with Sydney Airport to minimise the intrusions into the airspace. Consultation with Sydney Airport Corporation Limited will be undertaken during detailed design on the final rail alignments and heights. Consultation with Airservices Australia will be undertaken during detailed design for assessment of any required updates to the ERSA.	N/A
DHS7	Drainage and revegetation has been designed so as not to create high risk environments for attracting additional wildlife. Any changes to the drainage or revegetation design made during detailed design will ensure that no high risk environments for attracting additional wildlife are created.	N/A
DHS8	Co-ordination of utility relocations will be considered before enabling works commence.	N/A
DLP1	The overall disturbance footprint will continue to be refined during detailed design to identify areas where it could be minimised to reduce impacts on existing land uses. Detailed staging of the project will also be determined during detailed design and will aim to minimise the time that affected land uses are impacted during construction.	N/A
DLP2	The relevant property owners will be consulted in relation to the acquisition of properties required to facilitate the project. All acquisitions required for the project will be carried out in accordance with the *Land Acquisition (Just Terms Compensation) Act 1991* and the land acquisition reforms announced by the NSW Government in 2016.	N/A
DLP3	Temporary occupation of required site compounds will be negotiated under legal agreement with property owners. On completion of the project, the land will be returned to the owners for continued future use.	SEMP
DLP4	The overall disturbance footprint will be refined during detailed design to identify areas where the footprint could be minimised to reduce impacts on billboards and to minimise modification or relocation where possible.	N/A

	Where modification or relocation of billboards is proposed, the criteria in Schedule 1 (Assessment Criteria) of *SEPP 64 – Advertising and Signage* will be considered in the design of the modified or relocated billboards.	
DLV1	Proposed retaining wall finishes will be selected to align with the projects urban design and landscaping principles and aim to minimise adverse visual impact. These treatments will be aligned with the urban design concepts of the Sydney Gateway road project between O'Riordan and Robey Streets.	N/A
DLV2	The proposed twin bridges at Robey and O'Riordan Streets and Southern Cross Drive will be designed to minimise visual clutter. All bridges will incorporate measures to discourage graffiti.	N/A
DLV3	As a priority, billboards will be replaced like for like. Where they cannot be replaced like for like they will be shifted in space to allow like for like placement on a new location in immediate vicinity of their current location. Where they cannot be placed in their immediate vicinity, they will be relocated along the existing rail corridor and combined with existing structures (such as bridges) where practicable in order to minimise potential to introduce structures in areas where there are minimal structures and infrastructure (i.e. clustering instead of introducing impacts on higher sensitivity areas).	N/A
DNH1	Impacts to significant fabric, locally and State significant archaeological remains and landscapes (including trees, plantings and public recreation areas) within and adjacent to the project site will be avoided, where possible. Designs will also endeavour to reduce visual impacts by considering sympathetic and unobtrusive fabric, colour, form and size for new built elements. Appropriate impact avoidance measures will be considered during the detailed design phase and included in the Construction Environment Management Plan (CEMP) for the project where required.	Appendix D (ECP 01)
DNH2	A Heritage Interpretation Plan (HIP) including a heritage interpretation strategy will be prepared in accordance with the NSW Heritage Manual, the NSW Heritage Office's Interpreting Heritage Places and Items: Guidelines (NSW Heritage Office, 2005), and the NSW Heritage Council's Heritage Interpretation Policy (Heritage Council of NSW, 2005). The HIP will focus on the study areas historic development and target items considered to contain heritage significance within the project site including: Mascot (Botany Road) Underbridge Mascot (O'Riordan Street) Underbridge Mascot (Robey Street) Underbridge Botany Rail Line and its associations with the development of industry and land use in the Botany and Mascot areas. The HIP will be prepared in consultation with: Bayside Council NSW Heritage Council Randwick and District Historical Society.	Appendix D (ECP 01)
DNV1	The need for consecutive night-time works and likelihood for sleep disturbance impacts will be reviewed during detailed design. Where impacts are considered likely, appropriate noise mitigation will be developed which takes into consideration factors such as the existing facade performance of affected residential receivers. Appropriate respite will be provided to affected receivers to limit impacts from night-time works in the same location	Noise and Vibration Management Plan
DNV2	Further investigation will be completed during detailed design to determine appropriate criteria which take into account the existing facade performance of the affected hotels, noting that most of the hotels are of recent construction and are likely to have high performance facades. Prior to construction, all hotels within 50 metres of the project site will be consulted and assessed to determine their sensitivity to airborne and ground-borne noise impacts, existing facade performance, areas of permanent residence (if any) and to allow appropriate criteria and mitigation to be determined.	Noise and Vibration Management Plan
DNV3	The project has the potential to impact a number of pipeline assets during construction. An assessment will be completed in detailed design which will: • calculate the actual distance of the works from the structure • assess ground conditions and the effect this will have on vibration. Where impacts are considered likely, the susceptibility of the various assets to vibration levels and appropriate monitoring and management protocols will be developed in consultation with the relevant owners. Condition surveys will be completed before and after the works where appropriate.	Noise and Vibration Management Plan
DNV4	In locations where 'moderate' or 'high' noise impacts are predicted, engagement with the affected communities will be outlined in the community and stakeholder engagement plan and undertaken during detailed design to determine their preference for mitigation and management measures.	Noise and Vibration Management Plan
DNV5	Investigate operational noise and vibration mitigation options during detailed design, including source control measures, path control measures and receiver controls as per the RING. This will include a review of the: • use of track lubrication as the primary source of noise control for operation noise impacts • feasibility and reasonableness of using noise barriers to provide path control mitigation to nearby receivers, noting the specific constraints that are applicable to this project • need for at-property treatment to be used to mitigate residual impacts at receivers which require consideration of mitigation after the use of source of path control measures. The potential operational noise and vibration mitigation options to be investigated are discussed further in section 8.3 in *Technical Report 2 – Noise and Vibration Impact Assessment*.	N/A

DNV6	Potential ground-borne noise impacts will be investigated further during detailed design when the extent of airborne rail noise mitigation, train speeds, and the position of track turnouts is confirmed.	N/A
DRW1	Measures to minimise excess spoil generation will be investigated at detailed design. This will include a focus on optimising the design to minimise spoil volumes and the reuse of material on-site.	Appendix D (ECP 04 – Section 4.5)
DWQ1	The formations and integrated drainage will be designed to prevent formation failure. This will include designing the longitudinal drainage to direct surface water runoff away from formations.	N/A
DWQ2	Batter slope gradients, surface treatments and the construction program will be designed to minimise erosion risk so the annual sediment export rate is below 150 m3 at each outlet to avoid the need for sediment basins in accordance with the Blue Book.	Soil and Water Management Plan
DWQ3	Requirements for construction water (volumes, quality, demand curves, approvals requirements and lead times) will be defined during detailed design.	N/A
DWQ4	Suitably designed scour and erosion control measures will be included in the detailed design where required, including at the Mill Stream drainage outlets.	N/A
DWQ5	The detailed design of Mill Stream bridge will be optimised to minimise upstream or downstream scour effects on the existing watercourse.	N/A
DWQ6	A baseline groundwater monitoring program will be implemented to characterise baseline groundwater conditions as per Chapter 8 of *Technical Report 7 – Groundwater Impact Assessment*.	Soil and Water Management Plan

Appendix B. Overview of Construction Activities


DRAWN TO AS1100
DO NOT SCALE
ALL DIMENSIONS IN MM UNLESS STATED OTHERWISE
SHEET PILES AFTER GST RELOCATION
GAS PROTECTION SLABS WHERE REQUIRED AROUND ACCESS POINTS
TEMPORARY ACCESS RETAINING WALL FOR PILING PLATFORM (EXTENT TO BE CONFIRMED
STANFORD HOTEL
ROBEY ST
SHEET PILES TYPE AZ12-700 OR BETTER - MIN. LENGTH 10m
TO MARRICKVILLE
EXSISTING SINGLE SPAN BRIDGE
SHEET PILES AFTER GST RELOCATION
SHEET PILES TYPE AZ12-700 OR BETTER - MIN. LENGTH 10m
FROM PORT BOTANY
SHEET PILES TYPE AZ20-700 OR BETTER - MIN. LENGTH 12m
PILING RIG ACCESS FROM WEST
SHEET PILES TYPE AZ20-700 OR BETTER - MIN. LENGTH 12m
TEMPORARY ACCESS RETAINING WALLS FOR PILING PLATFORM (EXTENT TO BE CONFIRMED)
GAS PROTECTION SLABS WHERE REQUIRED AROUND ACCESS POINTS
TEMPORARY ACCESS RETAINING WALL FOR PILING PLATFORM (EXTENT TO BE CONFIRMED
GAS PROTECTION SLABS WHERE REQUIRED AROUND ACCESS POINTS
QANTAS DRIVE
CTP 12615.292
PLAN VIEW
EXSISTING SIGN #13 TO REMAIN DURING CONSTRUCTION
12640.000
12620.000
12600.000
12580.000
12560.000
12540.000
LEGEND
= ACCESS RAMP
= PILING PLATFORM
= SHEET PILES
= RAIL DANGER ZONE
= RAIL BOUNDARY
= UNDERGROUND GAS LINE
METHODOLOGY
1. POSSESSION MARCH 2022: RELOCATE GST AND CONSTRUCT SHEET PILING.
2. INSTALL BARRIERS ON BOTH SIDES OF EXISTING RAILWAY LINE.
3. CONSTRUCT TEMPORARY RETAINING WALLS FOR PILING PLATFORMS.
4. CONSTRUCT RAMPS AND PILING PLATFORMS.
5. POSSESSION MAY 2022: PILING (2 PILES - SOUTH SIDE) WITHIN THE DANGER ZONE OF EXISTING BOTANY LINE.
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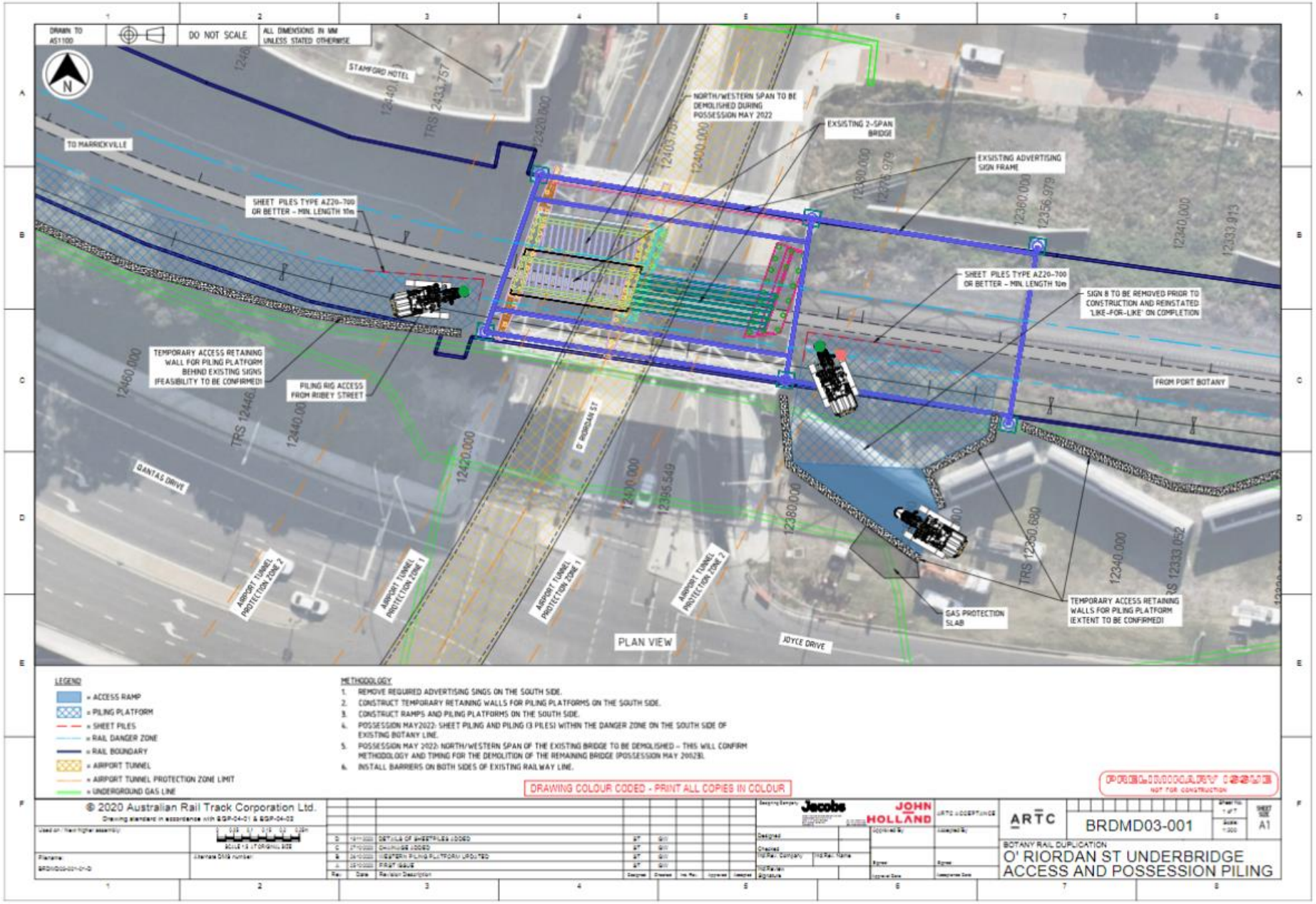
ARTC
BRDMD02-001
A1
BOTANY RAIL DUPLICATION
ROBEY ST UNDERBRIDGE
ACCESS AND POSSESSION PILING


DRAWN TO AS1100
DO NOT SCALE
ALL DIMENSIONS IN MM UNLESS STATED OTHERWISE
STAMFORD HOTEL
TO MARRICKVILLE
NORTH/WESTERN SPAN TO BE DEMOLISHED DURING POSSESSION MAY 2022
EXSISTING 2-SPAN BRIDGE
EXSISTING ADVERTISING SIGN FRAME
SHEET PILES TYPE AZ20-700 OR BETTER – MIN. LENGTH 10m
SIGN 8 TO BE REMOVED PRIOR TO CONSTRUCTION AND REINSTATED 'LIKE-FOR-LIKE' ON COMPLETION
TEMPORARY ACCESS RETAINING WALL FOR PILING PLATFORM BEHIND EXISTING SIGNS (FEASIBILITY TO BE CONFIRMED)
PILING RIG ACCESS FROM RIBEY STREET
FROM PORT BOTANY
O'RIORDAN ST
QANTAS DRIVE
AIRPORT TUNNEL PROTECTION ZONE 2
AIRPORT TUNNEL PROTECTION ZONE 1
GAS PROTECTION SLAB
TEMPORARY ACCESS RETAINING WALLS FOR PILING PLATFORM (EXTENT TO BE CONFIRMED)
JOYCE DRIVE
PLAN VIEW
LEGEND
= ACCESS RAMP
= PILING PLATFORM
= SHEET PILES
= RAIL DANGER ZONE
= RAIL BOUNDARY
= AIRPORT TUNNEL
= AIRPORT TUNNEL PROTECTION ZONE LIMIT
= UNDERGROUND GAS LINE
METHODOLOGY
1. REMOVE REQUIRED ADVERTISING SINGS ON THE SOUTH SIDE.
2. CONSTRUCT TEMPORARY RETAINING WALLS FOR PILING PLATFORMS ON THE SOUTH SIDE.
3. CONSTRUCT RAMPS AND PILING PLATFORMS ON THE SOUTH SIDE.
4. POSSESSION MAY2022: SHEET PILING AND PILING (3 PILES) WITHIN THE DANGER ZONE ON THE SOUTH SIDE OF EXISTING BOTANY LINE.
5. POSSESSION MAY 2022: NORTH/WESTERN SPAN OF THE EXISTING BRIDGE TO BE DEMOLISHED – THIS WILL CONFIRM METHODOLOGY AND TIMING FOR THE DEMOLITION OF THE REMAINING BRIDGE (POSSESSION MAY 2023).
6. INSTALL BARRIERS ON BOTH SIDES OF EXISTING RAILWAY LINE.
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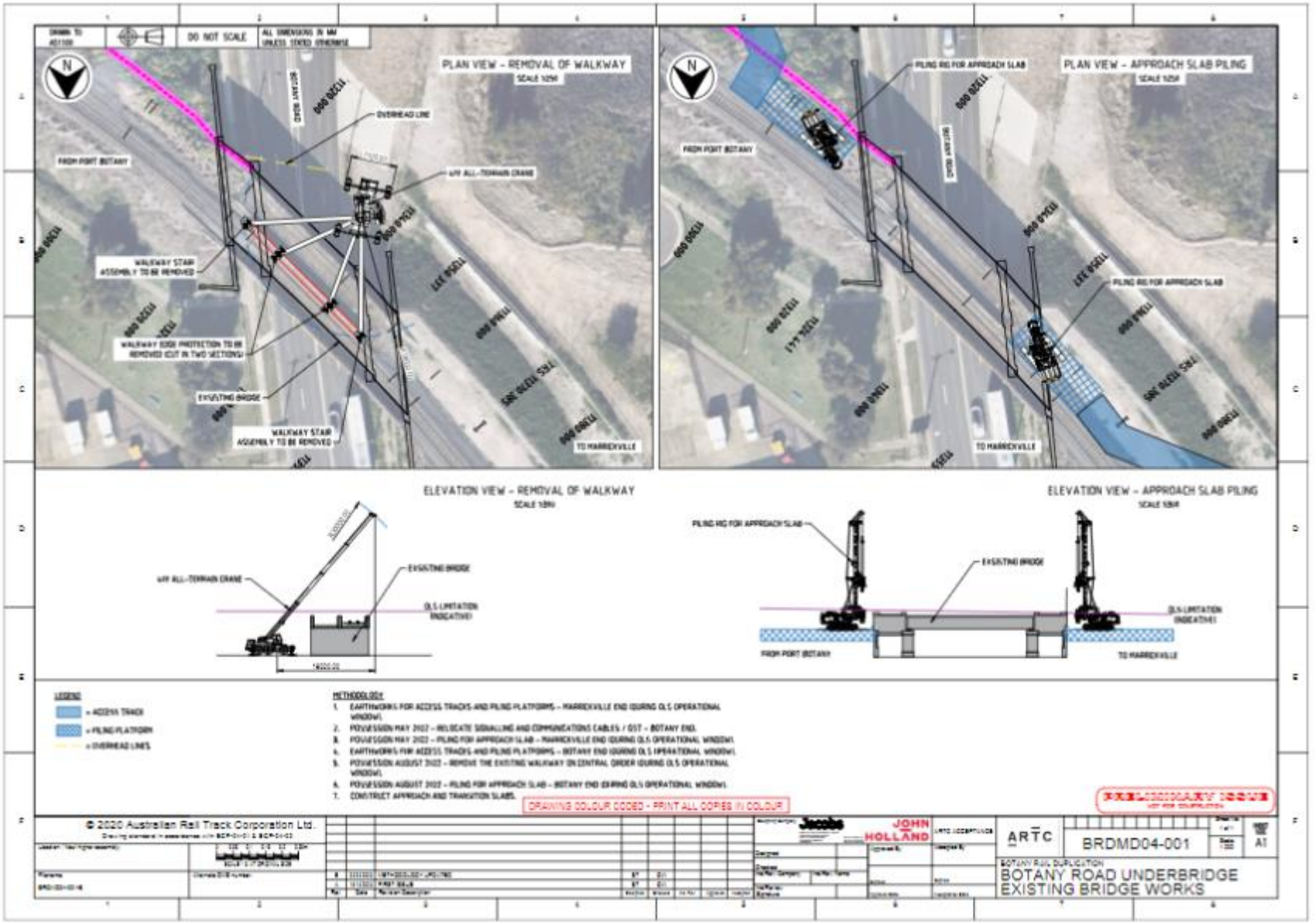
D DETAILS OF SHEETPILES ADDED
C CHAINAGE ADDED
B WESTERN PILING PLATFORM UPDATED
A FIRST ISSUE
Jacobs
JOHN HOLLAND
ARTC
BRDMD03-001
A1
BOTANY RAIL DUPLICATION
O' RIORDAN ST UNDERBRIDGE ACCESS AND POSSESSION PILING


DO NOT SCALE
ALL DIMENSIONS IN MM UNLESS STATED OTHERWISE
PLAN VIEW – REMOVAL OF WALKWAY
SCALE 1:250
OVERHEAD LINE
WALKWAY STAIR ASSEMBLY TO BE REMOVED
WALKWAY EDGE PROTECTION TO BE REMOVED (CUT IN TWO SECTIONS)
EXISTING BRIDGE
WALKWAY STAIR ASSEMBLY TO BE REMOVED
FROM PORT BOTANY
TO MARRICKVILLE
PLAN VIEW – APPROACH SLAB PILING
SCALE 1:250
PILING REQ FOR APPROACH SLAB
PILING REQ FOR APPROACH SLAB
FROM PORT BOTANY
TO MARRICKVILLE
ELEVATION VIEW – REMOVAL OF WALKWAY
SCALE 1:250
EXISTING BRIDGE
OLS LIMITATION (INDICATIVE)
ELEVATION VIEW – APPROACH SLAB PILING
SCALE 1:250
PILING REQ FOR APPROACH SLAB
EXISTING BRIDGE
OLS LIMITATION (INDICATIVE)
FROM PORT BOTANY
TO MARRICKVILLE
LEGEND
= ACCESS TRACK
= PILING PLATFORM
= OVERHEAD LINES
METHODOLOGY
1. EARTHWORKS FOR ACCESS TRACKS AND PILING PLATFORMS – MARRICKVILLE END (DURING OLS OPERATIONAL WINDOW).
2. POSSESSION MAY 2022 – RELOCATE SIGNALLING AND COMMUNICATIONS CABLES / OST – BOTANY END.
3. POSSESSION MAY 2022 – PILING FOR APPROACH SLAB – MARRICKVILLE END (DURING OLS OPERATIONAL WINDOW).
4. EARTHWORKS FOR ACCESS TRACKS AND PILING PLATFORMS – BOTANY END (DURING OLS OPERATIONAL WINDOW).
5. POSSESSION AUGUST 2022 – REMOVE THE EXISTING WALKWAY ON CENTRAL ORDER (DURING OLS OPERATIONAL WINDOW).
6. POSSESSION AUGUST 2022 – PILING FOR APPROACH SLAB – BOTANY END (DURING OLS OPERATIONAL WINDOW).
7. CONSTRUCT APPROACH AND TRANSITION SLABS.
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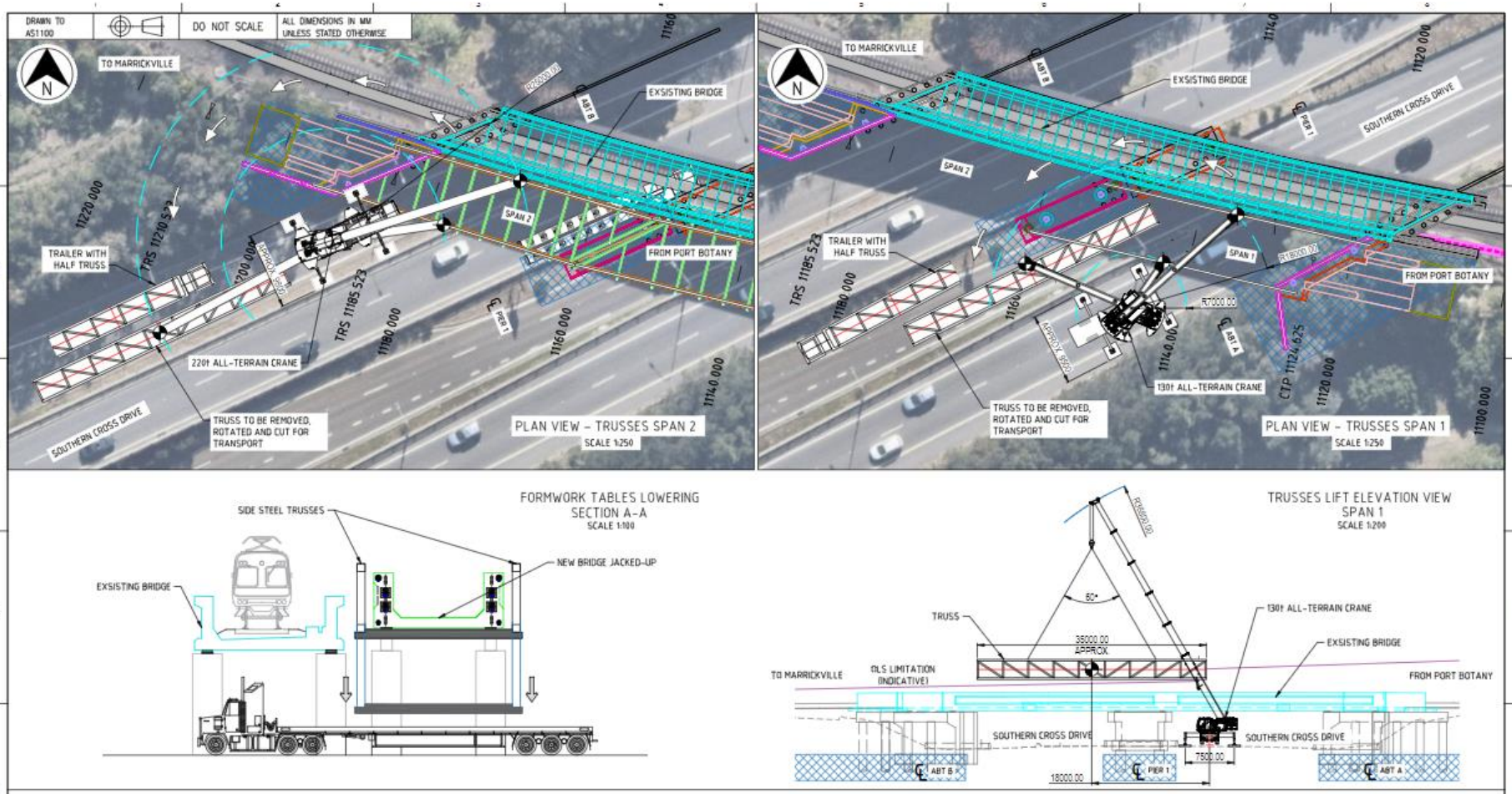
BOTANY ROAD UNDERBRIDGE
EXISTING BRIDGE WORKS


DRAWN TO AS1100
DO NOT SCALE
ALL DIMENSIONS IN MM UNLESS STATED OTHERWISE
TO MARRICKVILLE
EXSISTING BRIDGE
SPAN 2
FROM PORT BOTANY
TRAILER WITH HALF TRUSS
220t ALL-TERRAIN CRANE
TRUSS TO BE REMOVED, ROTATED AND CUT FOR TRANSPORT
SOUTHERN CROSS DRIVE
PLAN VIEW – TRUSSES SPAN 2
SCALE 1:250
SPAN 1
130t ALL-TERRAIN CRANE
PLAN VIEW – TRUSSES SPAN 1
SCALE 1:250
FORMWORK TABLES LOWERING
SECTION A-A
SCALE 1:100
SIDE STEEL TRUSSES
NEW BRIDGE JACKED-UP
TRUSSES LIFT ELEVATION VIEW
SPAN 1
SCALE 1:200
TRUSS
OLS LIMITATION (INDICATIVE)
ABT B
PIER 1
ABT A
LEGEND
= ACCESS TRACK
= RAMPS
= PILING PLATFORM
= SHEET PILES
METHODOLOGY
1. JACK-UP NEW STRUCTURE AT GIRDER REPLACEMENT JACKING POINTS.
2. LIFT AND REMOVE PREFABRICATED SIDE FORMS (DURING OLS OPERATIONAL WINDOW).
3. HOIST DOWN TRANSVERSE FORMWORK TABLES USING TEMPORARY TRUSSES DIRECTLY ONTO TRAILER.
4. LIFT AND REMOVE FOUR SIDE STEEL TRUSSES (DURING OLS OPERATIONAL WINDOW). TRUSSES ARE CUT IN TRANSPORTABLE SECTIONS AND REMOVED.
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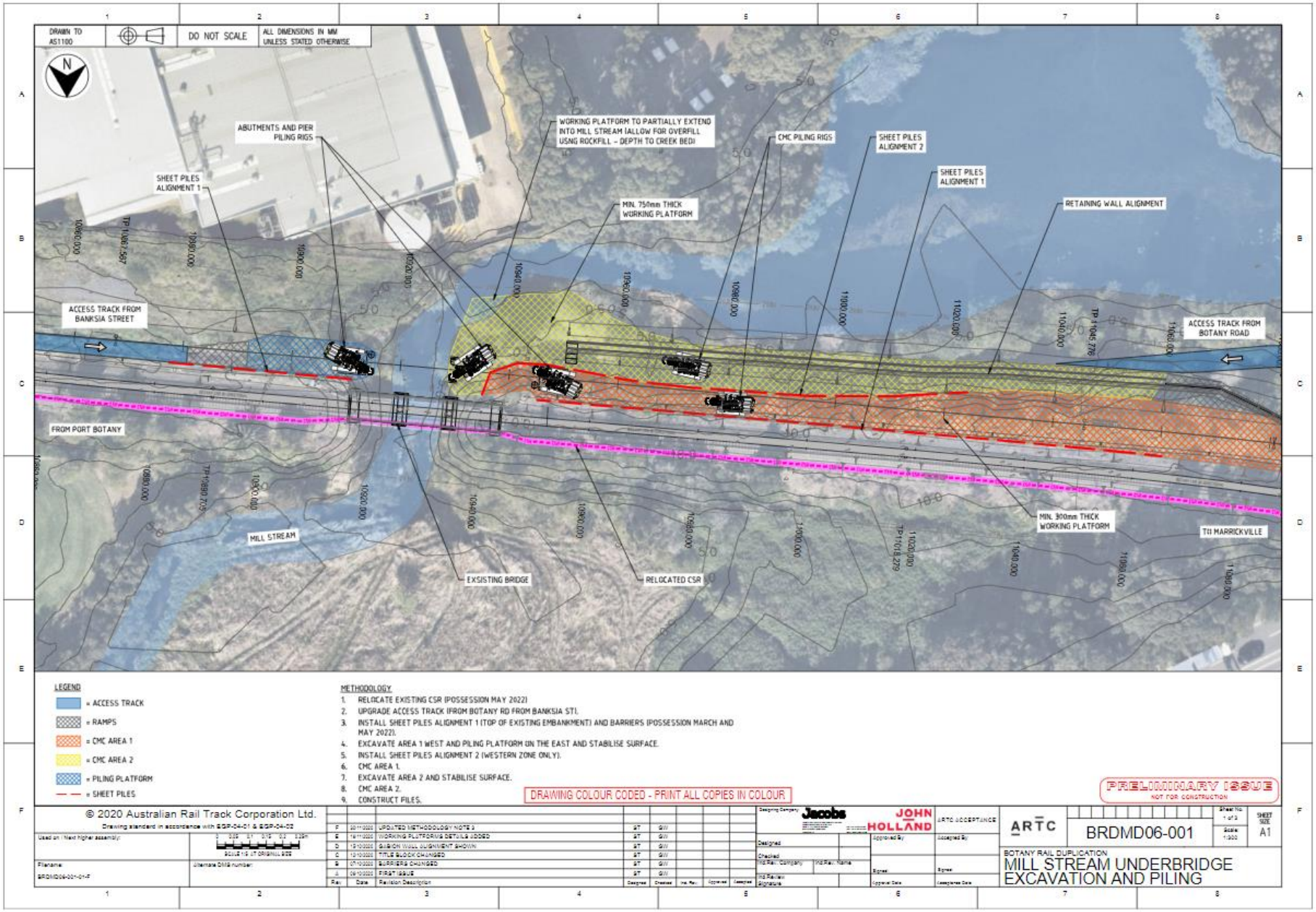
ARTC
BRDMD05-001
BOTANY RAIL DUPLICATION
SOUTH. CROSS DR UNDERBRIDGE TEMPORARY STEEL REMOVAL
A1


DRAWN TO AS1100
DO NOT SCALE
ALL DIMENSIONS IN MM UNLESS STATED OTHERWISE
N
ABUTMENTS AND PIER PILING RIGS
SHEET PILES ALIGNMENT 1
WORKING PLATFORM TO PARTIALLY EXTEND INTO MILL STREAM (ALLOW FOR OVERFILL USNG ROCKFILL - DEPTH TO CREEK BED)
CMC PILING RIGS
SHEET PILES ALIGNMENT 2
SHEET PILES ALIGNMENT 1
MIN. 750mm THICK WORKING PLATFORM
RETAINING WALL ALIGNMENT
ACCESS TRACK FROM BANKSIA STREET
ACCESS TRACK FROM BOTANY ROAD
FROM PORT BOTANY
MILL STREAM
EXSISTING BRIDGE
RELOCATED CSR
MIN. 300mm THICK WORKING PLATFORM
TfI MARRICKVILLE
LEGEND
= ACCESS TRACK
= RAMPS
= CMC AREA 1
= CMC AREA 2
= PILING PLATFORM
= SHEET PILES
METHODOLOGY
1. RELOCATE EXISTING CSR (POSSESSION MAY 2022)
2. UPGRADE ACCESS TRACK (FROM BOTANY RD FROM BANKSIA ST).
3. INSTALL SHEET PILES ALIGNMENT 1 (TOP OF EXISTING EMBANKMENT) AND BARRIERS (POSSESSION MARCH AND MAY 2022).
4. EXCAVATE AREA 1 WEST AND PILING PLATFORM ON THE EAST AND STABILISE SURFACE.
5. INSTALL SHEET PILES ALIGNMENT 2 (WESTERN ZONE ONLY).
6. CMC AREA 1.
7. EXCAVATE AREA 2 AND STABILISE SURFACE.
8. CMC AREA 2.
9. CONSTRUCT FILES.
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F 20/11/2020 UPDATED METHODOLOGY NOTE 3 GT GW
E 19/11/2020 WORKING PLATFORMS DETAILS ADDED GT GW
D 13/10/2020 DESIGN WALL ALIGNMENT SHOWN GT GW
C 12/10/2020 TITLE BLOCK CHANGED GT GW
B 07/10/2020 BARRIERS CHANGED GT GW
A 06/10/2020 FIRST ISSUE GT GW
Designing Company Jacobs JOHN HOLLAND
ARTC ACCEPTANCE
ARTC
BRDMD06-001
SHEET SIZE A1
BOTANY RAIL DUPLICATION
MILL STREAM UNDERBRIDGE EXCAVATION AND PILING

Appendix C. Environmental Risk Assessment

JH has undertaken a comprehensive and site-specific environmental risk assessment for the Project. All mitigation measures detailed risk assessment are to be implemented on the project alongside the requirements of the Environmental Control Plans (Appendix D) and CEMP Sub-Plans (CSWMP, CNVMP and CTTAMP).

Tables C.1 and C.2 together provide a methodology for assigning a risk rating to each environmental aspect of the Project.

Table C.1 provides scores to grade the likelihood and consequence of a potential environmental impact. For each potential environmental impact, a letter and a number must be selected from the likelihood and consequence columns respectively. The lowest number consequence must be adopted if any one of the consequences for that grading could occur.

Table C.2 provides a matrix that assigns a risk rating based on the likelihood and consequence scores.

Table C1: Likelihood and Consequence Grades

Likelihood (probability and frequency of occurrence)			**Consequence (outcome or severity of occurrence)**		
C	Certain	▪ Common or repeating occurrence ▪ Consequence can reasonably be expected to occur in life of the Project	1	Severe	▪ Major pollution incident causing significant and widespread damage or potential to health or the environment ▪ Persistent reduction in ecosystem function and value ▪ Ongoing disruption and loss of protected species ▪ Major prosecution likely, outcome in excess of $500,000
L	Likely	▪ Known to have occurred / “has happened” ▪ Conditions may allow the consequence to occur on the Project during its lifetime ▪ The event has occurred within the Business Unit within the previous 5 years.	2	Major	▪ Significant widespread and persistent changes to habitat, species or environmental media ▪ Significant pollution incident causing damage or potential damage to health or the environment external to the site ▪ Potential for prosecution. Potential outcome between $50,000 - $500,000 ▪ Numerous substantial complaints ▪ Actual material environmental harm
P	Possible	▪ Could occur/’heard of it happening ▪ Exceptional conditions may allow consequences to occur on the Project, or has occurred nationally within the Australian Business.	3	Moderate	▪ Localised irreversible habitat loss or effects on habitat, species or environmental media ▪ Reportable incident to the relevant environmental regulator or other authority ▪ Demonstrated breach of legislative, licence, or guideline requirements ▪ Likely infringement notice or fine, potential for prosecution up to $50,000

					▪ Will cause complaints
U	Unlikely	▪ Not likely to occur ▪ Reasonable to expect that the consequence will not occur on the Project ▪ Has occurred in the industry but not in the Business Unit.	4	Minor	▪ Localised degradation of habitat or short term impacts to habitat, species or environmental media ▪ Pollution incident that marginally exceeds licence conditions or guidelines for acceptable pollution. ▪ Unlikely fine or infringement notice ▪ Potential for complaints
R	Rare	▪ Practically impossible ▪ Not known to have occurred in the industry or unheard of.	5	Incidental	▪ Localised or short term effects on habitat, species or environmental media ▪ Fully contained on-site and can be fully remediated. ▪ Little potential for fine or complaints ▪ Insignificant or trivial incident.

Table C2: Risk Rating Matrix

Risk ratings

E	Extreme
H	High
M	Medium
L	Low

		LIKELIHOOD				
CONSEQUENCE		**Certain**	**Likely**	**Possible**	**Unlikely**	**Rare**
1	Severe	**E**	**E**	**E**	**H**	**M**
2	Major	**E**	**E**	**H**	**M**	**M**
3	Moderate	**H**	**H**	**M**	**M**	**L**
4	Minor	**M**	**M**	**M**	**L**	**L**
5	Incidental	**M**	**L**	**L**	**L**	**L**

Environmental Risk Assessment

Table C.3 identifies the environmental aspects and potential environmental impacts of the activities that JH will undertake on the Project. For each potential environmental impact an initial risk rating is calculated in **Table C.3** based on the maximum credible (not absolute worst case) risk that could result with **minimal or no controls**. Where the initial risk ratings is Medium or High, a CEMP Sub-Plan or Environmental Control Plan (ECP) has been developed, the ECPs are provided in Appendix D.

Residual risk ratings are calculated following the consideration of control measures and these results are shown in **Table C3**.

Issues or activities that have a potential environmental impact with an Extreme risk ranking following the application of control measures are not to be undertaken.

Table C3: Environmental Risk Assessment

Environmental Aspect	Potential Environmental Impact	Initial Risk Rating			Control Measures	Residual Risk Rating		
		L	C	R		L	C	R
Noise and Vibration	Noise impacts on local residents and sensitive receivers from construction activities within standard work hours Noise impacts on local residents and sensitive receivers from construction activities for out of hours works Noise impacts on local residents and sensitive receivers from construction traffic for day works Noise impacts on local residents and sensitive receivers from construction traffic out of hours Damage to structures including heritage structures (i.e. bridge) from vibration caused by construction activities Damage to structures including heritage structures from vibration caused by operation of trains	L	3	**H**	Works to be undertaken in accordance with the project's Construction Noise and Vibration Management Plan and Construction Noise and Vibration Impact Statement (CNVIS)/Gatewave model outputs. Prior to construction all hotels within 50m of the project site will be consulted and assessed to determine sensitivity to airborne and groundborne noise impacts, existing façade performance and areas of permanent residence (if any) for incorporation into the CNVIS and Gatewave model. Development of a monitoring protocols (in consultation with an asset owner) and condition surveys (where appropriate) to be carried out for adjacent assets including pipelines. In locations where 'moderate' or 'high' noise impacts are predicted, engagement with the affected communities will be outlined in the Community and Stakeholder Engagement Plan and undertaken during design to determine the communities preference for mitigation measures. Where reasonable and feasible, construction will be carried out during Standard Construction Hours. If it is not possible to restrict the works to daytime, then they would be scheduled so noise intensive equipment is not used after 11:00pm (where possible). Monitoring will be carried out at the start of noise and vibration intensive activities which are near to receivers to confirm noise predictions and calculations Shielding structures such as noise blankets attached to site fencing, will be used during noisy works and/or long-term works where receivers are near compounds or worksites. The use of the Banksia Street compound will be avoided as much as practicable for out of hours works associated with the Road Closures at Robey Street and O'Riordan Street Building condition surveys will be completed before and after the works where buildings or structures, including heritage items are within the minimum working distances during the use of vibration intensive equipment as assessed in the Noise and Vibration Management Plan. Cumulative construction noise impacts will be reviewed during design and coordination will occur with third parties/other CSSI Projects to minimise impacts from concurrent works All employees will receive an environmental induction which will include noise and vibration mitigation measures. No swearing or unnecessary shouting or loud stereos/radios/phone calls on speaker on-site No dropping of materials from height, throwing of metal items and slamming of doors. No unnecessary idling of vehicles near to receivers. Use quieter and less vibration emitting construction methods where feasible and reasonable (for exampling bored piling vs impact driven piles) Simultaneous operation of noisy plant within discernible range of sensitive receivers will be avoided Plant will be throttled down or shut down when not in use. Traffic flow, parking and loading/unloading will be planned to minimise reversing movements within the site. Non-tonal reversing beepers (or equivalent) will be fitted and used on all construction vehicles and mobile plant. Loading and unloading of materials/deliveries would occur as far as possible away from sensitive receivers where practicable. Site access points and roads will be selected as far as possible away from sensitive receivers. Dedicated loading/unloading areas will be shielded (using noise blankets or similar) if close to sensitive receivers.	P	4	M

					Structures, such as site sheds, will be used to shield residential receivers from noise (where practicable). Where practicable enclosures or noise blankets will be utilised for stationary noise sources			
Aboriginal Heritage	Disturbance of known or unidentified items or places of Aboriginal heritage significance	U	3	M	For areas with moderate potential of archaeological remains, archaeological monitoring or testing will be undertaken prior to or during excavation works as determined by the heritage consultant. An Unexpected Finds Procedure will be established and implemented for the Project. If unforeseen Indigenous objects are uncovered during construction, works within the vicinity of the find would cease immediately. The Contractor would immediately notify the JH Project Manager and JH Environment Manager so they can assist in co-ordinating next steps which are likely to involve consultation with an Aboriginal heritage consultant, ER and the Local Aboriginal Land Council. If human remains are found, work would cease, the site secured and the NSW Police and DPE notified. Where required, further archaeological investigations and an Aboriginal Heritage Impact Permit would be obtained prior to works recommencing at the location.	U	4	L
Non-Aboriginal Heritage	Disturbance or impact to heritage items	U	3	M	Establishment of protective barriers and/or pads around locally and state significant elements including bridges, Botany Swamp and associated vegetation to reduce impacts to fabric and associated vegetation. Establishment of an exclusion zone around the LEP curtilage for the Sydney Airport Group south of Qantas Drive. A s170 to be implemented for Robey and O'Riordan Street bridges prior to commencement of works impacting the structures. Works likely to impact on locally and state significant heritage elements will be assessed by the project heritage consultant and mitigation measures implemented prior to the works The location of subsurface excavations will be designed, where possible to avoid areas containing low or moderate potential for State and locally significant heritage. Archival recording to be completed prior to commencement of construction works.	U	4	L
Air Quality	Impact to surrounding residents from: – Exposed land and stockpiles on-site – Construction vehicles, plant and equipment on-site – Access tracks and vehicles offsite Dust contaminated with PFAS dispersing off-site Visible vehicle emissions impacting receptors	L	3	H	Dust suppression will be undertaken as required using water sprays, water carts or other media for unpaved work areas, stockpiles and during loading and unloading of dust generating materials Visual dust monitoring will be carried out with site personnel trained to look out for visible dust leaving the worksite. If the works are creating visible dust plumes, the works will be modified, stopped or additional mitigation measures such as damping down implemented until the dust hazard is eliminated. In the event of complaints a short term dust monitoring device will be installed in the relevant area. Construction vehicles will be covered prior to leaving site to prevent dust on public roads Plant and equipment will be maintained in good condition to minimise spills and air emissions Stockpile heights will be minimised and stockpiles will be located as far as practicable from sensitive receptors. High asbestos and PFAS risk areas will be identified in the site induction to highlight the importance of dust management in these areas	L	4	M
Biodiversity	Unplanned vegetation clearing Spread of chytrid fungus Unplanned impact to flora and fauna during clearance activities	L	3	H	An ecologist will undertake an assessment for clearing of vegetation and the need for offsetting (in accordance with the requirements of the CoA) A weed protocol will be produced and implemented to prevent the spread of chytrid fungus on the site including use of rumble grids, establishment of haul roads and wheel washing at site entrances. Project induction to include information on the biodiversity requirements for the works area	L	4	M

	Increase in weeds				Disturbance of native vegetation and habitats to be limited to the minimum necessary to construct the works Where practicable, infrastructure will be located in previously cleared areas or areas of exotic vegetation Equipment storage and stockpiling will be restricted to designated areas of cleared land required for the construction works (or compound areas) A trained ecologist will undertake pre-clearing surveys and e present during the clearing of native vegetation. Pre-clearing surveys to include: – Inspections of native vegetation for fauna and habitats – Capture and relocation details of mobile fauna Specific pre-clearing surveys to be carried out for the Green and Golden Bell Frog at Mill Stream and for roosting bats at the bridges Limits of clearing to be marked and temporary fencing to be installed and maintained around native vegetation to be maintained Management and disposal of weeds to be carried out in accordance with the Biosecurity Act 2015 and the NSW Weed Control Handbook Vehicles and other equipment used in the rail corridor to be cleaned to minimise seeds and plant material being spread in the works area Revegetation of riparian areas following the completion of works			
Contamination	Impacts associated with the disturbance of contaminated soil during construction Contamination of soils/groundwater due to spills and leaks during construction	L	2	E	RAP to be prepared by a suitably qualified environmental consultant and an interim site audit statement to be produced by an EPA Accredited Site Auditor prior to commencement of remediation. Remediation to be carried out in line with the requirements of the RAP for the Auditable Area. Installation of a capping layer in accordance with RAP to contain asbestos.Unexpected Finds Procedure to be included in the Soil and Water management plan for implementation ASS Management Plan to be included within the Soil and Water Management Plan for implementation. Asbestos Management Plan to be produced prior to the start of enabling works in accordance with the NSW EPA guidelines Emu pick to collect identified asbestos on the surface to be undertaken prior to soil disturbance. If groundwater is encountered it will be temporarily stored prior to disposal off-site or infiltration trenches to be applied as detailed in the Soil and Water Management Plan Processes to be developed for the storage, handling and use of materials and equipment to prevent spills and included in the Soil and Water Management Plan Material to be segregated to prevent cross contamination of stockpiles Location and nature of any known contamination will be registered on ARTC's Contaminated Land Register and ARTCMap (GIS system)	L	4	M
Hydrology and Flooding	Flooding caused by changes to flow patterns and altered hydrology Flooding of unprotected areas during construction Increased sedimentation of drains and watercourses Reduced water quality	L	3	H	Flood immunity and considerations to be included in the final design as per the Project Flood Model. Outlets to be upgraded or relocated (with new stormwater drainage systems to be mitigated) to minimise the impacts of localised increases in flow velocities. Construction measures to minimise the potential for scour through stabilisation of disturbed surfaces. Site facilities to be located outside high flood hazard areas based on a 1% AEP flood and ideally outside the 1% AEP flood extent (where practicable). Flood monitoring process to be included in the Soil and Water Management Plan The layout of the construction compounds, material storage areas, as well as temporary crane pads and temporary piling platforms to be designed to: – limit the extent of works located in floodway areas	U	3	M

					– divert overland flow either through or around work areas in a controlled manner – minimise flood impacts on adjacent development. Construction to be staged to limit the extent and duration of temporary works Construction equipment to be removed from floodplain areas at the completion of each work activity or in the event of a 'flood' weather warning Temporary flood protection to be implemented (for adjacent properties) in the event of heavy rainfall and predicted flooding.			
Soil and Water	Spills and leaks caused by soil or water contamination Impacts on groundwater and surface water from construction works	P	3	M	Implementation of Erosion and Sediment Control Plan (ESCP) for the Project. Works will be undertaken in accordance with all relevant requirements of the Blue Book (Managing Urban Stormwater: Soils and Construction – 4th Edition, Landcom 2004). Detailed design of Mill Stream bridge to be optimised to minimise upstream or downstream scour effects on the existing watercourse Trenches and excavations to be covered and bunded when not in use prior to forecast rainfall to prevent rainwater ingress. To reduce the potential impacts of sediment/erosion runoff, works will not be undertaken during periods of heavy rainfall Regular sweeping of public roads near access gates that are in use. Undertake toolbox talks and Pre-Work Briefings activities. Undertake Surveillance/Periodic Environmental Inspections Spill response kit readily accessible on site and location identified in SEP. All fuels, chemicals and hazardous liquids would be stored away from drainage lines, within an impervious bunded area in accordance with Australian Standards, EPA Guidelines and Chemical Storage and Spill Response Guidelines Safety Data Sheets for chemicals to be readily accessible on site Spills to be immediately contained and fuels, oils, chemicals and other hazardous liquids to be cleaned in accordance with the requirements of the Safety Data Sheet. Chemicals to be managed in accordance with the relevant Australian Standard Dangerous goods are not envisaged as being required for the works. Should dangerous goods be required, storage will be managed in accordance with SEPP 33 or a preliminary hazard analysis completed and provided to DPE for reference. Plant nappies to be used for mobile (bulk liquid containing) units Designated concrete washout area to be established, if required. Protection of local stormwater drainage systems Where feasible, construction activities will be scheduled to avoid ground disturbance works or instream works during periods of heavy or prolonged rainfall. Groundwater construction monitoring program to be included in the Soil and Water Management Plan and implemented. Construction plant and equipment to be regularly inspected and maintained to prevent leaks.	P	4	M
Waste Management	Cross-contamination of waste streams due to lack of knowledge of waste segregation by site personnel	L	3	H	All waste material to be disposed off-site at a suitable licensed waste management facility in accordance with the EPA Waste Classification Guidelines, 2014. All spoil and waste must be classified in accordance with the Waste Classification Guidelines Part 1: Classifying waste (EPA, 2014) prior to disposal. Any asbestos waste identified on site should be handled, managed and disposed of in accordance with the Asbestos Management Plan and SafeWork NSW guidelines	P	4	M

	Non segregation of contaminated/uncontaminated wastes leading to illegal disposal Additional waste generated when encountering unexpected contaminated material Incorrect classification and/or disposal of waste				Occupational hygienist to be on site during excavation works within the zone 1A and 1B and Area 5.. Personnel to be educated on correct waste segregation and disposal. Waste to be segregated into waste streams for recycling and disposal and receptacles clearly signed. Materials to be removed from site as soon as practical following the completion of work.			
Visual Amenity	Light impacts from out-of-hours work during construction Adverse impacts on landscape character during construction Impacts on visual amenity due to the introduction of built elements, including new bridges and embankments, and the removal of vegetation which currently provides some screening	L	3	H	Provision and maintenance of hoarding (or site fencing with shade cloth) around the worksite to minimise visual impacts during construction. Maintain a clean and tidy project site. Lighting directed away from sensitive receivers with glare and light spill to be considered and detailed in the relevant SEP. Controlled sweeping and wheel washing to be implemented to ensure no tracking of dirt and mud onto public roads and other public spaces Undertake daily surveillance and regular site inspections.	U	4	L
Traffic Management	Construction traffic impacts, including temporary delays to local and regional traffic Closure of roads due to proposed bridge works and including the congestion impacts due to diversions. Impacts on pedestrian and cyclist movements in the vicinity of the project Impacts to public safety from increased vehicle movements on local roads Impacts to emergency services through delays in access due to works Impacts to access to private property	L	3	H	Traffic Management Plan (TMP) to be prepared prior to commencement of construction works and control measures implemented. Notification would be provided to the community and local residents to inform them of changes to parking, pedestrian access and/or traffic conditions including vehicle movements and anticipated effects on the local road network relating to site works. Road Occupancy Licences for temporary road closures would be obtained, if required. Any pavement and road surfaces damaged during construction will be restored when work is finished. Pedestrians will be managed at access points to work sites with safe access points established. Right of way will be given to the public (road users and pedestrians) at access points into work areas with access to adjacent properties maintained. Truck movements to be limited during peak periods Truck idling areas to be identified to minimise the impact of trucks queuing on public roads Temporary traffic controls to be implemented in line with the relevant ROLs.	P	3	M

Appendix D. Environmental Control Plans

Section to be completed in conjunction with the relevant specialists.

Environmental Control Plans (ECPs) have been prepared for each environmental aspect in Appendix D that has an initial risk rating of Medium or High excluding Noise and Vibration, Soil and Water and Traffic Management where separate Sub-Plans to this CEMP have been developed.

Table C.1 List of Environmental Risk Action Plans

Reference	Environmental Risk Action Plan	Residual Risk
ECP 1	Heritage	Low
ECP 2	Visual Amenity	Low
ECP 3	Air Quality	Medium
ECP 4	Waste	Medium
ECP 5	Biodiversity/Flora and Fauna	Medium

ENVIRONMENTAL CONTROL PLAN:01 – Heritage	
1.1 Objectives	The following heritage objectives apply to the construction phase of the project: ▪ To minimise, avoid, or appropriately mitigate impacts to heritage items and archaeology in the vicinity of the Project ▪ To guide construction in the vicinity of heritage items
1.2 Legal, contractual, and other requirements	▪ Environmental Planning and Assessment Act 1979 ▪ Environment Protection and Biodiversity Conservation Act 1999 (Cwth) ▪ Airports Act 1996 and associated regulations ▪ Heritage Act 1977 ▪ Statements of Heritage Impact, NSW Heritage Manual (NSW Heritage Office, 2002) ▪ Burra Charter (Australia ICOMOS, 2013) ▪ Criteria for the assessment of excavation directors (NSW Heritage Council, 2011). ▪ Altering Heritage Assets (Heritage Office and Department of Urban Affairs and Planning 1996). ▪ Roads and Maritime Cultural Heritage Guidelines (November 2015) ▪ Roads and Maritime Standard Management Procedure: Unexpected Heritage Items (November 2015) ▪ Archaeological Assessment Guidelines (NSW Heritage Office and NSW Department of Urban Affairs and Planning 1996). ▪ Assessing Heritage Significance for Historical Archaeological Sites and 'Relics' (Heritage Branch of NSW Department of Planning 2009) ▪ Historical Archaeology Code of Practice (NSW Heritage Office 2006) ▪ Skeletal Remains: Guidelines for Management of Human Remains (NSW Heritage Office 1998) ▪ NSW Heritage Manual (Heritage Office and Department of Urban Affairs and Planning 1994) ▪ How to Prepare Archival Records of Heritage Items (NSW Heritage Office 2003) ▪ Assessing Heritage Significance (NSW Heritage Council 2002) ▪ Statement of Heritage Impact (NSW Heritage Council 2002) ▪ Commonwealth of Australia (2013) Actions on, or impacting upon, Commonwealth land, and actions by Commonwealth agencies

1.3 Environmental Aspects	For the purpose of the non-Aboriginal heritage assessment, the study area was defined as a 100- metre buffer around the project site. The area within the project site was further divided into three sections (western, central and eastern extents). This section deals with the project site as a whole but differentiates between the project site and the 100-metre buffer (study area). Only archaeological resources within the project site have been considered.

Table 1: Heritage items within the project site

Item Name	Register	Significance	Statement	Comments
Mascot (O'Riordan Street) Underbridge	ARTC s170 Register SHI 4801830	Local	The O'Riordan Street Underbridge has historical significance as part of the original infrastructure for the Botany Line. The bridge has aesthetic significance as a landmark structure across O'Riordan Street, however, has been obscured by advertising signage. The O'Riordan Street Underbridge has research significance as an early example of reinforced concrete girder construction, a technique which was eventually abandoned by the NSW railways.	Wholly within project site
Mascot (Robey Street) Underbridge	ARTC s170 Register SHI 4801848	Local	The Robey Street Underbridge has technical significance as the first welded steel railway bridge in New South Wales. The success of the fabrication and service of the Robey Street underbridge initiated the change over from riveted to welded steel construction, and bolts displaced rivets wherever non-welded joints had to be used. The Robey Street Underbridge has aesthetic significance as a landmark structure over Robey Street, however the significant fabric has been covered by advertising signage,	Wholly within project site

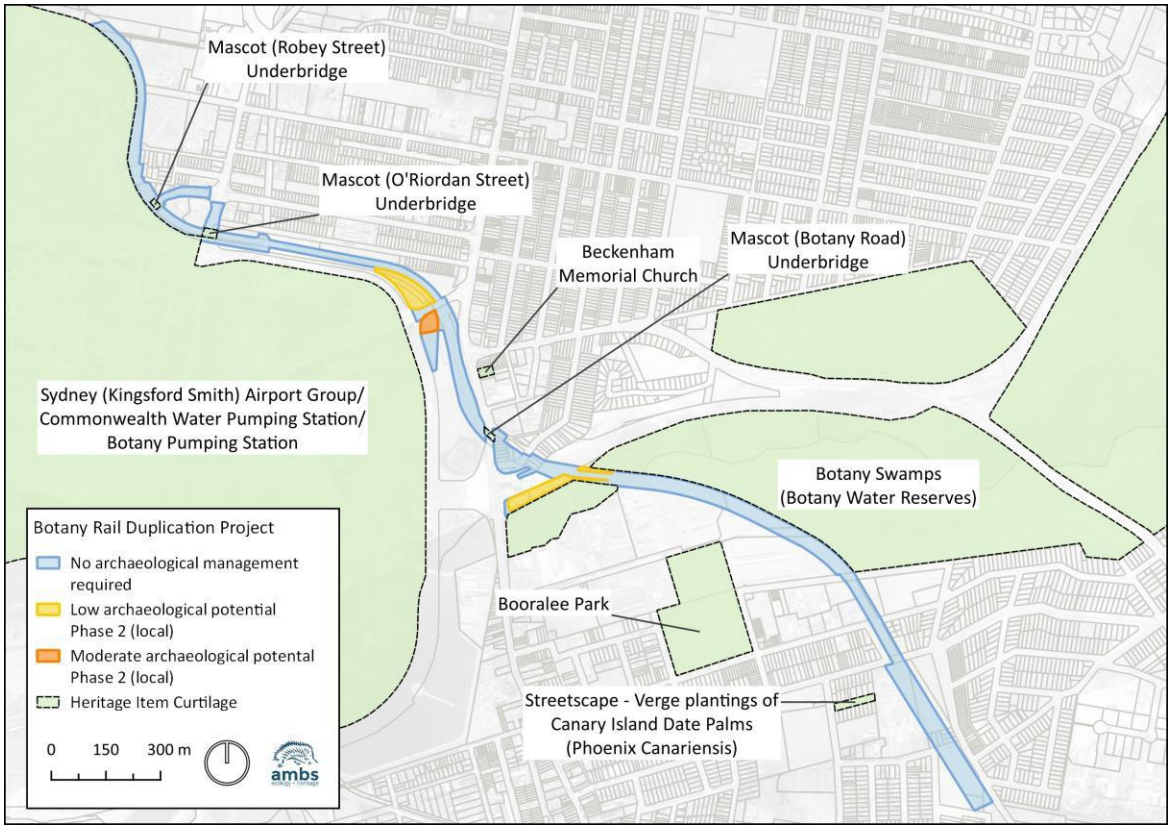
			reducing its aesthetic quality.	
Railway Bridge over Botany Road/Mascot (Botany Road) Underbridge	ARTC s170 Register SHI no. 4800248 Botany Bay LEP – I153	Local	The underbridge is historically significant as an integral component of the separate Botany Goods Line (1909 – 1925). The bridge is unusual in its construction method, employing reinforced slabs and steel girders to accommodate the skew in the span across Botany Road. The underbridge has aesthetic significance as a landmark structure over Botany Road with the brick arched piers and wing walls demonstrating fine workmanship.	Wholly within project site
Sydney (Kingsford Smith) Airport Group	Commonwealth Heritage List (Indicative Place) Register of the National Estate (Interim List) ID – 102669	State	The airport is a complex site covering over 900 hectares, with diverse buildings, structures, features and elements that contribute to its heritage values.	Curtilage is partly within the project site.

Table 2: Heritage items within study area

Item Name	Register	Significance	Statement	Comments
Streetscape –			It is historically significant for the evidence it provides of the somewhat dysfunctional pattern of development in this part of Botany in the late 19th and early 20th centuries, the wide verge being the result of two abutting subdivisions, each with a perimeter road, which, when both were completed and joined, created the generous reservation necessary to provide the physical and aesthetic space for	

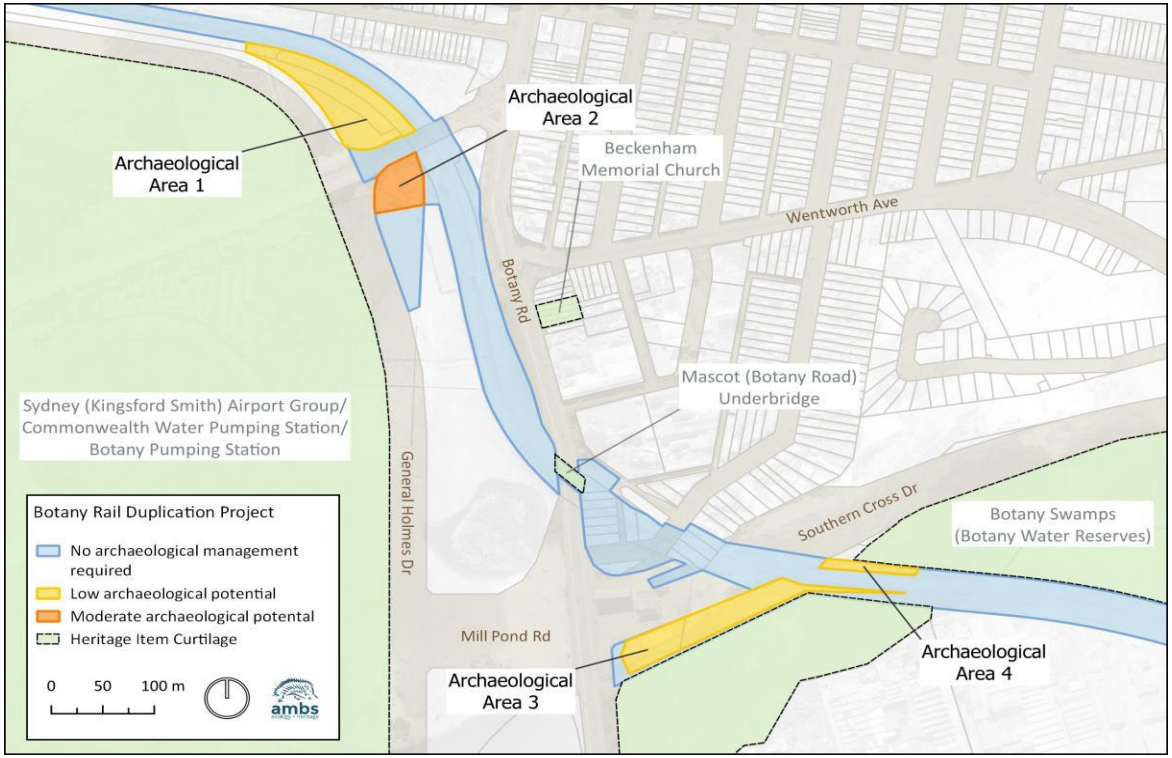
Verge plantings of Canary Island Date Palms (Phoenix Canariensis)	Botany Bay LEP–I65	Local	these significant trees. The streetscape is aesthetically significant for the spatial qualities established by this historical significance; and also demonstrates very good aesthetic values arising from the distinctive aesthetic qualities of the main plantings of the original Canary Island date palms (Phoenix canariensis)	Approximately 90m west of the project site.
Booralee Park	Botany Bay LEP–I61	Local	Booralee Park is a fine example of a late 19th century urban park which has remained the Botany community's primary area of open space and place of commemoration since its establishment in 1886.	Approximately 110m southwest of the project site.
Botany Water Reserves (also known as Botany Wetlands	State Heritage Register (SHR) Sydney Water s170 register	State	The item contains substantial remnants of structures and layout from Sydney's third main water supply system which supported the	Approximately 1m–10m north and south

Figure 1: Heritage items and archaeological potential in the vicinity of the site



1.4 Potential Archaeological Resources	**1.4.1 Historical Archaeology** Technical Report 9 of the EIS identified three areas of Low archaeological potential and one area of Moderate archaeological potential within the project site that will require archaeological management for the duration of the project. The remainder of the site was assessed as having no archaeological potential. The areas of archaeological potential have been numbered from 1-4 for the purposes of this Heritage Control Plan and future management.

Figure 2: Areas requiring archaeological management



Archaeological Area 1: Low potential

Archaeological Area 1 has been identified as having the potential to contain the archaeological remains of market gardens dating to the late nineteenth century. The poorly drained sandy soils ofthe area are likely to have leached much of the evidence of early agriculture from the upper deposits. While postholes of lightweight structures and fence lines may survive, their identificationas such may not be possible due to the lack of context. Rubbish dumps related to early activity andthe background scatters of artefacts associated with people working the land may survive. These kinds of remains are likely to be limited to the upper parts of the soil profile. Their significance is cumulative and is related to the information that can be gained from interpreting spatial relationships between contexts, intensities of activity, the patterning of agricultural space, and adaptation to the local conditions.

If intact and recognisable archaeological remains associated with the market gardens were found to survive within Archaeological Area 1, they would contain historical significance at a local level. They would represent early Chinese market

garden activities in Botany and Mascot which occurred following the Gold Rush and defined the area's cultural and built landscape into the mid-20th century.
The remains associated with the gardens may have the ability to yield information regarding practices that are unlikely to have been recorded at the time. Research topics could include landscape modification practices, crops being grown in 19th century market gardens, lifeways of their occupants/workers, consumption habits, construction methods and living conditions. The influence of European cultures and ideals on Chinese immigrants may also be distinguishable within the archaeological record in the form of building methods of evidence gathered from refusematerials. These remains would reach the threshold for significance at a local level.

Archaeological Area 2: Moderate potential

The EIS identified three structures that appear on an 1887 plan within Archaeological Area 2. The three structures are likely to represent a residence and outbuildings that were still standing in 1943and appear on the aerial photographs from that year. The exact age of the buildings is not known.If further research shows that the buildings were constructed before the 1870s, they may containunderfloor deposits, which are the richest source of information about the day to day lives, living conditions, status and activities of the occupants. Other features associated with the residence may include a well, cesspit, cistern and rubbish pits, which are often an important source of artefacts relating to the house and occupants. Footings and other structural material have the potential to tell us about the layout, quality, and function of the buildings.
If remains of the early residence are identified, they would represent some of the earliest domesticevidence in Botany and would have potential to meet the threshold of local significance.

Archaeological Areas 3 and 4: Low potential

Areas 3 and 4 may contain evidence of landscape modification and unrecorded structures associated with Simeon Lord's flour mill establishment. The potential archaeology is associated with large-scale landscape transformations and hydrology infrastructure.
If archaeological remains of this kind were present and intact within the study area, they would have potential to reach the threshold for State significance. This is largely due to their associationwith Lord, a successful entrepreneur who was one of the first Europeans to privately produce andsell cloth garments in Australia. His mill was one of the first industrial complexes in Botany and marked the beginning of the area's industrial development. These remains have potential to represent early modification activities required to prepare the area for these ventures and may yield information regarding early European landscape modification techniques and the nature of the landscape prior to their arrival. These would represent some of the earliest industrial and agricultural activities within NSW.

1.4.2 Aboriginal Archaeology

No Aboriginal places or objects were identified within the project site. Furthermore, due to the highly disturbed nature of the project site, intact archaeological deposits are not likely to be present below the ground surface. Therefore, the project is

	unlikely to impact any Aboriginal heritage items or places, potential Aboriginal archaeology or intangible cultural heritage values.
1.5 Heritage Impacts	**1.5.1 Impacts to Heritage Items** Construction of the project requires the demolition and replacement of two heritage items with local significance within the project site (the O'Riordan St and Robey St underbridges), resulting in a major impact on the fabric of the items. As part of the heritage management of the items, a s170 notification will be provided to Sydney Trains and the NSW Heritage Division prior their demolition in accordance with condition CNH6. The project would also include minor remediation works to the Botany Rd underbridge, however the item would be retained as part of the project. There will be minor visual impacts to the Botany Swamps item, and temporary peripheral impacts to the Sydney (Kingsford Smith) Airport Group. *Table 3 Identified impacts to heritage items*

Item	Visual Impact	Fabric Impact	Overall Impact
Mascot (Botany Road) Underbridge	Minor remediation works to the abutments and headstock of the existing Mascot (Botany Road) Underbridge are proposed for the project. The remainder of the bridge will be retained. Due to the level of modifications proposed under the project, visual impacts to the bridge are considered to be minor.	Remediation works will require minor modifications to the abutments and headstock of the existing Mascot (Botany Road) Underbridge. They are therefore considered to be a minor impact to the item as a whole.	Minor
Mascot (O'Riordan Street) Underbridge	Bridge demolition will have a major visual impact to the Mascot (O'Riordan Street) Underbridge as it will be permanently removed for the project. Views to and from the item will also be impacted.	Bridge demolition will have a major physical impact to the Mascot (O'Riordan Street) Underbridge and as it will be permanently removed for the project.	Major
Mascot (Robey Street) Underbridge	Bridge demolition will have a major visual impact to Mascot (Robey Street) Underbridge as it will be permanently removed for the project. Views to and from the item will also be impacted.	Bridge demolition will have a major physical impact to the Mascot (Robey Street) Underbridge and as it will be permanently removed for the project.	Major

	Botany Water Reserves (also known as Botany Wetlands or Botany Swamps)	Visual impacts associated with the addition of a new rail bridge over Mill Pond, retaining walls and embankments would result in a minor visual impact to the Botany Water Reserves.	-NIL	Minor
	Sydney (Kingsford Smith) Airport Group	Visual impacts to the Sydney (Kingsford Smith) Airport Group would be limited to minor and temporary works associated with the establishment of crane pads and stockpile/materials storage areas.	The construction boundary for the proposed works will extend 5m-20m within the heritage curtilage for the item. Works within the curtilage may involve vegetation clearing, stockpile areas and temporary crane pads.	Minor

1.5.2 Impacts to Archaeology

Construction of the project has a moderate potential to impact local and state significant archaeological remains which may be present in the project site and uncovered during construction. At the time of writing, there are no proposed impacts in the areas of Low and Moderate archaeology.

1.6 Mitigation Measures

1.6.1 Archival Photographic Recording

Photographic archival recording is a method of preserving visual evidence of the nature and condition of heritage items in their current condition and context. The record that is produced is a mitigation for impacts to, or the loss of an item. This information can then be accessed by stakeholders, researchers or interested members of the public.

The archival photographic recording for the project will mitigate the impacts to the Botany Road, O'Riordan Street, and Robey Street underbridges, and the alterations to the Botany Rail Line in accordance with condition CNH5.

Photographic archival recording and reporting will be carried out in accordance with the NSW Heritage Office's How to Prepare Archival Records of Heritage Items (1998), and Photographic Recording of Heritage Items Using Film or Digital Capture (NSW Heritage Office 2006) for the following items:

- Mascot (Botany Road) Underbridge
- Mascot (O'Riordan Street) Underbridge
- Mascot (Robey Street) Underbridge
- Existing nature and elements of the Botany Rail Line located within the study area.

	Additional recording may also take place during bridge removal. The study area comprises about four kilometres of the existing Botany Rail Line corridor which will also be documented in its current condition. AMBS' preferred photographer Alexander Mayes Photography Pty Ltd will be contracted toprepare all photographic recordings. Alexander has spent the last 14 years in the architectural community working and successfully delivery Photographic Archival Recordings. Alexander was Highly Commended in the National Trust 2015 Heritage Awards for his work at the former Clyde Refinery site, for AMBS, on behalf of Viva Energy Australia. Alexander has also been responsible for the extensive archival photographic recordings for the WestConnex M4 East and Sydney MetroChatswood to Sydenham projects, on behalf of AMBS. The archival recording will record all aspects of the item and will focus on the significance values of each structure, the way in which those values are expressed in the item's context, construction,evidence of its use and history, and the way in which it interacts with its environment. A standalonephotographic archival recording report will be produced for all items affected by the project, and a summary of the results will be included in the Heritage Report for the project in accordance withcondition E10. **1.6.2 Archaeological Management** In order to mitigate impacts to archaeological resources within the study area, the location of subsurface excavations are designed to avoid areas containing low or moderate potential for State and locally significant archaeology as identified in the EIS and Figure 2. A further Historical Archaeological Assessment and Research Design (HAARD) and associated monitoring and salvage was not considered necessary for this project by Heritage NSW (during the Submissions stage of the planning approval), with recommendations that the project proceeds with a site induction and an Unexpected Finds Protocol to cover historical archaeological 'relics' within the meaning of the Heritage Act 1977. The unexpected finds procedure (Section 1.6.3) will be implemented if impacts cannot be avoided to low or moderate potential areas, as detailed in CNH9. **1.6.3 Unexpected Heritage Finds Procedure** An unexpected finds procedure including a step-by-step process for encountering suspected heritage finds and suspected human skeletal remains has been prepared by AMBS for the project in accordance with condition E12, CAH1 and CNH9 (AMBS Ecology & Heritage 2021, *Botany Rail Duplication Unexpected Heritage Finds Procedure*. Consultancy report to John Holland Pty Ltd.) and presented in Appendix F. The unexpected heritage finds procedure will be implemented for the duration of construction during the CSSI works in accordance with condition E13. The unexpected heritage finds procedureand unexpected human skeletal remains procedure should be in place at all times, even after a heritage or archaeological clearance certificate has been provided for a works zone.

1.6.4 Working Near Heritage Items

A heritage induction will be prepared by AMBS that explains the heritage values of the items withinand adjacent to work areas. The induction will explain heritage curtilages and the legislative protection afforded to heritage items and will include maps and photographs of the relevant items,and will be presented to work crews at the start of works in each area. The induction will be in theform of a 1-2 page document or powerpoint slides that can be incorporated into site specific inductions or toolbox talks.

Heritage items in the vicinity of work areas will be clearly demarcated and fenced off where possible, in accordance with conditions CNH1, CNH2 and CNH3. For the Botany Water Reserves (also known as Botany Wetlands or Botany Swamps), where the site boundary follows the heritagecurtilage of the item, the following site specific management measures will be implemented:

- establishment of fenced exclusion zones around the item's SHR curtilage to prevent inadvertent impacts to the item prior to, and during construction of the project.
- engagement of an arborist to ensure significant plant species are not impactedduring the construction phase if impacts outside of the project footprint are proposed

Parts of the Mascot (Botany Road) Underbridge which are not proposed to be modified by the project will be protected during construction. The protection will be appropriate to the fabric which is at risk of being damaged, and to the nature of the works that are taking place in the vicinity. Protective measures may include protective barriers or pads around elements of the bridge to ensure impacts to fabric are avoided.
The heritage induction will identify significant elements of the Sydney Airport Group, and the heritage curtilage for this item where it is relevant to the project. An exclusion zone will be set upto protect individual elements of significance that are in the vicinity of the project works, or alongthe LEP curtilage wherever possible.

1.6.5 Botany Water Reserves

Should construction works to be required outside of the project footprint within the Botany Water Reserves the project Heritage Specialist and Ecologist will be consulted an arborist will be engagedto ensure significant plant species are not impacted by the works. For works in this area/near to the Botany Water Reserves, flagged exclusion zones will be established by the ecologist to ensure that significant plant species/PCT areas will not be impacted.. .

<table>
<tr><th colspan="2">ENVIRONMENTAL CONTROL PLAN:02 – Visual Amenity</th></tr>
<tr><td>2.1 Objective</td><td>The objectives of the Visual Amenity Control Plan are as follows:
Minimise impacts on existing landscape features as far as feasible and reasonable.
Minimise visual impacts from construction sites including light spill
Ensure the successful implementation of the Landscape Design.
Reduce visual impact of construction to surrounding community.</td></tr>
<tr><td>2.2 ISCA Targets</td><td>JH will pursue a rating under the IS Rating Scheme. Two credits within the IS Technical Manual V1.2 relate to Visual Amenity and will be targeted under this plan.
Hea-2 Crime Prevention
This Plan details how crime will be reduced during the construction phase through the implementation of crime prevention through environmental design (CPTED) measures.<ol start="2">
Dis-5 Light Pollution
This Plan details how measures to prevent light spill will be implemented during the construction phase.</td></tr>
<tr><td>2.3 Legal, Contractual and other requirements</td><td>Environmental Planning and Assessment Act 1979
Commonwealth Copyright Act 1968
Crime Prevention through Environmental Design (CPTED) principles
AS 4282-1997 Control of the Obtrusive Effects of Outdoor Lighting; and
AS/NZ 1158 - Lighting for Roads and Public Spaces (where relevant Australian Standards are applicable to BRD works)
NASF Guideline E: Managing the Risk of Distractions to Pilots from Lighting in the Vicinity of airports</td></tr>
<tr><td>2.4 Environmental Aspects and Impacts</td><td>The key aspects and potential impacts associated with the management of visual amenity during the delivery of Botany Rail Duplication are listed in Table 1
Table 1 Visual Amenity Aspects and Potential Impacts
<table>
<tr><th>Aspects</th><th>Potential impacts/opportunities</th></tr>
<tr><td>Litter</td><td>• Potential for waste to not be placed in appropriate bins and result in litter around the construction worksites
• Increase security may reduce illegal dumping</td></tr>
<tr><td>Graffiti</td><td>• Potential for site fencing or other exposed surfaces to be vandalised.</td></tr>
<tr><td>Lighting</td><td>• Potential for site lighting to affect the amenity of surrounding land uses including Sydney Airport</td></tr>
<tr><td>Traffic and Transport</td><td>• Potential for required traffic control signage to increase visual clutter surrounding construction sites</td></tr>
</table></td></tr>
</table>

	Landscaping	• Potential for visual impact from weeds during construction prior to landscaping
	Fencing/Temporary Site Facilities	• Potential to create visual impacts and graffiti space

2.5 Mitigation Measures

In addition to the mitigation measures detailed below, all mitigation measures listed in the Risk Assessment will be implemented for the enabling works.

Item	**Responsibility**
General	
Visual mitigation measures will be implemented as soon a feasible and practical and remain in place during the construction period.	Environment Manager, Communications and Community, Liaison Manager, Project Engineer, Site Superintendent
Opportunities for the retention and protection of existing trees will be identified during detailed construction planning	Construction Manager, Superintendent, Environmental Manager
The placement of CCTV cameras (where required) will be undertaken in consultation with the relevant public authority and the NSW Police.	Construction Manager, Design Manager, Superintendent
Temporary Works	
Elements (for example material stockpiles) within construction sites would be located to minimise visual impacts, where feasible and reasonable	Superintendent / Environmental Coordinator
Site sheds will be located to minimise visual impact where it is feasible and reasonable to do so.	Project Engineer, Environmental Coordinator
Site sheds to be maintained in an appropriate condition. Existing buildings will be used where practical and feasible will be maintained to a high standard.	Construction Manager
Where landscaping is impacted outside the rail corridor during construction, opportunities for reinstatement will be identified (where possible) in consultation with affected property owners to minimise visual impacts.	Construction Manager/ Project Engineer/ Environmental Manager
Temporary site facilities must satisfy the sustainability requirements - TSWD Appendix 20 - Sustainability Requirements.	Construction Manager, Sustainability Manager
Lighting Consideration	
Temporary lighting required during the construction period will be sited and designed to avoid light spill into residential	Superintendent, Project Engineer, Environmental Manager

properties. Particular consideration will be given to works near Baxter Road, McBurney Avenue and between Myrtle Street and Stephen Road which are located close to residential properties and hotels. Preference will be given to battery powered LED lighting towers at these locations.		
All permanent external lighting will comply with AS: 4282:1997 — Control of the Obtrusive Effects of Outdoor Lighting and relevant Australian Standards in the series AS/NZ 1158 — Lighting for Roads and Public Spaces (as relevant to BRD works).	Design Manager / Project Design Team	
Any lights required will be directed onto the site, with a maximum position angle of 30º from vertical, and back spill shields, therefore minimising any unwanted light spill and impacts at night including reflected glare. Lighting will be assessed and implemented to comply with the CASA Manual to prevent light spill in the direction of incoming Sydney Airport aircraft.	Construction Manager, Project Engineer, Site Superintendent	
Hoarding Banners, Fencing and Signs		
Shade cloth screening on site boundary fencing will be provided where works or compound sites are being undertaken in close proximity to residential areas to screen street level views into the construction site, such as: • Myrtle Street • Bay Street • Ellis Street • Banksia to Morgan Street For areas where there is a public interface such as Qantas Drive,GHD, Robey Street and O'Riordan Street ARTC signed shade cloth will be applied to the site boundary fencing providing the Project details.	Construction Manager, Project Engineer, Site Superintendent	
Proposed retaining wall finishes will be selected to align with the projects urban design and landscaping principles and aim to minimise adverse visual impact. These treatments will be aligned with the urban design concepts of the Sydney Gateway road project between O'Riordan and Robey Streets as well as	Design Manager / Project Design Team	

	the requirements of the relevant lease agreements for areas of additional lands..	
	Hoarding / noise barriers (during construction phase) will be maintained in an excellent condition with prompt removal of graffiti.	Superintendent, Environmental Coordinator
	Fencing, walls, and hoarding (during construction) will be designed and implemented with set back from infrastructure to avoid being used as a climbing aid. Including investigation of pruning vegetation if limbs are close to infrastructure	Construction Manager, Project Engineer Communications and Community Liaison Manager
	Signage will be utilised to clearly define and designate areas with respect to their intended use to the public and construction workers on access.	Superintendent, Project Engineer, Communications and Community Liaison Manager
	Hoardings and fencing installed must be made from as-new materials and must always be maintained in a neat and tidy condition and be sympathetic with the surroundings.	Construction Manager, Project Engineer/Superintendent
	Permanent Design	
	The proposed twin bridges at Robey and O'Riordan Streets and Southern Cross Drive will be designed to minimise visual clutter.	Design Manager / Project Design Team
	All bridges will incorporate measures to discourage graffiti.	Design Manager / Project Design Team
	Billboards	
	The removal, and reinstatement of billboards will be undertaken in consultation with land owners and billboard owners	Construction Manager, Interface Manager, Project Engineer/Superintendent
	Billboards will be replaced like for like. If replacement and relocation is not available, the affected parties will be appropriately compensated under the Land Acquisition (Just Terms Compensation) Act 1991.	Construction Manager, Interface Manager, Commercial Manager
2.6 Monitoring, Auditing and Reporting	Weekly Environmental Site inspections will be undertaken by the Environmental Manager/Coordinator, Site Supervisor and nominated Site and Project Engineers. The visual inspections will target: • Rubbish • Litter • Graffiti	

	• Surplus Material Daily inspections by Site Supervisors, including inspection of the following: • Construction site hoarding and perimeter site areas • Scaffolding, and other site structures • Lighting structures Periodic Joint Environment Inspections attended by representatives of the Environment and Sustainability Team, Environment Representative, and representatives from ARTC. This will include inspection of the following: • The condition of any site hoarding and fencing • Position and direction of any site lighting • Site housekeeping. Inspection reports will be prepared following site inspections to document any relevant observations made and identify any issues to be rectified in relation to visual amenity and timing for rectification. Typical Compliance records would consist of: • Inspections undertaken in relation to visual amenity measures management measures (such as graffiti and deterioration of hoarding or vegetation) • Weekly Environmental Inspection forms • Toolbox training records. Results and outcomes of inspections, monitoring and auditing will be reported internally on a monthly basis.

ENVIRONMENTAL CONTROL PLAN:03 – Air Quality	
3.1 Objective	The key air quality objective for the BRD Works is to minimise dust and exhaust emissions during construction to maintain ambient air quality that provides for the adequate protection of human health. This objective is consistent with the Approved Methods for Modelling and Assessment of Air Pollutants in NSW (EPA 2016)
3.2 Target	The air quality parameters of most relevance to the BRD works are PM10 (particulate matter with a diameter less than or equal to 10 microns), deposited dust, and total suspended particles (TSP). Diesel combustion emits a number of particulate compounds and these may also be subject to management procedures. These compounds include sulphur dioxide (SO2), nitrogen dioxide (NO2), and carbon monoxide (CO). The targets for air quality and dust management are to: • Minimise gaseous and particulate pollution emissions from construction activities as far as feasible and reasonable • Identify and control potential dust and air pollutant sources
3.3 Legal, contractual and other requirements	The key legislation relevant to air quality management includes: ▪ Environmental Planning and Assessment Act 1979 ▪ Protection of the Environment Operations Act 1997

<table>
<tr><td></td><td>

Protection of the Environment Operations (Clean Air) Regulations 2010
AS 3570 – Automotive Diesel Fuels
Safe Work Australia 2019 – Workplace Exposure Standards for Airborne Contaminants
National Environment Protection Council 2017 – Ambient Air: National Environment Protection Measure for Ambient Air Quality
NSW EPA 2016 – Approved Method for Modelling and Assessment of Air Pollutants in NSW
AS 2922 Ambient Air – Guide for the Siting of Sampling Units
AS 3580.10.1-2017 Methods for sampling and analysis of ambient air – Determination of particulates – Deposited matter - Gravimetric method
AS 2724.3-1984 Ambient Air – Particulate Matter – Determination of Total Suspended Particulates (TSP) – High Volume Sampler Gravimetric Method
National Environment Protection Measure (NEPM) (Diesel Vehicle Emissions)
OEH’s Smokey Vehicles Program under the NSW Protection of the Environment and Operations Act 1997 and NSW
Protection of the Environment and Operations Clear Air Regulations 2010.

</td></tr>
<tr><td>3.4 Aspects and Impacts</td><td>
The key aspects and potential impacts in relation to the overall management of air quality during the works are listed in Table 1 below. These are key identified risks for the overall management of air quality during the works.
Table 1: Air Quality Aspects and Potential Impacts
<table>
<tr><th>Aspects</th><th>Potential Impacts</th></tr>
<tr><td>Worksite establishment</td><td>Dust generation from:
Clearing, grubbing, and stripping of vegetation
Wind erosion of exposed surfaces and stockpiles
Wheel-generated dust from vehicular traffic on unsealed roads and work site access points
Asbestos or contaminated soil removal (if encountered)
Particulate matter (PM10) generation due to:
Operation of construction vehicles and plant</td></tr>
<tr><td>Utility and Signalling Works</td><td>Dust generation due to:
Operation of excavators and other plant on exposed surfaces
Particulate matter (PM10) generation due to:
Operation of construction vehicles and plant</td></tr>
<tr><td>Civil / Structural Works</td><td>Dust generation from:
Movement of construction vehicles over unsealed work areas
Movement of construction equipment, generators and other plant over unsealed work areas
Particulate matter (PM10) generation due to:
Operation of construction vehicles and plant</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><td></td><td>
<table>
<tr><td>Rail Systems Construction</td><td>Dust generation from:
Movement of construction vehicles over unsealed work areas
Movement of construction equipment, generators, and other plant over unsealed work areas
Tamping
Placement of capping
General earthworks and stockpiling
Particulate matter (PM10) generation due to:
Operation of construction vehicles and plant
Track grinding
Fumes from cutting of tracking</td></tr>
<tr><td>Spoil Handling Storage and Transport</td><td>Dust generation from:
Spoil stockpiles
Spoil haulage (covered loads)
Wheel generated dust from heavy vehicle movements
Particulate matter (PM10) generation due to:
Operation of construction vehicles and plant</td></tr>
<tr><td>Contamination</td><td>Risks associated with specific contamination have been included in the Soil and Water Management Plan (XXX) and Asbestos Management Plan along with the relevant mitigation measures.</td></tr>
</table>
</td></tr>
<tr><td>3.5 Air Quality Management Measures</td><td>
Air Quality and Dust Mitigation Measures

Pre-construction:
• Identify sensitive land uses/sensitive receivers in the Site Environmental Plan (SEP) prior to works commencing.
• Incorporate information on dust sources, impacts and mitigation measures and methods of managing emissions into Site Inductions, training and on-going Toolbox Talks.
• Dust minimisation measures would be developed and implemented prior to commencement of construction
Site establishment:
• Construction site layout and placement of plant would consider air quality impacts to nearby receivers.
• Waste or any other material must not be burnt on construction sites.
• Temporary spoil stockpiles during site establishment are to be maintained, e.g., hosed down or covered.
• Wind breaks, which may include site hoardings, may be constructed where construction works are near sensitive receivers (where feasible and reasonable).
• Boundary screening will be established around major ancillary facilities that are adjacent to sensitive receivers. The boundary screening will minimise any air quality impacts on the adjacent sensitive receivers.
Demolition:
• Water suppression to be used during demolition (including bridges) to minimise dust generation as required.
</td></tr>
</table>

	General construction: • Undertake on-going monitoring for dust (e.g., site inspections) to assess the effectiveness of mitigation measures. • A sweeper and/or water cart will be used to clean dirt tracked on hardstand, pavements, or roads. • Water sprays and/or water carts to be used as required for dampening exposed surfaces to control dust generation. • A polymer/soil binder will be applied to haul roads and exposed batters to control dust. • Silt accumulated in sediment control devices (e.g., silt fences and spoon drains) to be removed on a regular basis to prevent dust generation. • Cutting, grinding, or sawing equipment must only be used in conjunction with suitable dust suppression techniques, such as water sprays or local extraction • Dust generating activities would be assessed during periods of strong winds and rescheduled, where required. • Exhaust systems of construction plant, vehicles, and machinery to be maintained to minimise exhaust emissions to the atmosphere. All equipment and vehicles are to be regularly maintained and records kept of maintenance. • Vehicles and construction plant are subject to a pre-acceptance checks before arriving to site. • Engines will be switched off when vehicles and plant are not in use, to minimise idling, and refuelling areas will be away from areas of public access and sensitive receivers. • Where practical, preference will be given to battery powered equipment such as lighting towers to reduce emissions from diesal plants. • During excavations works in areas of previously identified asbestos, air quality monitoring will be carried out by a suitably qualified person or as required by the Asbestos Management Plan (Construction Soil and Water Management Plan) • Construction plant and equipment will be well maintained and regularly serviced so that vehicular emissions remain within relevant air quality guidelines and standards. • Low emission vehicles and plant fitted with catalysts, diesel particulate filters or similar devices would be used, where feasible and reasonable. • Monitoring emissions of plant and construction vehicles to ensure they have appropriate emissions controls and are maintained correct • Haul routes and plant (including generators) to be sited away from sensitive receivers, such as dwellings and schools, where feasible and reasonable. • Workers will be encouraged to use public transport, and consider other modes of transport such as car-pooling (refer to Sustainability Management Plan) • Precautions would be implemented to prevent the occurrence of smoke emissions or fumes from site plant or stored fuel oils. **Spoil handling, storage and transport:** • Site access roads will be stabilised to minimise tracking of materials from site. • Vehicles hauling spoil to stay on the designated roads and access tracks • Trucks carrying spoil onto or off site are to be covered. Tailgates, under-rigs, wheels, and towing apparatus of all trucks to be checked to ensure they are clean and secure, prior to leaving the worksite

	• Stockpiles will be located away from sensitive receivers, where feasible and reasonable, and protected from the elements through barriers, covering, or establishing a cover crop. • Unsealed haul roads must be regularly damped down • Appropriate site speed limits will be imposed and signed on haul routes. • Hard surfaces would be installed on long term haul routes and regularly cleaned. • Wheel-wash facilities or rumble grids will be provided and used near the site exit points, as appropriate **Extreme weather conditions:** • Reprogramming of dust generating activities during works is to occur during periods when control of dust cannot be achieved to reduce nuisance to neighbouring properties. • Dust generating activities would be assessed during periods of strong winds and rescheduled where required. **Site Shutdown periods:** • Prior to a planned period where site is to be closed for a period of longer than two days, where no works or deliveries are to be undertaken, a site inspection will be carried out to identify any additional measures be put in place to ensure the site is stable.
3.6 Monitoring and Inspection	Monitoring the impacts from dust generating activities will be undertaken using visual inspections of onsite construction activities in conjunction with the prevailing and forecasted meteorological conditions. This risk based approach will highlight the effectiveness of implemented dust controls and the need for any additional mitigation measures. Visual inspections will be undertaken by Site Supervisors, Site Engineers and the Environment Team periodically to ensure construction activities are not generating excessive amounts of dust with the potential to adversely impact nearby receivers. Site Supervisors will inspect sites daily and record observations in their Site Diary as necessary. These inspections will document environmental issues observed, including any dust or other air quality issues, and required actions. The Environment Team will conduct weekly environmental inspections accompanied by site delivery personnel for active works areas. In addition, the Independent Environmental Representative will conduct regular inspections of active works areas and may raise observations and actions during these inspections. Site inspections will include monitoring the following key mitigation measures: • Dust covers on haulage trucks are in place prior to leaving the site and whenever the load is in transit • Stockpiles, spoil movements and cleared areas are being managed in accordance with the Construction Soil and Water Management Plan • Inspection of public roads adjacent to access gates for tracked dust or mud. If dust is visible and leaving site, the construction activities causing this will be suspended and/or relocated/modified/reduced until the emission of dust generated in minimised to the greatest extent possible. Any dust leaving site will be recorded as an environmental incident. Monitoring of Plant and Vehicle Emissions

	Inspections of plant and construction vehicles will be undertaken to ensure that they have appropriate emission controls that are being maintained correctly. The following monitoring requirements will be implemented: • Inspections of plant and vehicles will be undertaken for all new plant/equipment coming onto site. • Records of plant/equipment maintenance will be maintained • Inspections of plant to ensure there is no unnecessary running of plant and vehicles or any excessive emission of fumes or smoke. Meteorological Monitoring Monitoring local meteorological conditions can provide information on the risk of dust to become airborne and mobilised from onsite construction activities and any exposed areas. The use of predetermined alert values for some meteorological parameters can be used to trigger specific mitigation measure or action plans to prevent and/or minimise dust and impacts to air quality. Daily weather monitoring will be conducted using data from the Sydney Observatory Hill weather station, accessed via the Bureau of Meteorology website (http://www.bom.gov.au). The Sydney Observatory Hill weather station is located approximately 8.5km away from the BRD project and provides weather updates every half hour.
3.7 Compliance and Reporting	The weekly environmental inspection form will be used as an instrument to record the weather conditions, the construction activities and comments about air-quality impacts. Typical Compliance records would consist of: • Inspections undertaken in relation to air quality management measures • Environmental Inspection forms • Toolbox training records • Plant Induction forms • Records of any meteorological condition monitoring • Records of any management measures implemented because of adverse, windy weather conditions. • Records of air quality and dust inspections undertaken. Results and outcomes of inspections, monitoring and auditing will be reported internally monthly.

<table>
<tr><th colspan="3">ENVIRONMENTAL CONTROL PLAN:04 – Waste and Recycling</th></tr>
<tr><td>4.1 Objective</td><td colspan="2">The following waste objectives will apply to the construction of the BRD works:
• Minimise waste throughout the project life-cycle.
• Waste management strategies will be implemented in accordance with the WARR Act management hierarchy as follows:
- Avoidance of unnecessary resource consumption.
- Resource recovery (including reuse, reprocessing, recycling and energy recovery).
- Disposal.
• Demonstrate best practice waste management processes as measured by the Infrastructure Sustainability Council of Australia’s (ISCA) Infrastructure Sustainability (IS) Rating Tool Version 1.2.</td></tr>
<tr><td>4.2 Target</td><td colspan="2">The BRD works will target the following with regards to waste management:
▪ 100% beneficial reuse of re-usable spoil.
▪ 90% of inert and non-hazardous construction and demolition waste, excluding spoil as it is recycled or alternatively beneficially reused.
▪ 60% of office waste is recycled or alternatively beneficially reused.</td></tr>
<tr><td>4.3 Legal, contractual and other requirements</td><td colspan="2">The key legislation relevant to spoil management includes:
▪ Environmental Planning and Assessment Act 1979
▪ Protection of the Environment Operations Act 1997
▪ Protection of the Environment Operations (Waste) Regulation 2005
▪ Waste Avoidance and Resource Recovery Act 2001
▪ Waste Classification Guidelines, Part 1: Classifying Waste (EPA November 2014)
▪ Waste Classification Guidelines, Part 4: Acid Sulfate Soils (EPA November 2014)
▪ NSW Waste Avoidance and Resource Recovery Strategy 2014-21 (EPA 2014)
▪ NSW Government’s Waste Reduction and Purchasing Policy
▪ NSW Government Resource Efficiency Policy
▪ Environmental Best Practice Guidelines for Concreting Contractors (Department of Environment and Conservation, 2004)
▪ Local government guidelines for waste / recycling as appropriate
▪ Australian Dangerous Goods Code 7th Edition (ADG7.4) (National Transport Commission, December 2015)</td></tr>
<tr><td>4.4 Aspects and Impacts</td><td>Aspects</td><td>Potential Impacts</td></tr>
<tr><td></td><td>Resources</td><td>Excessive volumes of waste directed to landfill from the inadequate collection, segregation, classification and disposal of waste.</td></tr>
</table>

	Contamination	Contamination of soil, surface and/or groundwater from the inappropriate storage, transport and disposal of liquid and solid wastes.
	Spoil	Unsuitable spoil for reuse generated during earthworks requiring treatment/disposal.
	Litter	Potential for waste to not be placed in appropriate bins and result in litter around the construction worksites and potential to enter stormwater drains.
	Pests	An increase in vermin from the incorrect storage, handling and disposal of putrescible waste from construction compounds.
	Soil and Water	Pollution from the incorrect storage, handling and disposal of waste.

4.5 Waste Management Measures

4.5.1 Waste hierarchy

Waste management for the Project works will be prioritised according to the principles of a resource management hierarchy embodied in the WARR Act. The hierarchy is as follows:

- Avoidance of unnecessary resource consumption
- Resource Recovery (including reuse, reprocessing, recycling and energy recovery)
- Disposal

The key waste streams from the works are:

- Excavated material
- Construction waste
- Demolition waste
- Vegetation/green waste
- Liquid waste

4.5.2 Waste classification

All waste generated will be assessed, classified and managed in accordance with the EPA's Waste Classification Guidelines (EPA 2014a) prior to despatching the waste offsite. In the event that waste is not pre-classified or further clarification on waste disposal options is required, contact the Project Environmental Manager.

4.5.2.1 Resource Recovery Orders and Exemptions

Clause 51 of the Protection of the Environment Operations (Waste) Regulation 2005 enable the EPA to grant orders and exemptions to the licensing and payment of levies for the land application or use of waste. The EPA has issued general orders and exemptions for a range of commonly recovered, high volume and well characterised waste materials that allow their use as fill or fertiliser at unlicensed,

off-site facilities. The general Resource Recovery Exemptions (RRE) that may be applicable to the enabling works scope are defined in Table 4.1 below. These are general gazette exemptions that do not require approval. A specific order may be granted where an application is made to the EPA.

Table 4.1 Resource Recovery Orders/Exemptions

Order / Exemption	**General Conditions (**Note: the below conditions provided for each waste type are an overview only. Please refer to the relevant RRO/RRE for further details and compliance with requirements)
The excavated natural material order 2014 The excavated natural material exemption 2014	The chemical concentration or other attributes of the excavated natural material listed in the Excavated Natural Material Order must not be exceeded. The excavated natural material can only be applied to land as engineering fill or used in earthworks. ENM handling, processing and testing requirements are outlined in detail in the exemption.
The Australian Rail Track Corporation Excavated Material Order 2019	The chemical concentrations or other attributes of the order must not be exceeded. Material can be applied to land for the purposes of earthworks (land zoned for industrial uses only), building or maintaining railway infrastructure or within the public road corridor.
The mulch order 2016 The mulch exemption 2016	The raw mulch can only be applied to land for the purposes of filtration or as a soil amendment material or used either singularly or in any combination as input material(s) to a composting process. The consumer must land apply the raw mulch within a reasonable period of time.
The recovered aggregate order 2014 The recovered aggregate exemption 2014	The chemical concentration or other attribute of the recovered aggregate listed in the Recovered Aggregate Order must be met. The recovered aggregate can only be applied to land for road making activities, building, landscaping and construction works. This approval does not apply to any of the following applications: Construction of dams or related water storage infrastructure, Mine site rehabilitation, Quarry rehabilitation, Sand dredge pond rehabilitation, Back-filling of quarry voids, Raising or reshaping of land used for agricultural purposes, and Construction of roads on private land unless: the relevant waste is applied to land to the minimum extent necessary for the construction of a road, and a development consent for the development has been granted under the relevant Environmental Planning Instrument (EPI), or it is to provide access (temporary or permanent) to a development approved by a Council, or the works undertaken are either exempt or complying development.

The blast furnace slag order 2014 The blast furnace slag exemption 2014	Blast furnace slag or blended slag can only be applied to land in cementitious mixes such as concrete or in non-cementitious mixes such as an engineering fill in earthworks or roadmaking activities.
The reclaimed asphalt pavement order 2014 The reclaimed asphalt pavement exemption 2014	Reclaimed asphalt can only be applied to land for road related activities including road construction or road maintenance

The conditions applicable to the RRE and RRO (for any exemptions that may be used for the Project) will need to be complied with and evidence maintained in Sharepoint for auditing purposes. This includes

- The Order outlines the responsibilities of the Supplier, and the Exemption outlines the responsibilities of the person applying the material to land. If documentation clearly demonstrating compliance with the relevant Order cannot be provided by the Supplier, the material should be rejected for further consideration.
- Compliance with the requirements of the Order must be provided to and reviewed by the Environment Team (including any testing and /or notification requirements in accordance with the applicable RRO) who must approve the material for importation prior to commencing import. This will include confirmation that the material does not contain asbestos. This information will be documented in the import register.

4.5.3 Waste avoidance and minimisation

Waste minimisation, reuse and recycling practices will be implemented in accordance with the waste hierarchy. The following details strategies to be implemented during the BRD works to minimise the amount of waste generated that is sent to landfill.

4.5.3.1 Reuse and recycling initiatives

To ensure the highest percentage of demolition and construction waste is re-used or recycled, JHG will engage with subcontractors to emphasise the waste management and diversion targets on the Project. The targets will be detailed within the Subcontractor Requirements Pack for relevant subcontracts.
Mixed construction waste will be sorted for recyclables on site where feasible or off site (at recycling yard) when using mixed recycling bins. Paper and cardboard recycling will be contained separately from other waste materials.
Office waste receptacles i.e. printer cartridges, paper and cardboard, mixed recyclables etc. will be provided to maximise office waste recycling.

	JH will continue to investigate opportunities for recycling and reuse of other non-putrescible general solid wastes, other than construction and demolition waste, and office waste. This may include onsite reuse of green waste, and recycling of items such as soft plastics and disposable ear plugs. Spoil reuse opportunities will be sought and maximised, targeting 100% reuse of reusable spoil generated during delivery of the BRD works. This may involve seeking Resource Recovery Exemptions. *4.5.3.2 Purchasing and procurement* JH will negotiate packaging take-back agreements with suppliers and include this as a criterion for consideration during selection of suppliers. Bulk purchases will be preferred, and quantities of materials accurately calculated to limit the amount of associated packaging brought to site. *4.5.3.3 Minimising materials usage* The works will place a significant demand on a range of resources, including both primary and secondary materials that have undergone some degree offsite processing. This demand has the potential to create a resource depletion risk. To manage this risk, JH will adopt the following materials and waste management hierarchy during the works: Reduce, Re-use, Recycle. The Sustainability Management Plan outlines strategies to sustainably manage materials used during the works and minimise the materials footprint. **4.5.4 Hazardous waste** As per the EPA's Waste Classification Guidelines the following waste types (other than special waste or liquid waste) have been pre-classified by the EPA as 'hazardous waste': • Containers, having previously contained a substance of Class 1, 3, 4, 5 or 8 within the meaning of the Transport of Dangerous Goods Code, or a substance to which Division 6.1 of the Transport of Dangerous Goods Code applies, from which residues have not been removed by washing or vacuuming • Coal tar or coal tar pitch waste (being the tarry residue from the heating, processing or burning of coal or coke) comprising of more than 1% (by weight) of coal tar or coal tar pitch waste • Lead-acid or nickel-cadmium batteries (being waste generated or separately collected by activities carried out for business, commercial or community services purposes) • Lead paint waste arising otherwise than from residential premises or educational or child care institutions • Any mixture of the wastes referred to above. JH will endeavour to avoid the production of hazardous waste. This will involve implementing strategies such as: • Avoiding the procurement and use of hazardous chemicals where benign alternatives are available

- Where use of hazardous chemicals cannot be avoided, they are to be procured in sizes and types of container that will minimize material losses
- Minimising the risk of spills and leaks through implementation of adequate controls

4.5.5 On-site storage, transportation and disposal

4.5.5.1 On-site storage

General waste and recyclables will be disposed of in containers/ bins and collected on a regular basis. Worksites will be free of litter and good standards of housekeeping will be maintained throughout construction. Regular inspections by both the Environment and Sustainability Team and the Health and Safety Team will be undertaken to ensure a high standard is maintained.
Where spoil is to be stockpiled, stockpiles will be managed and segregated to avoid cross contamination between, topsoil/fill, spoil containing asbestos/restricted/hazardous waste, GSW, ENM and VENM.
Waste classified as 'special waste' or 'hazardous waste' (EPA, 2014) will be carefully segregated (or excavated and placed as separate stockpiles) at demarcated and contained locations. These areas would be appropriately bunded and stockpiles would be covered with anchored geotextile or impermeable plastic sheeting. Where practicable hazardous waste will be stored in an appropriate container (e.g. a waste skip). Should the hazardous waste have the potential to produce contaminated leachate, the material will be stored in an area with an appropriate leachate collection system.

Waste fuel, oils and other hazardous chemicals will be stored in well ventilated, bunded areas prior to removal by licenced waste contractors.
Measures will be implemented to minimise waste attracting wildlife, including food waste stored in covered bins and waste removed from site regularly.

4.5.5.2 Waste transportation and disposal

Where waste produced from the works cannot be reused on site, it will be transported from site using an appropriately licensed waste management contractor. Contractors will be required to provide tracking receipts to confirm appropriate disposal of waste from worksites and will be required to report waste quantities in accordance with the Subcontractor Requirements Pack. Specialist licenced waste contractors will be used when removing 'special waste' or 'hazardous waste' in accordance with the Protection of the Environment Operations (Waste) Regulation 2005. Waste truck loads will be covered, and tailgates secured prior to trucks leaving the worksite.
All waste disposal facilities must be appropriately licenced to accept the classified waste type. Prior to waste being taken to a waste facility, the BRD Environment Manager must review and approve the proposed waste facility. Contractors will be required to submit the relevant documentation for review including a letter confirming the types of waste the site can lawfully receive and a S143 form.

	4.5.5.3 Energy Conservation and Energy Efficiency Practices Sustainability opportunities and initiatives including energy conservation and efficiency practices will be identified and developed through Construction Opportunity Workshops. The sustainability team will work with the construction team to identify and implement the initiatives in procurement and construction. Energy conservation and efficiency practices to be investigated in the workshops include: Reducing travel distances for waste disposal Maximising on-site reuse of waste products Material optimisation to minimise production of waste Imported material to be sourced from within the Greater Sydney Region **4.5.6 Waste tracking and reporting** Waste (including spoil) removed from site will be tracked using the Waste Tracking Register This register will be completed by engineering staff and will capture information including: • Date transported • Haulage contractor • Material type • Waste classification • Quantity • Waste receival location • Truck registration • Docket numbers (haulage, receival, weighbridge) Waste dockets associated with removal and disposal of waste (including spoil) are to be retained and referenced in the Waste Tracking Register. Soil classification reports are also to be retained. Records can be provided to ARTC upon request.

ENVIRONMENTAL CONTROL PLAN:05 – Biodiversity/Flora and Fauna	
5.1 Objective	The objective of the FFMP is to ensure that all avoidance, mitigation and management measures relevant to the protection of native flora and fauna including threatened species and Threatened Ecological Communities (TECs) are implemented. The relevant avoidance, mitigation and management measures are referred to in: • The Environmental Assessment prepared for the Project, including the EIS, Technical Report Number 4 within the EIS and the Response to Submissions on the EIS; and, • Conditions of Approval (SSI 9714) granted to the project on 28 July 2020.
5.2 Target	The target of the FFMP is to describe and implement all feasible measures to avoid and minimise impacts on terrestrial and aquatic biodiversity. Within this framework, Biodiversity Offsets and/or supplementary measures, which are equivalent to any residual impacts of project construction and operation, are implemented to achieve the desired targets. The targets of the project are: ▪ Avoid flora and fauna impacts that have not previously been defined and assessed in the EIS; ▪ Ensure no more than 0.72 ha of TEC's are cleared; and, ▪ Avoid injury to all fauna where practicably possible. ▪ Deliver a net increase in trees for the project
5.3 Legal, contractual and other requirements	▪ Environment Protection and Assessment Act 1979 (EP&A Act) ▪ Biodiversity Conservation Act 2016 (BC Act) including Biodiversity Regulation 2017 ▪ Environmental Protection and Biodiversity Conservation Act 1999 (EPBC Act) ▪ Fisheries Management Act 1994 (FM Act) ▪ Water Management Act 2000 (WM Act) ▪ Biosecurity Act 2015 (BS Act) ▪ National Parks and Wildlife Act 1974 (NPW Act) ▪ State Environmental Planning Policy (Coastal Management) 2018 (Coastal Management SEPP)
5.4 Environmental Aspects	**5.4.1 Plant Community Types and Threatened ecological communities** Two Plant Community Types (PCTs) were identified within Project Corridor (**Table 3**). Both were found to conform to TECs listed under the NSW BC Act. Details of these PCTs are provided in **Table 3** (Threatened (or otherwise significant) flora species) and their location in relation to the project is shown on the Sensitive Area Plans included at the CEMP. The remaining vegetation/habitats within the project corridor was characterised as either: • Miscellaneous ecosystem – highly disturbed areas with no or limited native vegetation • Miscellaneous ecosystem – urban exotic / native landscape plantings; or, • Miscellaneous ecosystem – water bodies While these areas may contain plant species native to NSW, they do not conform to descriptions of PCT's and are therefore not assessed as a PCT in the BAM. Native fauna can still utilise these habitats.

No TECs listed under the Commonwealth EPBC Act were identified on the study area.

Table 2: Threatened ecological communities identified in the project footprint

Threatened Ecological Community	PCT	BC Act	Occurrence
Swamp Oak Floodplain Forest of the NSW North Coast, Sydney Basin and Southeast Corner Bioregions	1234 Swamp Oak swamp forest fringing estuaries, Sydney Basin Bioregion and South East Corner Bioregion	Endangered	Approximately 0.62 hectares occurs within the development footprint
Freshwater Wetlands on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	1071 *Phragmites australis* and *Typha orientalis* coastal freshwater wetlands of the Sydney Basin Bioregion	Endangered	Approximately 0.1 hectares occurs within the development footprint

5.4.2 Threatened flora species

No species credit threatened flora species as listed under the BC Act or EPBC Act were identified as occurring on the project corridor in the Project EIS.

Species credit threatened flora species listed under the BC Act or EPBC Act which have potential to occur based on the PCT's identified on the project corridor are listed in **Table 4**. The unexpected finds procedure for these species is described in **Section 6.5**.

Table 3: Threatened (or otherwise significant) flora species

Common name	Scientific name	EPBC Act	BC Act	Probability of Occurrence
Ancistrachne maidenii		Not Listed	Vulnerable	Low
Cryptostylis hunteriana	Leafless Tongue Orchid	Vulnerable	Vulnerable	Low
Wilsonia backhousei	Narrow-leafed Wilsonia	Not Listed	Vulnerable	Low
Zannichellia palustris		Not Listed	Endangered	Low

5.4.3 Weeds

Weeds are prevalent throughout vegetated areas of the Project corridor. Weeds include Weeds of National Significance (WoNS) as listed under the EPBC Act and High Threat Exotic weeds listed on the BAM. All species that are considered to be high threat will outcompete native plants if not controlled. The species identified within the corridor are described in **Table 5**.

Table 4: Weed species identified as occurring or which are likely to occur within the Project Corridor

Common name	Scientific name	WoNS	High Threat Exotic
Alligator Weed	*Alternanthera philoxeroides*		Yes
Madeira Vine	*Anredera cordifolia*	Yes	Yes
Giant Reed	*Arundo donax*		Yes
Moth Vine	*Araujia sericifera*		Yes
Climbing Asparagus Fern	*Asparagus plumosus*	Yes	Yes
Cobblers Peg	*Bidens pilosa*		Yes
Green Cestrum	*Cestrum parqui*		Yes
Bitou Bush	*Chrysanthemoides monilifera*	Yes	Yes
Cortaderia selloana	Pampas Grass		Yes
Morning Glory	*Ipomoea alba*		Yes
Lantana	*Lantana camara*	Yes	Yes
African Olive	*Olea europaea* subsp. *cuspidata*		Yes
Opuntia sp.	Prickly Pear	Yes	Yes
Castor Oil Plant	*Ricinus communis*		Yes
Blackberry	*Rubus fruticosus* sp. agg.	Yes	Yes
Senecio madagascariensis	Fireweed	Yes	Yes

5.4.4 Threatened Fauna and Threatened Fauna Habitat

Two threatened fauna species were detected within the project corridor during field surveys conducted for the EIS; the Grey-headed Flying Fox and the Eastern Bent-wing Bat. Species credit threatened fauna species and threatened fauna species listed under the EPBC Act which could potentially occur based on the PCT's identified within the project corridor are listed in **Table 6.** Any records of the species in **Table 6** are to be treated as unexpected finds. The unexpected finds procedure for these species is described in **Appendix F.**

Table 5: Threatened fauna

Common name	Scientific name	EPBC Act	BC Act	Occurrence likelihood
Australasian Bittern	*Botaurus poiciloptilus*	Endangered	Endangered	Low
Australian Painted Snipe	*Rostratula australis*	Endangered		Low
Black Bittern	*Ixobrychus flavicollis*		Vulnerable	Low
Black-tailed Godwit	*Limosa limosa*		Vulnerable	Low
Broad-billed Sandpiper	*Limicola falcinellus*		Vulnerable	Low
Curlew Sandpiper	*Calidris ferruginea*	Critically Endangered	Endangered	Low
Eastern Bentwing-bat	*Miniopterus schreibersii oceanensis*		Vulnerable	Moderate – occasional foraging visitor
Eastern Freetail-bat	*Mormopterus norfolkensis*		Vulnerable	Low
Eastern Osprey	*Pandion cristatus*		Vulnerable	Moderate – occasional foraging visitor to Mill Stream Ponds
Flame Robin	*Petroica phoenicea*		Vulnerable	Low
Gang-gang Cockatoo	*Callocephalon fimbriatum*		Vulnerable	Low
Great Knot	*Calidris tenuirostris*	Critically Endangered	Vulnerable	Low
Green and Golden Bell Frog	*Litoria aurea*	Endangered	Endangered	Low
Grey-headed Flying-fox	*Pteropus poliocephalus*	Vulnerable	Vulnerable	Moderate – occasional foraging visitor
Little Bentwing-bat	*Miniopterus australis*		Vulnerable	Low

Little Eagle	*Hieraaetus morphnoides*		Vulnerable	Low
Little Lorikeet	*Glossopsitta pusilla*		Vulnerable	Low
Masked Owl	*Tyto novaehollandiae*		Vulnerable	Low
Powerful Owl	*Ninox strenua*		Vulnerable	Low
Regent Honeyeater	*Anthochaera phrygia*		Critically Endangered	Low
Spotted Harrier	*Circus assimilis*		Vulnerable	Low
Square-tailed Kite	*Lophoictinia isura*		Vulnerable	Low
Superb Fruit-Dove	*Ptilinopus superbus*		Vulnerable	Low
Varied Sittella	*Daphoenositta chrysoptera*		Vulnerable	Low
White-bellied Sea-Eagle	*Haliaeetus leucogaster*		Vulnerable	Low
Yellow-bellied Sheathtail-bat	*Saccolaimus flaviventris*		Vulnerable	Moderate – occasional foraging visitor

Three habitat types provide potential habitat for threatened species within the project corridor.

Table 6: Fauna habitat types

Name	Habitat
Grey-headed Flying-fox potential foraging habitat	Grey-headed Flying-fox foraging habitat is located throughout most vegetated areas of the project corridor. No roosting sites or breeding camps occur within the study area.
Green and Golden Bell Frog habitat	A population of the Green and Golden Bell Frog (Litoria aurea) previously occurred at the Botany Wetlands, which are crossed by the project at Mill Stream. Green and Golden Bell Frogs were known to inhabit the extensive Botany Wetlands in large numbers in the 1960s. By the mid-1970s, the species had declined in abundance at Eastlakes, and also disappeared from the upper Lachlan Swamps at Centennial Park (DECC 2008). White and Pyke (2008a) considered the species to no longer be present from Botany Wetlands, with the last record being 1993.

	Microbat roosting habitat	No Southern Myotis were recorded during the field surveys at the Mill Stream Ponds. The Bridge over the Mill Stream ponds provides potential occasional roosting habitat for this and other microbat species.

5.4.5 Pathogens

The Project EIS identified that the fungal pathogen Chytrid (*Batrachochytrium dendrobatidis*) is likely to be present within waterways and wetlands that located within the Project Corridor. The fungus causes the disease Chytridiomycosis in native amphibians. It is a water borne fungus that is spread through cross contaminations between water bodies. Fungal spores can be spread through contaminated water, soil and vegetation. Some native frog species are natural carriers of the fungus and can also spread it. The Green and Golden Bell Frog is particularly susceptible to this disease.

The EIS identified another two pathogens of concern that were considered unlikely to occur on within the Project Corridor; Myrtle Rust (*Uredo rangelli*) and Phytophthora (Phytophthora cinnamomi).

Myrtle Rust is an air-borne plant fungus that attacks the young leaves, shoot tips and stems of Myrtaceous plants eventually causing plant death. It is spread by movement of contaminated material such as clothing, infected plants, vehicles and equipment.

Phytophthora is a soil-borne fungus capable of causing tree death (dieback) by attacking the roots of native plants. Spores can be spread over large areas by water, vehicle and machinery movement as well as human and animal movement. Management measures to reduce the risk of pathogen spread are discussed in **Section .8 below.**

5.5 Ecological Impacts

Potential and likely impacts associated with the project are identified in Chapter 12.3 of the EIS and include:

- The removal of native vegetation including two TECs listed under the BC Act;
- Direct and indirect impacts to fauna, including injury and mortality;
- Potential impacts on threatened species not previously detected within the Project footprint but known to occur close to the Project footprint;
- Loss of habitat for threatened species;
- Spread of weeds;
- Introduction of pathogens;

These potential impacts are described in more detail in below.

5.5.1 Removal of vegetation and threatened flora species

Construction of the project will result in the removal of approximately 8.15 hectares of vegetation including 0.72 hectares of native PCT's (Table 8). All PCT's within the project corridor correspond to TEC's listed under the BC Act. The remaining vegetation has been classified under several categories of "exotic" vegetation.

Table 7: Direct impacts to native vegetation

PCT ID	PCT Names	Threatened ecological community	BC Act listing	EPBC Act	Extent of vegetation removal for the project (ha)
1232	Swamp Oak Floodplain Forest of the NSW North Coast, Sydney Basin and Southeast Corner Bioregions	Swamp Oak floodplain swamp forest, Sydney Basin Bioregion and South East Corner Bioregion	Endangered	Not listed	0.62 hectares
1071	*Phragmites australis* and *Typha orientalis* coastal freshwater wetlands of the Sydney Basin Bioregion	Freshwater Wetlands on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	Endangered	Not listed	0.1 hectares

5.5.2 Loss of habitat for threatened species

The PCTs and areas of "Miscellaneous ecosystem – highly disturbed areas with no or limited native vegetation" and "Miscellaneous ecosystem – urban exotic / native landscape plantings" located in the Project footprint provide foraging habitat for the Grey-headed Flying Fox and eastern Bent-wing Bat. In total, 2.51 hectares of potential foraging habitat for the species will be removed during construction of the Project.

Several bridges on the project footprint could provide occasional roosting resources for threatened microbat species, especially the Mill Stream Pond bridge. Its removal could result in a reduction of roosting habitat for microbat species.

5.5.3 Direct and indirect impacts to fauna, including injury and mortality

	Fauna injury or mortality could occur during construction of the project as a result of direct collision with vehicles and equipment within the construction boundary. Additional mortality could occur as a result of the clearing of native and non-native vegetation. Mobile species (such as birds) may be able to move away quickly and easily, but other less mobile and smaller species may be slower to move away potentially resulting in injury or mortality of the individual. **5.5.4 Spread of weeds** Large amounts of weed material will be removed during the vegetation clearing required for the project. Given the presence of weeds in the project footprint, there is potential for disturbance of vegetation to lead to the spread and/or intensification of weeds. If not appropriately managed, this may indirectly affect native flora and fauna in adjoining areas by further reducing habitat quality, altering the structure and composition of vegetation and increasing competition for resources. The spread of weeds could also hamper successful post-construction landscaping and revegetation programs. Specific weed management requirements will be advised by the Project Ecologist based on the location and species of weed (further details included in Section 5.7 below). Project-wide weed management will be applied to the corridor during the construction phase of the project. **5.5.5. Introduction of pathogens** Activities that involve movement of equipment, people, landscaping materials and other construction materials over large areas present potential vectors for the spread of pathogens. While presence of pathogens was not confirmed during the Project EIS, Chytrid is highly likely to occur at the Mill Stream Pond Wetlands. Given the highly urban context and lack of existing remnant native vegetation within the study area, it is unlikely that Phytophthora is present. Myrtle rust, if present, would be limited to any landscaped or planted Eucalypts. All three pathogens can cause disease and death of certain plant and animal species.
5.6 Mitigation Measures	**5.6.1 Exclusion Zones and Project Boundaries** Prior to the planned vegetation clearing or wetland dewatering and pre-clearing surveys, the Project footprint boundaries and Environmentally Sensitive Areas must be identified and marked. All Project Boundaries and Exclusion Zones will be marked with an appropriate fence or series of boundary markers. In addition, all environmentally sensitive areas will have indicative signage installed every 50 metres around the boundary (or at the feature for particularly sensitive areas) (**Plate 1**).

Plate 1: Example of Environmentally Sensitive Area exclusion fencing and signage (Source: TR&T 2010)

Pre-clearing surveys

Pre-clearing/construction surveys will be undertaken by the Project Ecologist, ideally at least 7 days prior to the clearing of vegetation. The Project Pre-clearing Checklist and Clearing and Grubbing Checklist is provided in **Appendix M**. The key objectives of the pre-clearing survey are to:

- Confirm the clearing boundary has been identified and clearly marked;
- Confirm any environmentally sensitive areas have been clearly marked and signed;
- Confirm area to be cleared conforms with Project PCT mapping;
- Identify and mark fauna roosting features such as birds' nests and possum dreys;
- Identify and mark habitat features such as hollow bearing trees, stags, hollow logs or rockpiles;
- Confirm no roosts of Grey-headed Flying Fox or microbats are present including inspection of all pre-existing bridges and culverts for microbats;
- Identify and demarcate areas or individual weeds that are considered high risk or Weeds of National Significance;
- Determine if any hollow logs can be salvaged for habitat restoration;

	• Determine if vegetation within the clearing boundary is suitable for mulching and re-use or if it is required to be treated as green waste, and, • Identify potential release sites if fauna require capture and relocation during clearing. Initially, areas requiring a pre-clearing/construction survey will be identified by the Environmental Manager, or Environmental Advisor, in consultation with the Project Engineer or Site Supervisor. Prior to any vegetation clearing, the Environmental Manager or Environmental Advisor, will accompany the Project Ecologist to site to identify the area of vegetation that requires removal. The Project Ecologist will undertake a meandering walk survey throughout the vegetation to identify the required parameters on the pre-clearing checklist. Habitat features or habitat trees (trees containing nests, dreys or hollows) will be marked with the code "HBT" using pink spray-paint at chest height. Red and white tape will then be tied around the tree or structure that has the habitat feature. A GPS co-ordinate will be taken for each feature. All weeds will be identified. Weeds that require to be treated as contaminated waste will be marked with red and white tape and the GPS Co-ordinate will be recorded. Areas of vegetation pre-dominantly comprised of weeds will be treated as contaminated (i.e. not every weed will be marked with tape). The surveys will also include inspection of any nominated structures, bridges and culverts for roosting microbats prior to the planned disturbance. Microbat surveys will be undertaken during favourable weather conditions (where possible) to increase chances of detection. **Clearing Supervision and Post Clearing Checklist** A clearing permit is required for the removal of any area of vegetation for the Project. This includes all areas containing vegetation not conforming to a PCT and limb removal on trees that are to be retained. Prior to the commencement of clearing, the Project Ecologist will complete a brief survey to ensure no fauna have moved into the area since the Pre-clearing Survey. The results of this survey will be communicated to the clearing contractors prior to the commencement of clearing. Ideally, clearing will be undertaken using the 2-stage clearing process described in Transport Roads and Traffic Biodiversity Guidelines. Stage 1 of the clearing process will be designed to remove shrub and ground cover and most non-habitat trees. All habitat trees must be retained. Stage 1 clearing is designed to protect habitat features that could support fauna and while encouraging them to naturally disperse after the disturbance. Some non-habitat features could be retained during this process to allow fauna to leave the project footprint more easily. These decisions can be made on a case by case basis in consultation with the Project Ecologist. Stage 2 clearing will involve the removal of remaining habitat trees and features. If the feature is a hollow, nest or drey, the machine that is clearing the vegetation will gently tap the feature, to see if any fauna are disturbed. If fauna are disturbed, the Project Ecologist will attempt to capture the animal or corral it off the Project footprint into an area of suitable habitat. After this, the habitat tree will be pushed (or cut) down. The Project Ecologist will then inspect the feature to determine if any fauna are using the structure. Any fauna still present will be captured by the Project Ecologist and have its health assessed. If veterinarian care is required, the Project Ecologist will organise delivery of the animal. If care is not required, the Project Ecologist will relocate the animal to a suitable release area close to the clearing site. Stage 2 should occur no earlier than 24 hours after Stage 1.

	Much of the project footprint is located within rail corridors and clearing will be done during rail possessions. Given the rail possessions are infrequent and short in durations, 2-stage clearing may not be possible. In such situations, the Project Ecologist will liaise with JHG and the clearing contractor on the best methods to avoid harm to fauna resulting from clearing activities. All clearing will be Supervised by the Project Ecologist. The Project Ecologist will be in communication with clearing teams during the process to discuss the best way clear vegetation in a way the reduces risk to any fauna that may be present. **Fauna Rescue and Release Procedure** If an animal is identified within an area where it is likely to be impacted by current construction activity, work must stop immediately, and the Environmental Co-ordinator will be contacted. If the animal is a snake, the Project snake handler should also be contacted. If the animal is a bat, the Project Ecologist should be contacted. If the animal appears injured or unwell (and is not a bat or snake) the Environmental Co-Ordinator will organise to have the animal captured and placed in a cool dark holding container and they will be immediately taken to the nearest veterinarian or WIRES representative for treatment. If the animal appears uninjured, the Environmental Co-Ordinator will co-ordinate with the project ecologist to identify a suitable release point for the animal. If the species is nocturnal, it should be released after dark. In such cases, the animal should be kept in a cool dark and quite area prior to release. No attempt should be made to touch or confine Microbats or Flying-foxes identified on the Project footprint. Injured and or unwell bats could be experiencing symptoms of Australian Bat Lyssavirus (ABL), which can cause fatalities in humans if transmitted through bites or scratches. ABL has been detected in Grey-headed Flying foxes roosting in the Sydney Metropolitan Area. Microbats and Flying-foxes must only be handled by the Project Ecologist who has had a vaccination for Rabies within the last 2 years or has had their titre levels tested. The relocation of venomous snakes, if required, is hazardous and will be carried out by an experienced and appropriately licenced fauna handler. **Unexpected threatened species finds** The location of any threatened flora or fauna or a TEC that has not been previously identified will trigger the Unexpected Find Process (**Appendix F**). The key components of the process are described below. Unexpected threatened flora and fauna are usually encountered during the pre-clearing surveys. If threatened species are encountered, the Project Ecologist will undertake an assessment of potential impacts and identify any required mitigation measures for implementation in consultation with JHG and DPE. Work must stop within the vicinity of the unexpected find location until this process has been completed. Work can recommence once the risk of impact to the threatened plant or animal has been eliminated or a process has been agreed to with DPE to mitigate and offset potential impacts. Unexpected fauna can also be occasionally encountered on the construction site after pre-clearing surveys have been completed or during general construction activities. If fauna are encountered during construction activities, the fauna handling procedure will be activated. Work will stop and the Environmental Co-ordinator will capture and assess the animal. If the animal is identified as a

	threatened species, all works will stop until the Project Ecologist, in co-ordination with the Environmental Co-Ordinator and DPE have evaluated the potential impacts of the Project and developed suitable mitigation and management measures. **Clearing** Disturbance of vegetation will be limited to the areas necessary to construct works. Construction works (where practicable) will be designed to site laydown areas and construction facilities in previously cleared areas or areas of exotic vegetation to minimise or avoid impacts on native vegetation. Equipment storage and stockpiling of resources will be restricted to designated areas in cleared land. If additional vegetation is identified to be impacted, an ecologist will undertake further assessment for impact and determine additional requirements prior to commencement of clearing works Where works or the site adjoins native vegetation to be retained, the limits of clearing will be marked and temporary fencing or flagging installed and maintained around the vegetated areas prior to the commencement of construction activities **Revegetation** Prior to clearing, tree numbers, species (general information) and location will be assessed by the Environmental Coordinator and Ecologist and recorded in the Project Tree Tracking Register. Replacement trees will target an increase in tree canopy and aim to enhance Bayside Council's position in respect of the Sydney Green Grid. Replacement trees will be located on public land with priority given to areas within 500m of the construction boundary and locations will be identified in consultation with the relevant council and SACL. Pot sizes will be consistent with the relevant council's plans, programs and strategies for vegetation management/street planting/open space landscaping and will be agreed in consultation with the relevant council and SACL. Revegetation of riparian areas along Mill Stream, Mill Pond and New Pond (following construction) will be undertaken by a bush regeneration contractor. Disturbed areas will be stabilised as soon as possible following construction and locally endemic species typical of Swamp Oak swamp forest and Coastal freshwater wetlands will be used to revegetate these disturbed riparian areas.
5.7 Weed Management	In addition to the CoA's for the Project, JHG has a general biosecurity duty under the *Biosecurity Act 2015* to manage and minimise the spread of species listed in **Table 5.** Weeds will be managed in accordance with the following procedure. The objective of weed management on the Project footprint is to minimise the risk of weed spread from the project footprint to areas outside the corridor. A secondary objective is to manage weeds within areas of retained vegetation located in or adjacent to the Project footprint. Given the scope of weed infestations identified in the Project EIS, weed management prior to clearing, including spraying and removal, is unlikely to be feasible at most sites. Instead, cleared vegetation that includes weeds, including High Threat weeds and WNoS will be treated as weed contaminated green waste. Weed management will begin during the pre-clearing survey. The Project Ecologist will identify High Threat Weeds and WNoS identified in **Table 5** during the pre-clearing assessment and evaluate the scope of management required. This will include identifying the diversity and spread of weed cover and whether it will be possible to separate weed contaminated green waste from non-contaminated green waste. This information will be reported in the pre-clearing report/checklist. From this process, it will be evaluated what weed removal system will be required; onsite encapsulation or enclosed truck removal.

	Onsite encapsulation can be undertaken at sites with low weed loads. The vegetation in question can be removed and placed onto a large sheet of plastic or geofabric. Once all the required vegetation is removed, the sheet can be wrapped up, ensuring that there is limited ability for weedy vegetation to escape from the bundle. It then can be transported off site with any other green waste that is being removed from site. If weed infestations are large, it could be more appropriate to use a loading truck with the ability to enclose loads or a flat -back truck with an appropriate cover to prevent weed material being blown off. Ongoing weed management will occur throughout the construction phase, where required. The focus of this management will be retained vegetation within Environmentally Sensitive Areas and vegetation directly adjacent to the Project footprint. Three options are available for weed control: • Cut and remove the foliage of the weeds and spray the stem; • Spray foliage with an appropriate herbicide • Physical removal Any use of herbicides will be strictly in accordance with the Pesticides Act 1999, the product label, and the relevant Safe Work Method Statement developed in accordance with the Project's Work Health & Safety Management Plan. In addition, where approved herbicides are required to be used to control weed species near water, i.e. creeks, drainage depressions, and stormwater drains, extra care is to be taken to limit overspray. All herbicides will only be used during suitable meteorological conditions. Herbicides are not to be used without the prior approval of the Project Environmental and Sustainability Manager. If a non-glyphosate herbicide is to be used, approvals from the Safety Director and the Environment and Sustainability Manager are required. This 'hold point' is clearly stated in the Weed Management Procedure.
5.8 Pathogen Management	**Mill Stream Pond Chytrid Management** One pathogen is considered likely to occur on or adjacent to the Project footprint; Chytrid fungus. Chytrid fungus is likely to occur at the Mill Stream Ponds. Areas of vegetation outside of the project footprint should be mapped as exclusion zones. Entry should only be permitted after consultation with the site environmental officer. All staff accessing the wetland will be required to implement the following hygiene protocol. Hygiene stations for project employees who need to access to the Mill Stream Ponds should be located in an area isolated from natural drainage and situated to ensure there is minimal risk that materials can enter the drainage system of the wetland. A hygiene station should include a brush, a trough (for disinfecting boot soles) and several spray bottles. The spray bottles should contain a suitable disinfectant containing Chloramine or Chlorhexidine (such as Halamid©, Halasept© or Hexifoam) or blech (1% sodium hypochlorite). Commercially acquirable bleach and disinfectant brands including Ducks are suitable for disinfection purposes. Footwear must be thoroughly cleaned and disinfected before entering the site. This can be achieved by initially scraping or brushing work boots clear of mud and standing the soles in a disinfecting solution. If the project employee has been working in a high-risk area for soil-borne pathogens, the soles of the boots should soak for at least 1 minute. The remainder of the boot should be rinsed or sprayed with a disinfecting solution. All additional equipment that has previously come into contact with soil from a wetland or riparian area (including storm water drains) also requires disinfecting prior to entering site.

Additional techniques and solutions to achieve the desired level of hygiene are shown in Table 9.

Table 8: Additional disinfection systems for managing soil borne pathogens (from Murray et al. 2011 and Phillott et al. 2010)

Application	Disinfectant	Strength	Time
Collection equipment and containers	Sodium hypochlorite (bleach contains 1% sodium hypochlorite)	1%	1 min
	Path X or quaternary ammonium compound 128	1 in 500 dilution	0.5 min
		1 in 100 dilution	10 min
	Trigene	1 in 5000 dilution	1 min
	F10	1 in 1500 dilution	1 min
	Virkon	2 mg ml–1	1 min
	Potassium permanganate	1%	10 min
	Complete drying		>3 h
Footwear	Sodium hypochlorite (bleach contains 1% sodium hypochlorite)	1%	1 min
	Path X or quaternary ammonium compound 128	1 in 500 dilution	0.5 min
		1 in 100 dilution	10 min
	Trigene	1 in 5000 dilution	1 min
	F10	1 in 1500 dilution	1 min
	Phytoclean (30% benzalkonium chloride)	0.075%	1 min
		5%	1 min
	Complete drying		>3 h

	Vehicle wash down bays will be required to be operational to minimise the risk of spread of environmentally destructive soil-borne pathogens including Chytrid. The ultimate aim of the wheel-wash area is to ensure that the vehicles are as clean as reasonably possible prior to entering site. During construction, all vehicles and mobile plant will require to be washed-down prior to entry to site. Large clumps of mud and dirt must be removed as these can protect pathogens from other hygiene actions. A wash down bay or water grid will be required at the site entry to disinfect vehicles that regularly enter and leave the site. If a water grid is used, the grid will need to be of a length and depth to ensure all tyres are adequately immersed in disinfecting solution. The grid will be place so that any vehicle coming from a high-risk area can cross the grid prior to entering the site. Soil and debris will require removal regularly. Contaminated soil should be stored in an appropriate contaminated soil storage vessel for disposal off site. If a wash-down bay system is used, the bay will need to be situated away from any drainage that could enter the wetland area. High-powered water hoses will be required to ensure most dirt and debris is removed prior to entering site. The water from the hoses should be mixed with a suitable disinfectant. Vehicles that are not interacting with soil on or off site do not require wash down. The maintenance and implementation of Hygiene protocols is to be managed by the Project Environmental Officer and the Site Supervisor. The functionality of hygiene facilities is to be checked regularly ensuring that there is no indication of run-off or dispersal outside of the area. **Other Pathogens** If the presence of Myrtle Rust and Phytophthora are suspected after undertaking pre-clearing surveys, or from any other source, the site will be treated as contaminated. In response, the following procedures will be enacted: • All vegetation and soil (if Phytophthora is suspected) from the contaminated areas will be stockpiled within the boundaries of the clearing footprint. It will be removed to an appropriate green waste facility. • All vehicles and plant that have entered the site will require wash down and inspection prior to leaving entering other areas of the Project footprint. The wash down area must be closed, with all water and soil prevented from entering the surrounding environment. All staff that have entered the contaminated area will be required to wash down footwear and equipment in accordance with National best practice guidelines for management of Phytophthora for biodiversity conservation in Australia (O'Gara *et al*. 2005).
5.9 Green and Gold Bell Frog	The Mill Stream Ponds historically supported a population of the Green and Golden Bell Frog. This population has been thought to have died out by the early 2000's. Despite this, low density populations could remain extant within the area. Prior to the clearing of vegetation around the Mill Stream Ponds, targeted Green and Golden Bell Frog pre-clearing surveys will be undertaken in accordance with the "*NSW Survey Guide for Threatened Frogs - A guide for the survey of threatened frogs and their habitats for the Biodiversity Assessment Method*" (DPE 2020). Specifically aural-visual will be completed along the edges of suitable habitat by two ecologists for up to 2 person-hours on four non-consecutive nights prior to the completion of clearing. Surveys should be completed prior to March. Diurnal searches will be undertaken on the day of clearing as a component of the pre-clearing survey,

	Outside of pre-clearing surveys, all frog interactions on the project area will be managed using the following procedures unless the person in question has previous experience in identifying frog species. To facilitate the proper the handling of frogs, the following procedures should be followed. The procedures are designed to maximise the welfare of frogs on site and reduce the risk that pathogens are spread. The following equipment should be present on the Mill Stream Pond site to manage frog interactions during the project: • small portable plastic terrarium; • latex gloves; • medium sized snap lock bags; • Chloramine and Chlorhexidine based product such as Halamid©, Halasept© or Hexifoam© or a 5% Bleach solution; and, • Spray bottle and bucket. If frogs are encountered during construction, work should cease until the frog has been removed. A nominated site environmental officer should follow the following procedure when handling frogs. Prior to collecting the frog, hands should be washed in clean water or, if possible, disposable gloves should be used. If a net is required to capture the frog, the net requires disinfection prior using the same solution Once frog is captured, place in a plastic snap lock bag, preferably with a moist piece of paper towel. Snap lock bags are only to be used once. Once captured, the frog should be kept cool and in shade until it can be transferred to the site terrarium. If possible, take a photograph of the frog and send it to the Project Ecologist to determine if it is a GGBF. The site terrarium should be used to temporary hold captured frogs until positive identification has been received from the site ecologist. It should in a quiet place, preferably dark and cool. No water is required but the bottom of the tank should be lined with lined with a moist piece of paper towel (tap water can be used to wet the paper towel). Release the frog in the terrarium until the Project Ecologist can confirm the identification. If the Project Ecologist determines that the frog is not a GGBF, site environmental officers may release the frog on the frog exclusion side of the temporary frog fence. The frog should be released on dusk or at night. If the frog is determined to be a GGBF, the Project Ecologist will be required to access the site to process the frog prior to release in the wetland. Given the high likelihood of encountering amphibians during works around Mill Stream Ponds – JHG will investigate the option of installation a frog exclusion fence around the edge of the pond to prevent Frog egress onto site.

Appendix E. Stakeholder Consultation Details

Condition of Approval SSI-9714	CEMP Document	Agency	Consultation Details	Workshop Attendance (16/12/2021)	Response Status
C4/C9	Noise and Vibration Management Plan (Including Monitoring Program)	Bayside Council	13/12/21 – Email sent to Bayside Council (three contacts) providing the CNVMP (including Appendix A Monitoring Plan) and inviting to attend the workshop 13/12/21 – Email received acknowledging receipt of emails and committing to attending workshop 14/12/21 – Email acceptance of workshop 22/12/21 – Provision of written comments.	Yes	Comments received 22/12/2021 (refer CNVMP Appendix E)
		APA	13/12/21 – Email sent to APA (two contacts) providing the CNVMP (including Appendix A Monitoring Plan) and inviting to attend the workshop 13/12/21 – Email received requesting change in time to the workshop to accommodate APA meetings. 15/12/21 – Email sent offering a separate workshop session to accommodate. 15/12/21 – Email received outlining APA would attend main session.	Yes	Comments provided in workshop (refer CNVMP Appendix E)
		Jemena	13/12/21 – Email sent to Jemena (one contact) providing the CNVMP (including Appendix A Monitoring Plan) and inviting to attend the workshop 14/12/21 – Email received requesting invite be forwarded to alternate contact. 15/12/21 – Email sent to alternate contact 15/12/21 – Acceptance email received to the workshop	Yes	No comments provided
		Qenos	13/12/21 – Email sent to Qenos (one contact) providing the CNVMP (including Appendix A Monitoring Plan) and inviting to attend the workshop 14/12/21 – Email received declining attendance and outlining Qenos is currently progressing an abandonment process for the pipeline and previous discussions with ARTC had confirmed the scope would not impact other assets from Botany to Port Botany. 15/12/21 – Email received providing alternative contact for the workshop 15/12/21 – Email sent to alternative contact 16/12/21 – Acceptance email received to the workshop	Yes	Comments provided in workshop (refer CNVMP Appendix E)
		Ausgrid	13/12/21 – Email sent to Ausgrid (one contact) providing the CNVMP (including Appendix A Monitoring Plan) and inviting to attend the workshop 14/12/21 – Email received outlining Ausgrid would review document although no representation would be present at workshop 15/12/21 – Email sent updating workshop format 16/12/21 – Decline email received to the workshop 20/12/21 – Provision of written comments	No	Comments received 20/12/21

		Optus	13/12/21 – Email sent to Optus (three contacts) providing the CNVMP (including Appendix A Monitoring Plan) and inviting to attend the workshop 14/12/21 – Email received declining attendance and requesting invite be forwarded to alternate contact. 15/12/21 – Email sent to alternate contact 16/12/21 – Invite re-issued to all contacts	No	No comments received
		Telstra	13/12/21 – Email sent to Telstra (two contacts) providing the CNVMP (including Appendix A Monitoring Plan) and inviting to attend the workshop 15/12/21 – Email sent updating workshop format	Yes	No comments provided
		Sydney Water	13/12/21 – Email sent to Telstra (one contacts) providing the CNVMP (including Appendix A Monitoring Plan) and inviting to attend the workshop 15/12/21 – Email sent updating workshop format 16/12/21 – Reminder email issued	No	No comments received
C4	Soil and Water Management Plan	Bayside Council	13/12/21 – Email sent to Bayside Council (three contacts) providing the CSWMP and inviting to attend the workshop 13/12/21 – Email received acknowledging receipt of emails and committing to attending workshop 14/12/21 – Email acceptance of workshop 22/12/21 – Provision of written comments.	Yes	Comments received 22/12/2021
C4	Construction Transport, Traffic and Access Management Plan	Bayside Council	13/12/21 – Email sent to Bayside Council (three contacts) providing the CTTAMP and inviting to attend the workshop 13/12/21 – Email received acknowledging receipt of emails and committing to attending workshop 14/12/21 – Email acceptance of workshop 22/12/21 – Provision of written comments.	Yes	Comments received 22/12/2021
		TfNSW	13/12/21 – Email sent to TFNSW (contact) providing the CTTAMP and inviting to attend the workshop 13/12/21 – Receipt of Out of Office advising alternative contact 13/12/21 – Email issued to alternative contact providing the CTTAMP 13/12/21 – Invite issued to alternative contact for the workshop 15/12/21 – Invite re-issued to alternative contact updating workshop details 15/12/21 – Acceptance email received to the workshop 15/12/21 – Decline email received to the workshop	No	No comments provided

Note 1: Updated CEMP sub-plans (following initial consultation in December 21/January 22) will be provided to the consultees for information prior to the formal approval of this CEMP.

Workshop Invitations and consultation emails are detailed below.

Send Update

Title: BRD CEMP Sub-Plan (CNVMP) Consultation Workshop

Required: chris.gow@apa.com.au; omar.ashour@apa.com.au; mark.walker@qenos.com; Mattia Tabacchi <Mattia.Tabacchi@renzotonin.com.au>; Ilo Crkovski <ilo.crkovski@hotmail.com>; Layton Manuel <Layton.Manuel@jemena.com.au>; Colin Mable <Colin.Mable@bayside.nsw.gov.au>; Peter Barber <Peter.Barber@bayside.nsw.gov.au>; Kate Ashton <Kate.Ashton@bayside.nsw.gov.au>; chris.gow@apa.com.au; omar.ashour@apa.com.au; mark.walker@qenos.com; Mattia Tabacchi <Mattia.Tabacchi@renzotonin.com.au>; Ilo Crkovski <ilo.crkovski@hotmail.com>; Layton Manuel <Layton.Manuel@jemena.com.au>

Optional: jwall@ausgrid.com.au; pnakhle@ausgrid.com.au; ASindermann@Ausgrid.com.au; Tony.Trajcevski@optus.com.au; Senal.Mudaliar@optus.com.au; christos.tzibas@optus.com.au; sam.angeloni@team.telstra.com; john.p.mcinerney@team.telstra.com; ira.williams@sydneywater.com.au; Larissa.Villas-Boas@jemena.com.au; shane.hansen@optus.com.au

Start time: Thu 16/12/2021 10:40 AM — All day — Time zones

End time: Thu 16/12/2021 11:30 AM — Make Recurring

Location: Teams Meeting — Room Finder

Hello All,

Given the current Covid situation, I have moved the workshop to teams (instead of face to face). Apologies for the late notice of the change.

Please find below details for Thursday's workshop and Teams meeting login details.

Regards

Rachael

Time	Plan to be reviewed	Agencies to be consulted
10:40am - 11:30 am	Construction Noise and Vibration Management Plan (CNVMP)	Bayside Council, Pipeline Operators
Workshop close		

Attendee responses: 2 accepted, 0 tentatively accepted, 1 declined.

Send Update

Title: BRD CEMP Sub-Plan Consultation Workshop

Required: Colin Mable <Colin.Mable@bayside.nsw.gov.au>; Kate Ashton <Kate.Ashton@bayside.nsw.gov.au>; Peter Barber <Peter.Barber@bayside.nsw.gov.au>

Optional:

Start time: Thu 16/12/2021 8:30 AM — All day — Time zones

End time: Thu 16/12/2021 11:30 AM — Make Recurring

Location: Teams Meeting — Room Finder

Hello Colin, Kate and Peter,

Given the current Covid situation, I have moved the workshop to teams (instead of face to face). Apologies for the late notice of the change.

Please find below details for Thursday's workshop and Teams meeting login details.

Regards

Rachael

Time	Plan to be reviewed	Agencies to be consulted
8:30am - 9:20am	Construction Soil and Water Management Plan (CHMP)	Bayside Council
10 min tea break		
9:30am - 10:20am	Construction Transport, Traffic and Access Management Plan (CTTAMP)	Bayside Council, TfNSW
20 min morning tea break		
10:40am - 11:30 am	Construction Noise and Vibration Management Plan (CNVMP)	Bayside Council, Pipeline Operators
Workshop close		

No responses have been received for this meeting.

Send Update

Title: BRD CEMP Sub-Plan Consultation Workshop

Required: frank.wang@transport.nsw.gov.au; ahmad.mangal@transport.nsw.gov.au

Optional:

Start time: Thu 16/12/2021 9:30 AM — All day — Time zones

End time: Thu 16/12/2021 10:30 AM — Make Recurring

Location: Teams Meeting — Room Finder

Hello Frank and Ahmad,

Given the current Covid situation, I have moved the workshop to teams only (instead of face to face). Apologies for the late notice of the change.

Please find below details for Thursday's workshop and Teams meeting login details.

Regards

Rachael

Time	Plan to be reviewed	Agencies to be consulted
9:30am - 10:20am	Construction Transport, Traffic and Access Management Plan (CTTAMP)	Bayside Council, TfNSW
Workshop close		

BRD Construction Environmental Management Plan (Sub-Plan) Consultation

Reply | Reply All | Forward | ...

RL Rachael Labruyere-JHG

To colin.mable@bayside.nsw.gov.au; kate.ashton@bayside.nsw.gov.au; peter.barber@bayside.nsw.gov.au

Mon 13/12/2021 8:39 AM

You replied to this message on 13/12/2021 8:52 AM.

BRD-JHG-EN-0000-MPL-13004 1 Construction Soil and Water Management Plan .pdf
2 MB

ASSMP Appendix A_207996.00.R.008.Rev1.pdf
2 MB

AMP Appendix B_207996.00.R.007.Rev2.pdf
2 MB

Hello Colin, Kate and Peter

John Holland has been awarded the Botany Rail Duplication Project between Stephen Road and Lancastrian Drive within the Botany Rail line.

In accordance with the Planning Approval SSI-9714, John Holland must produce a Construction Environmental Management Plan (CEMP) and several sub-plans.

The Planning Approval stipulates that Bayside Council must be consulted with on three of the CEMP sub-plans. These are;

- Construction Soil and Water Management Plan (CSWMP)
- Construction Transport, Traffic and Access Management Plan (CTTAMP)
- Construction Noise and Vibration Management Plan (CNVMP)

A copy of the CSWMP is attached to this email for review. The CTTAMP and CNVMP will be sent separately due to size restrictions.

To assist in the review, John Holland will be holding a **Management Plan Consultation Workshop** on Thursday 16 December at the following location (and via Teams);

Building D, 10 Bourke Road
Mascot NSW 2020

Invitations will be issued shortly for the workshop with a schedule included at the bottom of the invite.

Due to limited space, we ask that attendees are limited to only the person or persons from your agency directly involved in reviewing the plans. You do not need to attend the portions of the workshop that are not related to your scope for review.

We ask that you familiarise yourself with the plans prior to the workshop and bring any initial comments for discussion.

The full consultation period will conclude 12 January 2022.

Regards

Rachael

Rachael Labruyere
Environment Manager
Botany Rail Duplication

BOTANY RAIL DUPLICATION
ARTC JOHN HOLLAND

Building D, 10 Bourke Road
Mascot NSW 2020
M. +61 439464796
W. johnholland.com.au

BRD Construction Environmental Management Plan (Sub-Plan) Consultation

Reply | Reply All | Forward | ...

Mon 13/12/2021 8:59 AM

RL Rachael Labruyere-JHG
To chris.gow@apa.com.au; omar.ashour@apa.com.au

You forwarded this message on 13/12/2021 9:02 AM.

BRD-JHG-EN-0000-MPL-13003 Construction Noise and Vibration Management Plan.pdf
2 MB

Hello Chris and Omar,

John Holland has been awarded the Botany Rail Duplication Project between Stephen Road and Lancastrian Drive within the Botany Rail line.

In accordance with the Planning Approval SSI-9714, John Holland must produce a Construction Environmental Management Plan (CEMP) and several sub-plans.

The Planning Approval stipulates that pipeline owners/operators must be consulted with on one of the CEMP sub-plans;

- Construction Noise and Vibration Management Plan (CNVMP)

A copy of the CNVMP is attached for review.

To assist in the review, John Holland will be holding a **Management Plan Consultation Workshop** on Thursday 16 December at the following location (and via Teams);

Building D, 10 Bourke Road
Mascot NSW 2020

Invitations will be issued shortly for the workshop.

Due to limited space, we ask that attendees are limited to only the person or persons from your agency directly involved in reviewing the plans. You do not need to attend the portions of the workshop that are not related to your scope for review.

We ask that you familiarise yourself with the plans prior to the workshop and bring any initial comments for discussion.

The full consultation period will conclude 12 January 2022.

Regards

Rachael

Rachael Labruyere
Environment Manager
Botany Rail Duplication

BOTANY RAIL DUPLICATION
ARTC JOHN HOLLAND

Building D, 10 Bourke Road
Mascot NSW 2020
M. +61 439464796
W. johnholland.com.au

Construction Environmental Management Plan (sub-plan) Consultation - CTTAMP

Reply | Reply All | Forward | ...

Mon 13/12/2021 9:43 AM

RL Rachael Labruyere-JHG
To nouhad.farah@transport.nsw.gov.au

You forwarded this message on 13/12/2021 10:02 AM.

BRD-JHG-TM-0000-PLN-00001 Construction Transport, Traffic Access Management Plan.pdf
9 MB

Hello Nouhad,

John Holland has been awarded the Botany Rail Duplication Project between Stephen Road and Lancastrian Drive within the Botany Rail line.

In accordance with the Planning Approval SSI-9714, John Holland must produce a Construction Environmental Management Plan (CEMP) and several sub-plans.

The Planning Approval stipulates that TfNSW must be consulted with on one of the CEMP sub-plans;

- Construction Transport, Traffic and Access Management Plan (CTTAMP)

A copy of the CTTAMP is attached for review.

To assist in the review, John Holland will be holding a **Management Plan Consultation Workshop** on Thursday 16 December at the following location (and via Teams);

Building D, 10 Bourke Road
Mascot NSW 2020

Invitations will be issued shortly for the workshop.

Due to limited space, we ask that attendees are limited to only the person or persons from your agency directly involved in reviewing the plans. You do not need to attend the portions of the workshop that are not related to your scope for review.

We ask that you familiarise yourself with the plans prior to the workshop and bring any initial comments for discussion.

The full consultation period will conclude 12 January 2022.

Regards

Rachael

Rachael Labruyere
Environment Manager
Botany Rail Duplication

BOTANY RAIL DUPLICATION
ARTC JOHN HOLLAND

Building D, 10 Bourke Road
Mascot NSW 2020
M. +61 439464796
W. johnholland.com.au

Appendix F. Unexpected Finds Procedures

FLORA AND FAUNA MANAGEMENT PROCEDURE

UNEXPECTED FINDS PROCEDURE

Threatened species (flora or fauna) or Threatend Ecological Communities (TEC) unexpectedly encountered

↓

Stop all work likely to impact the species/TEC in that location

↓

Notify the Environmental and Sustainability Manager and Project Ecologist.

↓

Environmental and Sustainability Manager and Project Ecologist to determine the likely impact to the threatened species/ TEC.

Appropriate management options, such as relocation measures, to be developed in consultation with ARTC

↓

If a significant impact is likely to occur, consultation will be undertaken with the ESS and / or DPIE as appropriate.

↓

Obtain any relevant licences, permits or approvals* required if the threatened species / TEC is likely to be significantly impacted.

↓

Recommence work once advice recieved, all necessary approval(s) are obtained and required management measures are implemented. Carry out regular inspections

↓

Include information related to this unexpected find in subsequent Inductions and Toolbox Talks

HERITAGE MANAGEMENT PROCEDURE

UNEXPECTED HERITAGE FINDS PROCEDURE

Potential Heritage Object Found
Stop work in the immediate vicinity of the find, secure the area and notify the Site Manager

Archaeologist to be contacted to assess and identify the find

Is the find an Aboriginal Heritage object?

N → Construction works can proceed once written clearance is provided by the archaeologist

N ← Is the find an Historical Heritage object?

Y → Archaeologist to record object and identify archaeological potential and heritage significance

Is the object State Significant?

N → Archaeologist to design mitigation and management strategy based on project HMP

Y → Contact Heritage NSW, Dept of Premier & Cabinet to notify the presence of the object and seek input

Archaeologist to prepare Archaeological Relics Management Plan and submit to Heritage NSW for approval

Additional archaeological investigation or salvage required?

Y → Prepare archaeological methodology and carry out works

N → Construction works can proceed once written approval is provided by Heritage NSW

Redesign required

Y → Construction works can proceed once redesign is approved by Heritage NSW

Prepare archaeological reporting and submit to Heritage NSW

Y → Contact Heritage NSW, Dept of Premier & Cabinet to notify the presence of the object and seek input

Archaeologist to record object and identify archaeological potential and heritage significance

Additional archaeological investigation or salvage required?

Y → Prepare archaeological methodology in consultation with RAPs and carry out works

N → Construction works can proceed once written approval is provided by Heritage NSW

Prepare archaeological reporting and submit site information to Heritage NSW AHIMS

Prepare and submit site information to Heritage NSW AHIMS

Archaeologist to liaise with Heritage NSW and RAPs to identify appropriate management

HUMAN SKELETAL REMAINS PROCEDURE

Potential Human Skeletal Remains Found
Stop work in the immediate vicinity of the find and notify the Site Manager
All bones must be treated as potential human skeletal remains and work around them must stop until they are assessed by an archaeologist

Archaeologist to be contacted to assess and confirm the nature of the find

Is the find confirmed to be potential human skeletal remains?

N → Is the find a Heritage object?

N → Works can proceed once written clearance is provided by archaeologist

Y → Follow Project Unexpected Finds Protocol

Y → Notify NSW Police immediately

NSW Police will take command of the site until otherwise directed

Are the remains archaeological (more than 100 years old)?

N → Works must not proceed without written approval from NSW Police

Y → Contact Heritage NSW, Department of Premier & Cabinet to notify and seek advice

If remains are suspected to be Aboriginal, contact Registered Aboriginal Parties to notify and seek advice

Project: Botany Rail Duplication Approved By:	Revision: Date: 16/11/2021 Printed copies are uncontrolled

BOTANY RAIL DUPLICATION
ARTC JOHN HOLLAND

Appendix G. John Holland Environmental Policy

JOHN HOLLAND

ENVIRONMENT POLICY

UP FOR THE CHALLENGE OF IMPROVING LIVES

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

John Holland's 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.

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.

Joe Barr
Chief Executive Officer
January 2020

§

Appendix H. Forms and Checklist

Record Type	Notes
Environmental Incident Report Form	Used on an as-needs basis when an environmental incident occurs
Environmental Site Inspection Checklist	Used at least once a week during environmental site inspections
Water discharge permit	Used prior to the transfer of, or discharge of water from sediment retention basins, excavations or holding tanks
Noise Monitoring Record Sheet	If required, used to record noise levels over a 15minute monitoring duration for construction activities to ensure they comply with noise criteria.
Monthly Register for Waste Materials	Used monthly to track waste materials used on site including hazardous material (i.e. asbestos)
Equipment Maintenance and Calibration Record Register	Used on an as-needs basis when equipment is maintained or calibrated
Water Monitoring Record Register	Used after water discharge to record water quality and approvals.
Rainfall Monitoring Record	Used after rainfall events.
Health, Safety and Environmental Report	Used monthly to report on environmental performance
Environmental Incident Register	Used on an as-needs basis when an environmental incident occurs.
Environment Design Review Checklist	Used by the design team to ensure all environmental design requirements are complied with.
Subcontractor Energy Usage Report (if required)	Used monthly to report on subcontractor usage.
Sub-contractor performance review	Used to evaluate the overall performance on each sub-contractor, including environmental performance.
Pre – Clearing assessment checklist	Used prior to the trimming and/or removal of any vegetation as the Biodiversity Management Plan

Appendix I. Example Site Environmental Plan

BOTANY RAIL DUPLICATION | JOHN HOLLAND

SITE ENVIRONMENTAL PLAN - GEOTECHNICAL INVESTIGATION & SOIL SAMPLING

Key Environmental Risks & Controls

SITE ACCESS: All site personnel to be inducted. No access outside approved work areas without permission form the Project Manager. Mandatory Inductions Include:

- ARTC National Contractor Induction
- ARTC Electrical Safety Induction
- ARTC Corridor Access Induction (Port Botany-Campsie)
- John Holland Online Inductions
- Site Specific Pre-start

SURFACE AND GROUND WATER: All excavations to be restabilised and compacted. Existing roads to be used only. No dewatering.

SOIL AND LAND: No soil to be moved offsite without permission. The potential for unexpected contamination exists. No mud to be tracked offsite. STOP WORK if staining, odorous soil, suspected asbestos, or buried rubbish is uncovered. Project Manager to notify ARTC. As per Unexpected Finds Procedure.

HAZ.CHEMS: No fuels or oils to be stored on site. Spill kits to be available. No refuelling or machinery maintenance unless approved by the site supervisor in an appropriately bunded location. Report any spills immediately, Project Manager to notify ARTC

FLORA AND FAUNA: Tree removal, trimming or other vegetation clearance requires a clearing permit and is not permitted.

Hygiene Protocol to be implemented. Vehicles are to be free from excessive mud/dirt and free of visible weeds and seeds. Any Priority Weeds are to be managed according to the requirements under the Biosecurity Act 2015.

Injured or trapped animals are to be notified to the Environmental Manager immediately.

HERITAGE: Limitations apply. Works to occur as per agreed scope, as bridges and waterways have a heritage curtilage. STOP WORK if unexpected finds, including human remains, are found. Project Manager to notify ARTC, external notification required. As per Unexpected Finds Procedure.

AIR QUALITY: Dust to be visually monitored and any dusty works are to be paused and methods reconsidered. Hygienist on site for asbestos specific works.

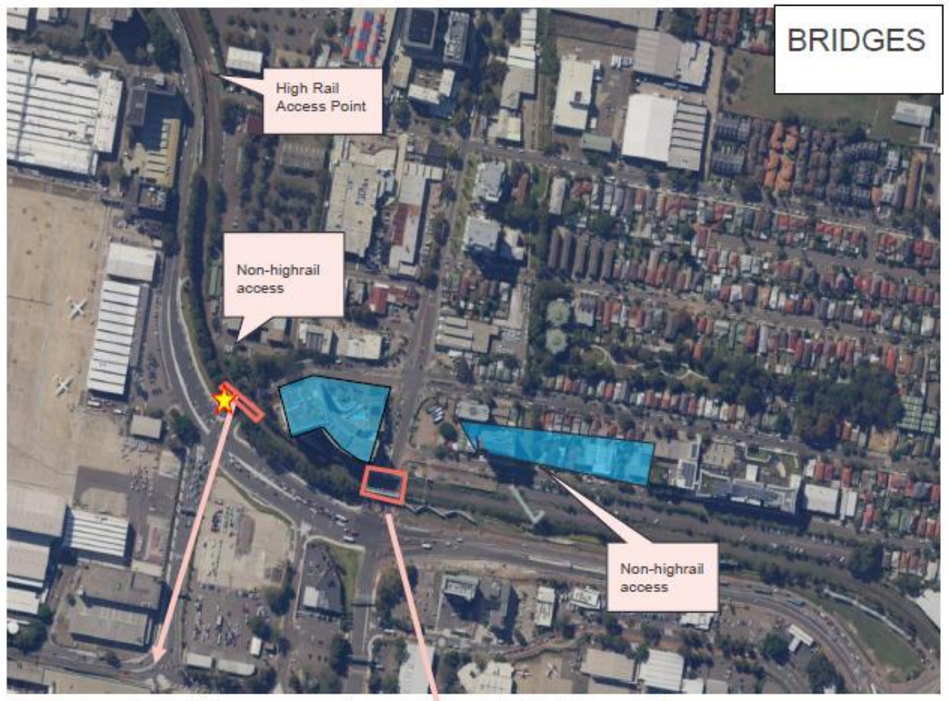
NOISE AND VIBRATION: Standard working hours (pre possession works): 7-6 Monday to Friday

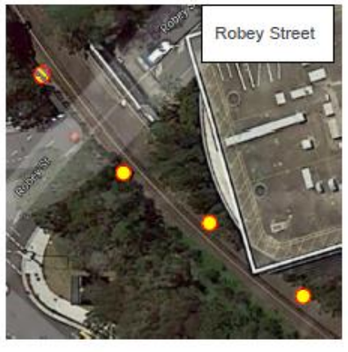
OOHW permits apply to the possession portion of this scope-extended Saturday and Sunday works - 7-6 both days.

Select appropriate, well maintained plant for each to task, minimise idling, Avoid metal to metal contact on equipment where practical. No yelling or loud music

COMMUNITY: Any complaints, queries or concerns are to be recorded and notified to the Environmental Manager immediately. Direct any complainants to the ARTC Enviroline
Call: 1300 550 402 Email: Enviroline@artc.com.au

Sign-off	Signature	Contact #
Oliver Kundigraber Project Manager		0447 699 017
Krissy Vajda Environment Manager		0439 477 649





Heritage Curtilage: Bridges are locally listed. The structures themselves are protected. Works are not to impact the bridge structure

Survey Location (indicative)
Survey Location turned into Groundwater Well
Asbestos - Emu Pick
Potentially impacted residences to be included in notification

Appendix J. Legal Requirements & Compliance Tracker

Act	Activity / aspect	Requirement	Reference	Applicability
General				
Environmental Planning and Assessment Act 1979	All	The Project has been declared critical State Significant Infrastructure (CSSI) by virtue of Schedule 5, clause 4 of State Environmental Planning Policy (State and Regional Development) 2011. Comply with the terms Minister for Planning's approval for the project. Obtain the Minister's approval for any project modifications that are not consistent with the planning approval.	S5.13 S5.14	Yes – the provisions are applicable to EIS Project area.
		Environmental assessment and public consultation, including a preferred infrastructure report that outlines any proposed changes to the SSI	S5.147	Yes
		Application of other provisions of the EP&A Act Approvals and legislation that does not apply Approvals and legislation that must be applied consistently	S5.22 S5.23 S5.24	Yes
Protection of the Environment Operations Act 1997	Site licensing	Do not carry out or allow an activity listed in Schedule 1, or carry out work to enable such an activity, unless the premises are licensed by the EPA. This applies to 'road construction' and 'extractive activities' (and any other scheduled activity undertaken for the Project).	S47 S48	Yes - an EPL is triggered for railway systems.
	Environmental Protection	Do not risk harming the environment by wilfully or negligently: Disposing of waste unlawfully Causing any substance to leak, spill or otherwise escape (whether or not from a container) or Emitting an ozone depleting substance.	S115 S116 S117	Yes

Roads Act 1993	All	Requires the consent of the appropriate road authority for carrying out work on, or disturbing, the surface of a public road. Where the proponent is a public authority, the roads authority must consult with the applicant before making a decision.	S79	Yes
Airports (Protection of Airspace) Regulations 1996 (Cth)	Activities that intrude into the prescribed airspace	Protection of the airspace at and around airports, which include the OLS and PANS-OPS. Consultation with the Civil Aviation Safety Authority and Airservices Australia	All	Yes
Water				
Water Management Act 2000 With the exception of controlled activity approvals, the Water Management Act 2000 (WM Act) only applies in relation to those water sources covered by operational water sharing plans – these areas cover most of the State's major regulated river systems.	Water Access Licence	Do not take water from a water source (a lake, river or estuary or place where water occurs naturally on or below the surface of the ground, and includes coastal waters) without an access licence. Do not use water on land (unless supplied by a water utility, irrigation corporation or in accordance with basic landholder rights) without a water use approval.	S56 S60A S89 S91A S91(3)	No WAL – Botany Sands are exempt and ARTC exempt authority
	Water management works	Do not construct/use a water supply work, drainage work or flood work without the appropriate approval.	S90 S91B S91C S91D	No – Not applicable to the Project.
	Groundwater	An aquifer interference approval/licence may be required under Section 91(3) of the WM Act if construction groundwater is intercepted by the Project.	S91	WSWA - TBA
Water Act 1912 Note that this Act is being	Surface water	Obtain a licence or permit for construction or use of ‘work’ for purposes including the taking and using of water.	S21B	No - Public authorities are exempt from the need to obtain an

progressively repealed by the WM Act. With the exception of controlled activity approvals, the WM Act only applies in relation to those water sources covered by operational water sharing plans – these areas cover most of the State's major regulated river systems.				approval. Third parties (such as JH) undertaking works on behalf of the Crown are similarly exempt.
	Floodplains	Obtain an approval for controlled works. These include works which occur on a designated floodplain, which can prevent land from being flooded or which can affect water flow to or from a river or lake.	S180	No – An exemption in relation to roads potentially applies – see clause 4 of the Water (Part 8-General) Regulation 1995.
Natural Resources Access Regulator (NRAR 2018)	Waterfront Land	Works on waterfront land must be carried out in accordance with the Guidelines for Controlled Activities	-	Yes
Biodiversity				
Biosecurity Act 2015 (formerly Noxious Weeds Act 1993)	Biosecurity matters including pests, disease and weeds	The duty to prevent, eliminate and minimise biosecurity risks posed by biosecurity matters as defined by the Act.	S22	Yes
Biosecurity Regulation 2017	Pests and Diseases	Notify the presence any pest or disease listed in Schedule 1 of the Biosecurity Regulation 2014, within 1 working day after suspecting or becoming aware of the pest or disease.	Regulation cl.7 Schedule 1	Yes
Biodiversity Conservation Act 201	Fauna	Do not harm any animal that is; of a threatened species, that is part of a threatened ecological community or is a protected animal, unless authorised under other legislation (e.g. planning approval).	S2.1 S2.8	Yes

	Habitat	Do not damage habitat of a threatened species or ecological community unless authorised under other legislation (e.g. planning approval).	S2.4 S2.8	Yes
	Biodiversity	Do not damage declared areas of outstanding biodiversity value unless authorised under other legislation (e.g. planning approval).	S2.3 S2.8	Yes
	Flora	Do not pick a plant that is; of a threatened species, that is part of a threatened ecological community or is a protected plant, unless authorised under other legislation (e.g. planning approval).	S2.2 S2.8	Yes
Environment Protection Biodiversity Conservation Act, 1999 (Commonwealth)	Flora and fauna conservation	Do not kill, injure or take a member of a listed threatened species without a permit.	Part 13	Yes
		Comply with the terms of any EPBC Act approval for the project.	N/A	Yes
Heritage				
Heritage Act 1977	Heritage	Do not disturb or excavate land with knowledge or reasonable cause to suspect that the disturbance or excavation will or is likely to result in a relic being discovered, exposed, moved, damaged or destroyed; or do not disturb or excavate land on where a relic has been discovered or exposed.	S139	No - Under the EP&A Act the Project is exempt from this requirement
		Do not undertake an activity that will affect a place, building, work, relic, moveable object or precinct which is subject to an Interim Heritage Order or is listed on the State Heritage Register without approval from the Heritage Council.	S56-57	No - Under the EP&A Act the Project is exempt from this requirement
		Notify the Heritage Council on discovery of a relic	S146	Yes
National Parks and Wildlife Act 1974		Do not harm or desecrate an Aboriginal object or Aboriginal place without consent	S86 S90	N/A

	Aboriginal places and objects	Notify the NPWS within reasonable time of becoming aware of the location or discovery of certain Aboriginal objects.	S89A	Yes
		An Aboriginal heritage impact permit may be issued.	S90	No – Under the EP&A Act the Project is exempt from this AHIP requirement
Aboriginal and Torres Strait Islander Heritage Protection Act 1984 (Commonwealth)	Protection of areas and objects	Report any discovery of Aboriginal remains to the Federal Minister for the Environment and Heritage.	S20	Yes
		Comply with the provisions of any declaration in relation to a significant Aboriginal area or object.	S22	Yes
Air Quality				
Protection of the Environment Operations Act 1997	Air quality	Do not operate plant which emits air pollution caused by poor maintenance or operation	S124	Yes
		Do not cause or neglect to prevent air pollution (eg dust exceeding reasonable levels without active management measures in place)	S126	
		Do not cause or permit the emission of an offensive odour	S129	
Protection of the Environment Operations (Clean Air) Regulation 2002	Air quality	Excessive impurities are visible for a continuous period of more than 10 seconds	S15	
		Air emission concentrations for scheduled premises	Schedule 4	
Pollution and Incident Response				
Protection of the Environment Operations Act 1997	Harming the environment	Do not risk harming the environment by wilfully or negligently: disposing of waste unlawfully. causing any substance to leak, spill or otherwise escape (whether or not from a container); or emitting an ozone depleting substance	S115 S116 S117 S120	Yes

	Control equipment	Properly and efficiently maintain and operate any installed pollution control equipment (including monitoring devices).	S167 S120	Yes
	Notification of pollution incidents	Notify the EPA immediately of pollution incidents where material harm to the environment is caused or threatened.	S148	Yes
Local Government Act 1993	Fire related incident	In the event of a fire related incident, the Project will comply with the requirements of the Act.	N/A	Yes
Rural Fires Act 1997			N/A	Yes
Noise				
Protection of the Environment Operations Act 1997	Plant maintenance and operation	Do not operate plant if it emits noise caused by poor maintenance or operation.	S139	Yes
	Materials management	Do not cause noise by failing to properly and efficiently deal with materials.	S140	Yes
Contaminated material				
Protection of the Environment Operations Act 1997	Land pollution	Do not cause or permit land pollution other than under authority of a licence or regulation. (However it is not a land pollution offence to place virgin excavated natural material or lawful pesticides and fertilisers on land, or by placing matter on land that has been notified to the EPA as an unlicensed landfill and which is operated in accordance with the regulations.)	S142A – S142E	Yes
Contaminated Land Management Act 1997	Reporting contamination	Notify the EPA if: Contaminants exceed thresholds contained in guidelines or the regulations where contamination has entered or will foreseeably enter neighbouring land, the atmosphere, groundwater or surface water Contaminants in soil are equal to or exceed guideline levels with respect to the current or approved use of the land.	S60	Yes

		Contamination meets other criteria that may be prescribed by the regulations.		
Waste				
Protection of the Environment Operations Act 1997	Littering	Do not litter in a public place or an open private place. Do not litter from a vehicle. Only deposit advertising material in receptacles provided for mail or newspapers or under the door of the premises. Do not deposit advertising material on or in vehicles.	Part 5.6A	Yes
	Waste and transportation	Do not undertake a scheduled waste activity unless in accordance with an EPL.	Part 3.2 Schedule 1	No
		Only transport waste to a facility that can lawfully accept the waste.	S143	Yes
		Do not dispose of waste in a manner that harms or is likely to harm the environment.	S115	Yes
Protection of the Environment Operations (Waste) Regulation 2005	Waste and transportation	Comply with general requirements for the transport of waste. For example, any vehicle used by the person to transport waste must be kept in a clean condition and be maintained so as to prevent spillage of waste. For some wastes only licensed transporters can be used.	Cl.49	Yes
		Comply with record keeping requirements in relation to the transport of certain types of waste.	Part 3	Yes
Waste Avoidance and Resource Recovery Act 2001	Waste and transportation	Establish the waste hierarchy. Promotes waste avoidance and resources recovery by developing waste avoidance and resource recovery strategies.	-	Yes
Hazards and risks				
Environmentally Hazardous Chemicals Act, 1985	Hazards and risks	Obtain a licence to undertake prescribed activities involving environmentally hazardous chemicals or declared chemical wastes.	S28	Yes

Dangerous Goods (Road and Rail Transport) Act 2008	Hazards and risks	Ensure that dangerous goods are transported in a safe manner.	S9	Yes
State Environmental Planning Policy 33 – Hazardous and Offensive Development	Hazards and risks	Applying threshold levels for storage of dangerous goods on-site.	S9	No
Pesticides Act 1999	Hazards and risks	Use pesticides in an environmentally sensitive manner. Do not use an unregistered pesticide without a permit. Read the label or permit for the pesticide. Use registered pesticides in accordance with instructions on the label. Do not use any restricted pesticide unless authorised by a certificate of competency or a pesticide control order under the Act. Compliance with pesticide codes of practice is required.	S12 S13 S14 S15 S17	Yes
Traffic				
Transport Administration Act 1988	Traffic management	Comply with the functions of ARTC relating to traffic management and safety	S52A	Yes
Road Rules 2014	Use of roads	Establish the road rules that are applicable to vehicles and road users on roads in NSW	-	
Roads Act 1993	Use of roads	Obtain a Road Occupancy Licence prior to commencement of traffic related works that require access to roads	S138	
Greenhouse gas emissions				

National Greenhouse and Energy Reporting Act, 2007 and Regulations 2008	Greenhouse gas emissions	Accounting and reporting of greenhouse gases produced and energy consumed during construction.	-	Yes – JH triggers the requirements for reporting under the Act.
Lighting				
CASA Standards for Obstruction Lights (Australia)	Lighting Obstructions	Considerations for lighting with potential to create an obstacle for aircraft.	S139	Yes

Appendix K. Pollution Incident Reporting Management Plan (PIRMP)

Pollution Incident Response Management and Reporting Plan

This Pollution Incident Response Management Plan has been prepared for the Botany Rail Duplication Project operating under EPL 21678. It has been prepared in accordance with Part 5.7A of the Protection of the Environment Operations Act 1997 and Chapter 4 of the Protection of the Environment Operations (General) Regulations 2022.

1. External Notification Protocol

The authorities listed in Table 1.1 must be contacted in the order below. Also refer to Table 2.1.

Table 1.1: Contact Details

	Authority	Name	Phone Number
1	Emergency Services	Fire and Rescue NSW Police NSW Ambulance	000
* Only ring 000 if the incident presents an immediate threat to human health or property and requires Emergency Services. If the incident does not require an initial combat agency or once the 000 call has been made.			
2	EPA	Pollution Line	131 555
3	Ministry of Health	South East Sydney	02 9382 8333 After hours 02 9382 2222
4	Comcare		1300 366 979
5	SafeWork NSW	Information Line	131 050
6	Bayside Council	Customer Contact Centre	1300 581 299

JH will notify ARTC as soon as possible in the event of an environmental incident or immediately should an environmental have the potential to result in material harm to the environment with remediation costs likely to be greater than $10,000 or if the incident occurs during standard construction hours.
JH will provide to ARTC with all relevant information required in order for ARTC to provide the relevant notification to DPE in accordance with CoA A37 and A38.

Refer to Attachment A Emergency Contact List for site personnel contact details

2. Community Notification and Action Protocol

The following table (Table 2.1) lists the mechanisms to be followed in the event that a pollution incident has the potential to impact the surrounding community, in order to minimise the risk of harm.

Table 2.1: Incident Notification

Pollution Incident Scenario	Potential Impacts	What to do	Who to Notify	When	Communication Mechanism
Large release of sediment from site	Siltation of Watercourse	Avoid entering the watercourse. Cease pumping any water	Principal	Principal within 15mins	Notification e.g. Door knock/ Telephone/ Letter drop
			Downstream users	3 hours When water has been removed	
Chemical spill entering drain	Exposure to chemicals	Avoid entering drain Don't drink any water originating from drain	Principal	Principal within 15 mins	Notification e.g. Door knock/ Telephone/ Letter drop
			Adjacent residents/ businesses	3 hours When cleaned up	

Communications and engagement activities, tools and implementation, enquiries, and complaints mechanisms to notify the community are set out in the BRD Communication Strategy.

3. Hazard Identification and Pre-emptive Measures

The management plans associated with the CEMP identify environmental aspects associated with the construction of the Project. The CEMP sub-plans and Environmental Control Plans relevant to pollution include Soil and Water Management Plan, Waste Management Control Plan, Air Quality Control Plan and Construction Noise and Vibration Management Plan.

Refer to Appendix C of the CEMP for complete hazard identification and risk assessment.

A project wide risk assessment is incorporated into the Workplace Risk Assessment stored on Project Pack Web (PPW).

4. Pollution Inventory

The Work, Health and Safety (WHS) Management Plan requires that a Safety Data Sheet (SDS) and a Hazardous and Dangerous Substances Register be kept for all chemical storage and handling on the Project. The location of pollutants to be stored/held on-site shall be identified in the Register which can be accessed via PPW and is available on sharepoint. Main pollutants on-site are sediment laden water, piling polymer and fuel.

5. Safety Equipment

A list of pre-emptive actions (or mitigation measures) to be implemented during construction of the Project to minimise or prevent the risks to human health and the environment is outlined within Attachment B as well as in the project's WHS Management Plan, AMS documents, Safety Data Sheets (SDS) and CEMP documentation. These documents include a description of safety equipment and activity-specific equipment required to address specific hazards, risks, and safety issues. For example, spill kits will also be available on-site for all personnel to use with locations identified in the Site Environmental Plans for each worksite.

6. Maps

Maps showing the location of the premises, the surrounding areas that are likely to be affected by a pollution incident, the location of the potential pollutants on the premises, the location of any stormwater drains on the premises, and the nearest watercourse or water body have been developed (and continually updated with the works) within the SEPs, ESCPs, CEMP and associated sub-plans.

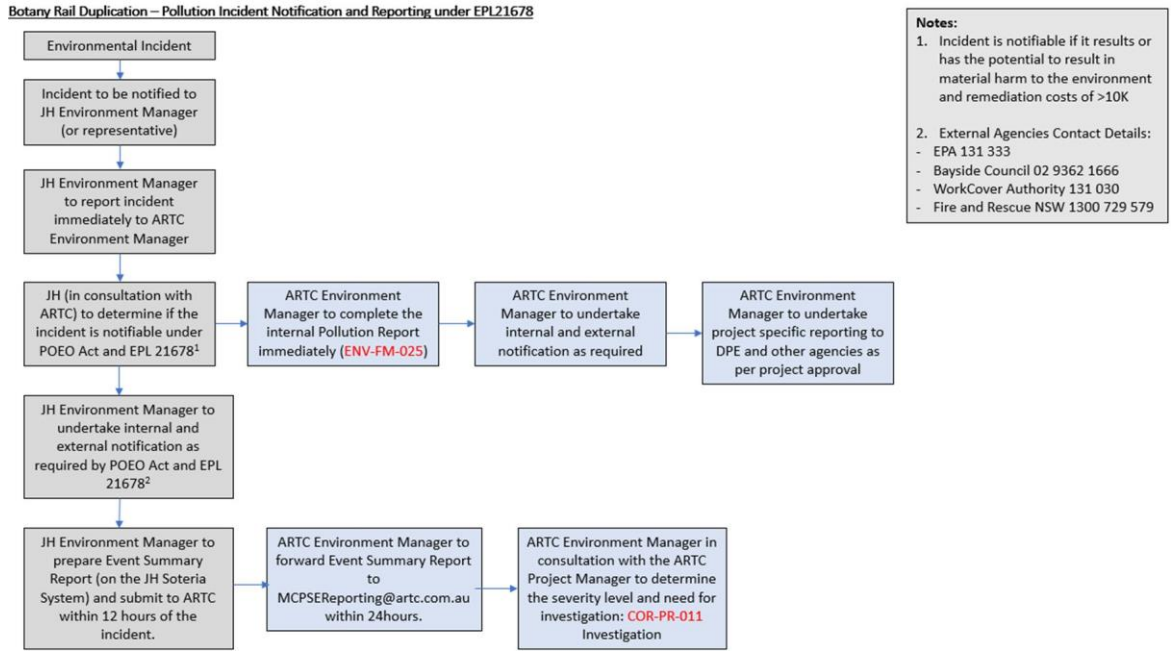
7. Training

Several forms of environmental training will be provided on the project, examples include:

- A project site induction, including environmental roles and responsibilities.
- Toolbox talks
- Environmental Work Method Statements; and
- Environmental awareness training for specific issues

The Environmental Lead (or delegate) will undertake training and a register will be maintained by the Project HSEQ Administrator of all project site inductions and training carried out.

8. Pollution Incident Management and Notification



9. Pollution Incident Response Scenarios

Pollution incident response scenarios are detailed in Attachment C as follows:

A. Spills or Releases
   - Oils and Greases
   - Turbid/Contaminated/Untreated Water
   - Fuel, Oil and Leachate
   - Dangerous Goods

B. Adverse Weather

10. Testing and Review

The testing of this plan shall be carried out in such a manner as to ensure that the information included in this plan is accurate and up to date and the plan is capable of being implemented in a workable and effective manner. Any such test is to be carried out:

- Routinely at least once every 12 months, and
- Within 1 month of any pollution incident occurring in the course of an activity to which the licence relates so as to assess, in the light of that incident, whether the information included in the plan is accurate and up to date and the plan is still capable of being implemented in a workable and effective manner.

In accordance with the Regulation, testing of this PIRMP will occur:

- Initially within three months after EPL 21678 approval
- Every 12 months thereafter, while construction continues; and
- Within 1 month of any Category One pollution incident during the construction of the Project.

Testing of the PIRMP will involve:

- Desktop simulation; or
- Practical implementation or drill

.

Records will be kept in accordance with the EPL Guideline. Refer to Attachment D for the Testing Control Records.

11. Hazard Identification

The main potential hazards associated with the BRD work activities are detailed in Table 11.1.

Table 11.1 Hazard Identification

Aspect	Hazards
Soil and Water	The Construction Soil and Water Management Plan details hazards to soil and water. Hazards include: - Refuelling - Earthworks increasing the risk of erosion and sedimentation - Storage of fuel and chemicals - Tree clearing, topsoil stripping and soil disturbance - Ground and surface water contamination
Waste	The Waste Management Control Plan (CEMP Appendix D) details hazards associated with waste. Hazards include: - Demolition wastes - Excavation wastes - Contaminated soils - Soils, general construction material and capping material - Liquid hazardous waste - General solid waste - Non-recyclable and other putrescible general solid waste - Fuels, oils, greases - Concrete slurries, drilling muds - Adhesives, lubricants, cleaning agencies, absorbent materials, water treatment chemicals, plastic materials - Concrete, aggregate, asphalt, metallic materials, cables, timber framework
Air Quality	The Air Quality Control Plan (CEMP Appendix D) details hazards associated with air. Hazards include: - Dust emissions - Particulate emissions
Noise and Vibration	The Construction Noise and Vibration Management Plan details hazards associated with noise and vibration. Hazards include: - Undertaking works outside approved construction hours - Works exceeding noise management levels - Work not in accordance with EPL 21678 - Vibration from project activities impacting surrounding heritage and other built structures.

Attachment A: Emergency Contact List

Emergency Contacts	Telephone Number	Local Contact
Ambulance	000 or 112 from mobiles	N/A
Fire	000 or 112 from mobiles	(02) 9667 3837 (Mascot) (02) 9666 5440 (Botany)
Police	000 or 112 from mobiles	(02) 8338 7399 (Mascot)
Comcare/SafeWork NSW	1300 336 979 / 131 050	N/A
Poisons Information Centre	131 126	N/A
Employee Assistance Program (EAP)	1800 991 151	N/A
EPA Pollution Line	131 555	N/A
IMMEX – Medical Centre	(02) 9319 5999	Call before attending
Mascot Medical and Dental	(02) 9317 4222	Call before attending
Royal Prince Alfred Hospital	(02) 9515 6111	N/A
Prince of Wales Hospital – Randwick	(02) 9650 4000	N/A
Water (water or sewer main)	132 092	N/A
Telstra – Damaged Cables	132 203	N/A
Telstra – Underground Services	1100/1800 653 935	N/A
Energy Australia (Electricity)	131 388	N/A
Jemina Gas	1300 880 906	N/A
ARTC Train Transit Manager Emergency Number	(02) 6924 9869	N/A
ARTC Network Controller	(02) 6924 9866	N/A
Office of National Rail Safety Regulator (ONRSR)	1800 572 077	N/A
Airport Emergency	(02) 9667 9090	
Site Personnel	**Contact Number**	**Contact Name**
Project Director	0437 475 070	Paul Dalziel
Construction Manager	0417 984 132	Jarod Wakefield
Superintendent	0418 790 167	Neil Campbell
Safety Manager	0437 477 911	Mark Baranowski
Environmental Manager	0439 464 796	Rachael Labruyere
Community Manager	0412 129 064	Loretta Mihaljek
Quality Manager	0477 291 805	Angela Phelan
Zones 1 & 2 Area Manager	0417 475 349	Chalana Hewage
Zones 3, 4 & 5 Area Manager	0439 036 804	Loui Tannous

Attachment B: Risk Assessment

A risk assessment has been carried out for the Hazards identified in Section 11 of this Plan and presented in Table 3 below. The risk rating for inherited risk level and residue risk level were based on a likelihood and consequence risk matrix detailed in Figure 1,Table 1 and 2 below.

Figure 1: Risk Matrix

Table 1: Likelihood Rating

Rating	Criteria
Almost Certain	>99% probability, or Expected to occur in most circumstances, or Could occur within 'days to weeks', or Will occur repeatedly without corrective action being taken
Likely	50-99% probability, or Will probably occur in most circumstances, or Could occur within 'weeks to months'
Possible	20-50% probability, or Might occur sometime, or Could occur within 'months to years'
Unlikely	1-20% probability, or Could occur but would not be expected, or Could occur in 'years to decades'
Rare	<1% probability, or Occurrence requires exceptional circumstances, or Only occur as a '100 year event'

Table 2: Consequences Rating

Rating		Criteria
1	Insignificant	Not affected
2	Minor	Minor impacts
3	Moderate	Moderate damage including local ecosystems. Some remedial action may be required
4	Major	Significant damage. Remedial action likely
5	Catastrophic	Extreme damage, including loss of species, habitats or ecosystems. Extensive remedial action likely.

Table 3: Risk Assessment

Key Hazards	Inherited Risk Level	Pre-Emptive Actions	Residual Risk Level
Contamination of soils and groundwater due to hydrocarbon / chemical spills from plant or refuelling / fuel storage	D	Spill kits to be made available on site to prevent material entering the watercourse or surface water drains. Tanks, bunds, plant, and machinery to be regularly maintained. Emergency spill response training. Appropriate storage and management of chemicals. Refuelling and wash-down in designated areas only. ECM identifying fuel storage, spill kits and refuelling locations	E
Sediment laden water leaving the site.	D	Dewatering procedures Sediment basins Progress earthworks in conjunction with establishment of ERSED controls	E
Pollution of land or water from chemical and hazardous waste, contaminated soil, concrete waste	D	Establish concrete waste area and concrete washout, location show on ECM. Establish waste material management process Identify designated waste storage locations on ECM	E
Impacts on air quality as a result of emissions from mobile plant / vehicles and exposed areas	D	Truck to cover loads Air Quality, Odour, and gas monitoring programs Dust suppression (e.g., water carts and stabilisers/soil binder) Minimise exposed surfaces and stage works to minimise disturbed areas.	E
Impacts to local receivers due to noise and vibration	C	Noise and Vibration monitoring Out of hours procedures and planning Comply to approved construction hours and out of hours work permits Communicate with the local community on out of hours works and general project activity updates/notifications Program high noise activities for standard construction hours and apply respite periods as required.	D

Note: This is not an exhaustive list of pre-emptive actions. For further information refer to the relevant section of the Construction Environmental Management Plan and Workplace Risk Assessment

Attachment C – Spill/Release

Note: Ensure the safety of yourself and others prior to or when carrying out spillage/release recovery

Actions during the Emergency

1. Identify type of spill/release	Is it contained (e.g. bunded) or uncontained (going to escape or drain)? Damaged/leaking containers should be addressed using the same process.
2. Identify the material	Is it flammable, toxic, corrosive, etc.? Refer to label, signage, MSDS.
3. Conduct risk assessment	Is the area safe, have you been trained, is it going to escape/drain?
4. Wear appropriate PPE	Gloves, goggles, apron, respirator, etc. in accordance with the MSDS.
5. Eliminate ignition sources	For flammable substances (or assumed flammable substances) remove energy supply to nearby switchboards, electrical equipment, power points and flames, static or sparks (this includes mobile phones and radios).
6. Take precautions	Avoid slipping, creating sparks, or breathing in vapours
7. Contain the spill/release	If safe to do so use containment booms or drain seal mats to prevent runoff to storm water drains of liquids.
8. Clean-Up	Use pads, pillows, and other absorbent material to soak up spill and then bag in labelled containers. Flush any residue off surfaces
9. Notify	Report spill or release to area supervisor, Environment Manager (or representative) and ARTC. Complete the Incident Notification and Investigation Report through the Soteria system.

Note: Particular attention should be paid to drains/water courses, potential ignition sources which could cause fire and explosions (buried gas pipes). Liquid spills may need to be dammed using appropriate bunding

Important – Notification to Fire Brigade

- Th Fire Brigade HAZMAT Team is to be notified immediately for any hazardous substance spill beyond control of the Project. This call should be made via ‘000’
- The Fire Brigade should also be informed via a ‘000’ call if the spillage or release has caused evacuation, entered drainage systems or is a size or nature that Site personnel have insufficient resources or training to safely and effectively manage.
- All information regarding the spill should be reported to the Officer-In-Charge of the Fire Brigade on arrival at the scene.

Actions during the Emergency

- Prevent unauthorised access to the area
- Consideration should be given to site environmental conditions and a decision made as to whether further evacuation of the area is required. Consider potential flammable atmosphere and radius when determining evacuation (this assessment needs to include nearby stakeholders and residents)
- Ensure that persons assemble in a well-ventilated, safe area, upwind from the spill/release
- Considerations, instructions and advice relating to specific spill types must be followed for the safety of colleagues, other persons and the environment

Oil and Grease Considerations:

- Stop the leak at the source
- Determine the type and size of the spill
- Protect storm water drains by forming barriers or blocking them
- Prevent any runoff into storm water drains - use the containment booms, located in the spill prevention kits, to confine small spillages (up to 200L).
- Spills that cause or potentially threaten material harm must be notified to the relevant authorities
- Spills of 1000 litres or more must be reported to the JH Regional HSEQ Manager
- Wear personnel protective equipment (PPE) located in the spill prevention kits to prevent skin and eye contamination and to avoid breathing any vapor. PPE includes overalls, splash apron, eye goggles, gloves (PVC or neoprene), footwear, and appropriate breathing apparatus.
- Clean up method will be dictated by the quantity spilled
- Emergency (Teflon pneumatic) pump for pumping out drains and holding pits. Spilled material must be pumped into approved (degassed), sealed, and labelled 200L steel drums
- Cleaning equipment (mops, squeegees etc.) for directing liquid spills into the bund or holding pits
- Spill response kits for absorbing minor spills
- Ensure that the spill area has been appropriately cleaned, and is no longer a hazard.

Turbid/ Contaminated or Untreated Water

- Inform Supervisor of problem, /exact location and the estimated volume magnitude
- Notify the JH Environment Manager
- Divert flow away from existing waterways
- Create barriers and block any storm water drains
- Contain the spill by forming a barrier around the affected area. Establish emergency berm (earth or sandbags) to contain trap storm water/sediment laden water or reduce flow. Where possible turbid/sediment laden divert dirty water to suitably sized operational sediment control point or basin device.
- Work on the source control / restoration of original control device e.g. tank, embankment. basin
- Assess impact and devise remedial action for affected waterway and embankment
- Apply buffering solutions/agents or pump out if necessary
- Remove sediment build-up deposit

Fuel, Oil & Leachate Spill Considerations into Mill Pond:

- If a spill occurs over or next to water stop work immediately, supervisor to direct crew in the prevention of further personal and environmental harm where possible (i.e. stop any leaks)
- Marine spill kits to be readily available at Mill Pond and site personnel trained in their use.
- Collect water samples from the spill location for further analysis
- Dispose of all contaminated waste via correct procedures and at waste facility licensed to accept contaminated waste
- Project Manager to contact the JH Environmental Manager who will contact the ARTC Environmental Manager and any other regulatory agencies in line with this procedure.

Dangerous Goods

- Identify the class of dangerous good (as described below) and the inherent dangerous physical property of that class (refer to product MSDS)
- Control the identified danger or anything that might increase the exposure to that danger
- Respond to the spill as per action steps outlined under Oils and Greases considerations

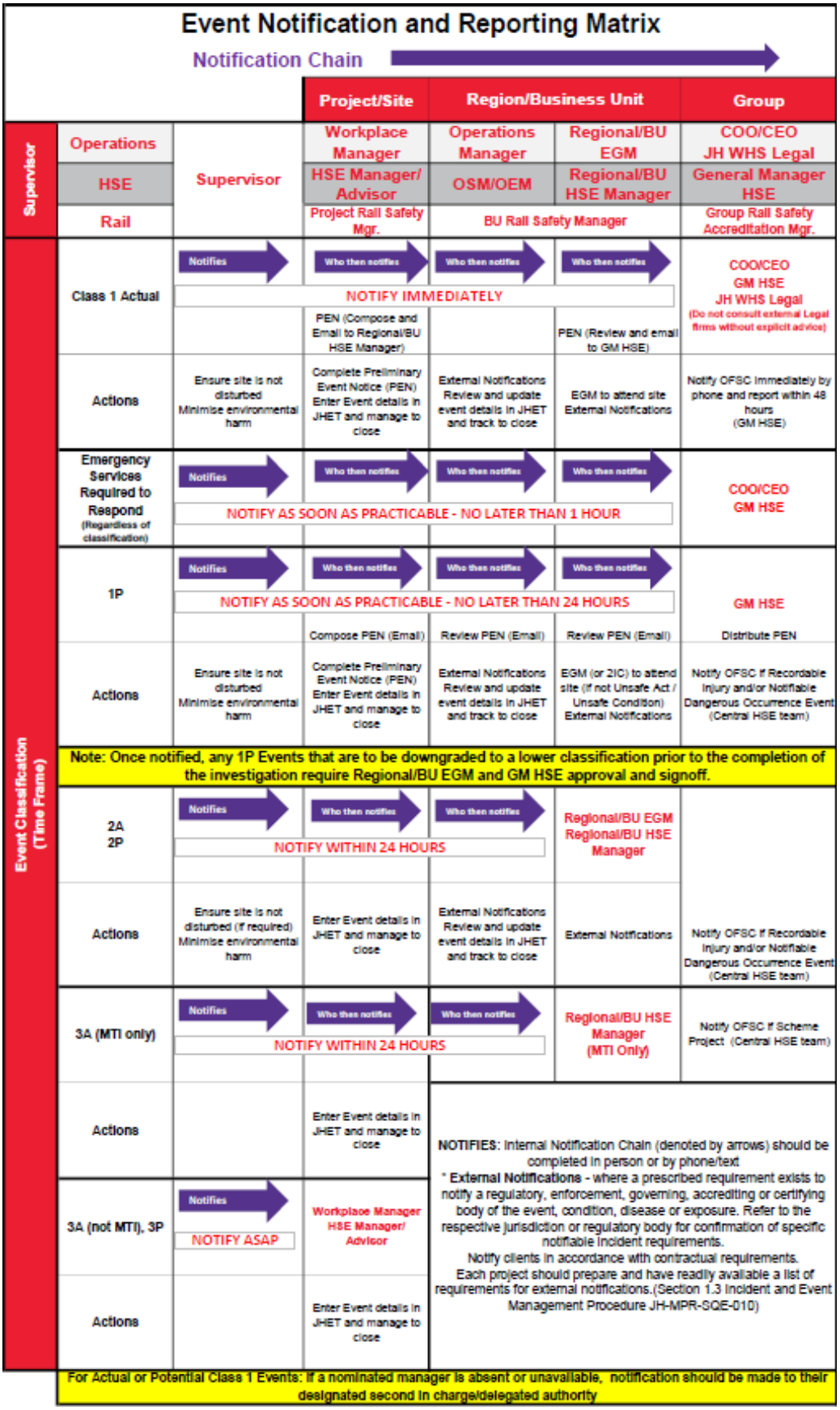
Storm / Severe Weather – General Guidelines

- If strong winds are anticipated, ensure that any objects that could become airborne in strong wind gusts and cause damage are brought under cover and (where possible) secured with on-site stockpiles covered
- If torrential rain is likely, ensure that ERSED controls are in place and materials on-site secured
- If a severe electrical storm are anticipated, review safety precautions concerning critical processes or outdoor work activity (staff and contractors) with applicable specialist personnel caution persons concerning use of electrical equipment such as phones and computers. Monitor passage of storm cell/s and temporarily suspend outdoor movement if risk of lightning strike
- Consult with Project Superintendent and determine if works areas need to be shut down or high risk activities are to be suspended.

Attachment D: Testing Control Records

Date	Description	Conducted by	Records
07/05/2022	Noise and Vibration – Plant/equipment/activity missing from an Out of Hours Assessment	Rachael Labruyere (Environment Manager)	Incident records and report. INC91854 Soteria. Updated OOH Assessment Root Cause Assessment including review by AA
24/02/2023	Pollution – Release into waterway	Rachael Labruyere (Environment Manager)	Incident records and report INC96195 Soteria R3 report/Root Cause Analysis

Attachment E: John Holland Event Notification and Reporting Matrix



Appendix L: Environmental Audit Schedule

This audit schedule has been prepared in accordance with CoA A34 and the Independent Audit Post-Approval Requirements 2018.
The initial audit will be carried out within 20 weeks of the commencement of construction and at intervals of less than 52 weeks from the date of the initial independent audit. Table 1 presents the proposed audit dates for the Project.

Table 1: Environmental Audit Schedule Proposed Dates

Element	Audit Lead	Frequency	Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
General CEMP/EMS	Independent Auditor (TBD)	Annual	2022					P							
			2023			P									
			2024		P										

Audit Methodology

Prior to commencement of audits, the proposed auditor will be agreed in writing by the Planning Secretary and the document agreeing to the auditor will be appended to the independent audit report. Independent audits will be both impartial and objective and include a review of the Conditions of Approval and Required Environmental Mitigation Measures as a minimum.

The auditor will consult with the Department and other agencies and stakeholders as part of the audit scope development.

The Independent Audits will include as a minimum:

- An assessment of compliance with the Conditions of Approval, relevant licences and Permits
- An assessment of compliance with the CEMP, Sub-Plans and Environmental Control Plans (ECPs), including the consultation process and feedback received from the Department and regulatory agencies
- An assessment of environmental performance including actual impacts compared to predicted impacts and the physical extent of the development in comparison with the approved boundary
- Incidents, non-compliances and complaints which occurred or were made during the audit period
- Status of previous audit findings and recommendations
- High level review of the Environmental Management Systems including internal monitoring and inspections
- Any other matters considered relevant by the auditor or the Department.
- Physical site inspection which includes all development areas and environmental aspects that form part of the audit scope.

The audits will commence with an opening meeting and conclude with a closing meeting. The meetings must be attended as a minimum by:

- Auditor
- JH Environment Manager
- JH Project Manager (or representative)
- ARTC Environmental Representative
- ARTC Project Manager (or representative)
- Technical Specialists (if relevant to the audit)

During the opening meeting, the scope of the audit and methodology will be discussed.

At the closing meeting, the auditor will present the preliminary audit findings and provide recommendations (if appropriate). Any post audit actions will also be confirmed at the closing meeting.

An Audit Table will be produced for each audit by the Independent Auditor. Table 2 is an example Audit Table for the Botany Rail Duplication Project, the table would be updated by the independent auditor prior to conducting a specific audit.

Table 2: Example Audit Table

Approval (ID)	Requirement	Evidence Collected	Independent Audit Findings and Recommendations	Compliance Status
Part A CoA A15	Construction ancillary facilities that are not identified by description and location in the documents listed in Condition A1 can only be established and used in each case if: (a) they are located within or immediately adjacent to the construction boundary; and (b) they are not located next to a sensitive land use (including where an access road is between the facility and the land use), unless the landowner and occupier have given written acceptance to the carrying out of the relevant facility in the proposed location; and (c) they have no impacts on heritage items (including areas of archaeological sensitivity), threatened species, populations or ecological communities beyond the impacts approved under the terms of this approval; and (d) the establishment and use of the facility can be carried out and managed within the outcomes set out in the terms of this approval, including in relation to environmental, social and economic impacts. Note: This condition does not preclude the use of other premises which is consistent with an approved use of those premises.	To be completed	To be completed	To be completed
Part A CoA A16	Before establishment of a major construction ancillary facility(ies) (excluding minor construction ancillary facilities established under Condition A18), the Proponent must prepare a Site Establishment Management Plan which outlines the environmental management practices and procedures to be implemented for the establishment of the construction ancillary facility(s). The Site Establishment Management Plan must be prepared in consultation with the relevant council and government authorities. The Plan must be submitted to the ER for approval one (1) month before the establishment of any major construction ancillary facility(ies).	To be completed	To be completed	To be completed

	The Site Establishment Management Plan must detail the management of the establishment of ancillary facilities and include: (a) a description of activities to be undertaken during establishment of the facility (including scheduling and duration of works to be undertaken at the site); (b) figures illustrating the proposed operational site layout; (c) a program for ongoing analysis of the key environmental risks arising from the site establishment activities described in subsection (a) of this condition, including an initial risk assessment undertaken prior to the commencement of site establishment works; (d) details of how the site establishment activities described in subsection (a) of this condition will be carried out to: (i) meet the performance outcomes stated in the documents listed in Condition A1, and (ii) manage the risks identified in the risk analysis undertaken in subsection (c) of this condition; and (e) a program for monitoring the performance outcomes, including a program for construction noise monitoring consistent with the requirements of Condition C9. Nothing in this condition prevents the Proponent from preparing individual Site Establishment Management Plans for each major construction ancillary facility.			
Part A CoA A18	Lunch sheds, office sheds, portable toilet facilities, material storage, parking and the like, can be established and used where they satisfy the following criteria: (a) are located within the Construction Boundary; and (b) have been assessed by the ER to have - (i) minor amenity impacts to surrounding residences and businesses, after consideration of matters such as compliance with the Interim Construction Noise Guideline (DECC, 2009), traffic and access impacts, dust and odour impacts, and visual (including light spill) impacts, and (ii) minor environmental impact with respect to waste management and flooding, and (iii) no impacts on biodiversity, soil and water, and heritage items beyond those already approved under other terms of this approval.	To be completed	To be completed	To be completed
Part A CoA A19	Boundary screening must be erected around major construction ancillary facilities that are adjacent to sensitive receivers for the duration of construction of the CSSI unless otherwise agreed with relevant Council, and adjacent residents, business operators or landowners.	To be completed	To be completed	To be completed
Part A CoA A20	Boundary screening required under Condition A19 of this approval must reduce visual, noise and air quality impacts on adjacent sensitive receivers.	To be completed	To be completed	To be completed
Part B CoA B1	A Communication Strategy must be prepared and implemented which provides mechanisms to facilitate communication about construction and operation (within the first 12 months of operation) with: (a) the community (including affected landowners and businesses, and others directly impacted by the CSSI), and (b) the relevant councils and government agencies	To be completed	To be completed	To be completed
Part B CoA B2	The Communication Strategy must: (a) identify people, organisations, councils and agencies to be consulted during the design and work phases; (b) identify community demographics and approaches to address the needs of LOTE and CALD and vulnerable communities; (c) set out procedures and mechanisms for	To be completed	To be completed	To be completed

	the regular distribution of accessible information, including to LOTE and CALD and vulnerable communities about or relevant to the CSSI; (d) identify opportunities for education within the community about construction sites; (e) provide for the formation of issue or location-based community forums that focus on key environmental management issues of concern to the relevant communities; (f) set out procedures and mechanisms: (i) through which the community can discuss or provide feedback to the Proponent; (ii) through which the Proponent will respond to enquiries or feedback from the community; and (iii) to resolve any issues and mediate any disputes that may arise in relation to Construction of the CSSI, including disputes regarding rectification or compensation.			
Part B CoA B3	The Communication Strategy must be submitted to the Planning Secretary for approval no later than one (1) month before commencement of construction. Construction for the purposes of the CSSI must not commence until the Communication Strategy has been approved by the Planning Secretary.	To be completed	To be completed	To be completed
Part B CoA B4	The Communication Strategy must be made publicly available and implemented for the duration of construction and for a minimum of 12 months following the completion of construction.	To be completed	To be completed	To be completed
Part B CoA B5	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.	To be completed	To be completed	To be completed
Part B CoA B6	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: (a) a 24- hour telephone number for the registration of complaints and enquiries about the CSSI; (b) a postal address to which written complaints and enquires may be sent; (c) an email address to which electronic complaints and enquiries may be transmitted; (d) a mechanism for CALD community members to make enquiries in LOTE commonly used in the community; and (e) a mediation system for complaints unable to be resolved. This information must be made publicly available.	To be completed	To be completed	To be completed
Part B CoA B7	The telephone number, postal address and email address required under Condition 0 of this approval must be made available on site hoarding at each construction site before the commencement of construction. This information must also be provided on the website required under Condition B10 of this approval.	To be completed	To be completed	To be completed
Part B CoA B8	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: (a) number of complaints received; (b) number of people potentially affected by the activities or impacts referenced by a complainant; and (c) nature, location and time of the complaint and means by which the complaint was addressed and whether resolution was reached, with or without mediation.	To be completed	To be completed	To be completed

Part C CoA C1	A Construction Environmental Management Plan (CEMP), or a Staged CEMP where staging is proposed in accordance with Condition A11, must be prepared by having regard to the Environmental Management Plan Guideline – Guideline for Infrastructure Projects (DPE, April 2020). The plan must detail how the performance outcomes, commitments and mitigation measures specified in the documents listed in Condition A1 will be implemented and achieved during construction.	To be completed	To be completed	To be completed
Part C CoA C2	The CEMP must provide: (a) a description of activities to be undertaken during construction (including the scheduling of construction); (b) details of environmental policies, guidelines and principles to be followed in the construction of the CSSI; (c) a program for ongoing analysis of the key environmental risks arising from the activities described in subsection (a) of this condition, including an initial risk assessment undertaken before the commencement of construction; (d) details of how the activities described in subsection (a) of this condition will be carried out to: (i) meet the performance outcomes stated in the documents listed in Condition A1; and (ii) manage the risks identified in the risk analysis undertaken in subsection (c) of this condition; (e) an inspection program detailing the activities to be inspected and frequency of inspections; (f) a protocol for managing and reporting any: (i) incidents; and (ii) non-compliances with this approval or statutory requirements; (g) procedures for rectifying any non-compliance with this approval identified during compliance auditing, incident management or at any time during construction; (h) a list of all the CEMP Sub-plans required in respect of construction, as set out in Condition C4. Where staged construction of the CSSI is proposed, the CEMP must also identify which CEMP Sub-plan applies to each of the proposed stages of construction; (i) a description of the roles and environmental responsibilities for relevant positions and their relationship with the ER; (j) for training and induction for employees, including contractors and sub-contractors, in relation to environmental and compliance obligations under the terms of this approval; (k) for periodic review and update of the CEMP and all associated plans and programs; (l) relevant details from the Site Establishment Management Plan(s); and (m) the Unexpected Heritage Finds Procedure required under Condition E12	To be completed	To be completed	To be completed
Part C CoA C5	The CEMP Sub-plans must state how: (a) the environmental performance outcomes identified in the documents listed in Condition A1 as modified by these conditions will be achieved; (b) the mitigation measures identified in the documents listed in Condition A1 as modified by these conditions will be implemented; (c) the relevant terms of this approval will be complied with; and (d) issues requiring management during construction (including cumulative impacts), as identified through ongoing environmental risk analysis, will be managed.	To be completed	To be completed	To be completed
Part C CoA C6	The Soil and Water Management Plan must be prepared by a suitably qualified and experienced person and include: (a) an Asbestos Management Plan (AMP) prepared in accordance with the National Environment Protection (Assessment of Site Contamination) Measure (NEPM) 2013 (b) an Acid Sulfate Soil Management	To be completed	To be completed	To be completed

<table>
<tr><td></td><td>Plan (ASSMP) developed in accordance with the Acid Sulfate Soils Manual (ASSMAC, 1998); and (c) an Unexpected Contamination Finds Procedure.</td><td></td><td></td><td></td></tr>
<tr><td>Part C
CoA C9</td><td>The following Construction Monitoring Programs set out below must be prepared and implemented to enable comparison of the actual construction performance against the predicted performance. The Construction Monitoring Programs must be prepared in consultation with the relevant government agencies and councils as identified for each Construction Monitoring Program
<table><tr><th></th><th>Required Construction Monitoring Programs</th><th>Relevant agencies to be consulted for each Construction Monitoring Program</th></tr><tr><td>(a)</td><td>Noise and Vibration</td><td>pipeline operator</td></tr></table></td><td>To be completed</td><td>To be completed</td><td>To be completed</td></tr>
<tr><td>Part C
CoA C10</td><td>Each Construction Monitoring Program must provide: (a) details of baseline data available; (b) details of baseline data to be obtained and when; (c) details of all monitoring of the project to be undertaken; (d) the parameters of the project to be monitored; (e) the frequency of monitoring to be undertaken; (f) the location of monitoring; (g) procedure for the timing and frequency reporting of monitoring and analysis against relevant criteria, including details of the timing and frequency for reporting results to the ER, the Planning Secretary and relevant government agencies; (h) details of the methods that will be used to analyse the monitoring data; (i) procedures to identify and implement additional mitigation measures where results of monitoring identify unexpected impact; and (j) any consultation to be undertaken in relation to the monitoring programs.</td><td>To be completed</td><td>To be completed</td><td>To be completed</td></tr>
<tr><td>Part C
CoA C14</td><td>The results of the Construction Monitoring Programs must be made publicly available in the form of a Construction Monitoring Report at the frequency identified in the relevant Construction Monitoring Program. Note: Where a relevant CEMP Sub-Plan exists, the relevant Construction Monitoring Program may be incorporated into that CEMP Sub-Plan.</td><td>To be completed</td><td>To be completed</td><td>To be completed</td></tr>
<tr><td>Part C
CoA C15</td><td>The Noise and Vibration Monitoring Program must include: (a) noise and vibration monitoring at agreed representative locations in consultation with the AA adjacent to the construction to confirm construction noise and vibration levels; and (b) for the purposes of (a), noise monitoring during the day, evening and night-time periods must be undertaken within the first month of construction and must cover the range of activities being undertaken at the sites.</td><td>To be completed</td><td>To be completed</td><td>To be completed</td></tr>
<tr><td>Part E
CoA E1</td><td>Air Quality
In addition to the performance outcomes, commitments and mitigation measures specified in the documents listed in Condition A1, all reasonably practicable measures must be implemented to minimise the emission of dust and other air pollutants during construction of the CSSI.</td><td>To be completed</td><td>To be completed</td><td>To be completed</td></tr>
<tr><td>RMMs</td><td>Air Quality</td><td>To be completed</td><td>To be completed</td><td>To be completed</td></tr>
</table>

CAQ1	Dust suppression will be undertaken as required using water sprays, water carts or other media on: • unpaved work areas subject to traffic or wind • sand, spoil and aggregate stockpiles • during the loading and unloading of dust generating materials. As a minimum, level 1 watering should be undertaken on general construction areas and level 2 watering should be undertaken on heavy construction areas. Further discussion including a description of construction work classification is provided in section 5.2 of Technical Report 3 – Air Quality Impact Assessment			
RMMs CAQ2	**Air Quality** Visual dust monitoring will be performed on a routine basis, and all staff will be trained to look out for visible dust leaving the worksite in the direction of sensitive receptors. If the works are creating visible dust plumes, the works will be modified or stopped until the dust hazard is reduced to an acceptable level. If complaints are received relating to dust from construction works, works will be reviewed to identify opportunities to reduce potential impacts from dust. In the instance of ongoing dust issues, or complaints, a short-term dust monitoring device will be installed in the relevant area which may be adjacent to a sensitive receptor near any longer term construction area.	To be completed	To be completed	To be completed
RMMs CAQ3	**Air Quality** Construction vehicles with potential for loss of loads (such as dust or litter) will be covered when using public roads.	To be completed	To be completed	To be completed
RMMs CAQ4	**Air Quality** Plant and equipment will be maintained in good condition to minimise spills and air emissions that may cause air quality impacts	To be completed	To be completed	To be completed
RMMs CAQ5	**Air Quality** The size of stockpiles will be minimised where possible and located as far as practicable from sensitive receptors	To be completed	To be completed	To be completed
RMMs CAQ6	**Air Quality** Identified areas which may have elevated PFAS/PFOS concentrations are limited to small areas shown in the Technical Report 5 – Contamination Assessment (WSP 2019)). This report includes specific management measures. Dust management measures are considered sufficient to manage dust from areas potentially containing PFAS however high risk areas will be identified in the site induction so all personnel are aware of the importance of dust management in	To be completed	To be completed	To be completed

	these areas. Dust management measures will prevent visible dust from potentially contaminated areas from leaving the construction site boundary			
Part E CoA E2	**Biodiversity** Any work associated with the CSSI must limit the clearing of native vegetation to the greatest extent practicable	To be completed	To be completed	To be completed
Part E CoA E3	**Biodiversity** Impacts to plant community types must not exceed those identified in the documents listed in Condition A1	To be completed	To be completed	To be completed
Part E CoA E4	**Biodiversity** Before any impact on the plant community types or species that are required to be offset, the Proponent must retire the credits specified in Table 4 and in accordance with the offset rules of the Biodiversity Conservation Act 2016.	To be completed	To be completed	To be completed
Part E CoA E5	**Biodiversity** The Proponent must submit to the Planning Secretary for information a copy of the Credit Retirement Report for the retirement of the biodiversity offsets specified in Table 4 within one (1) month of receiving the report.	To be completed	To be completed	To be completed
Part E CoA E6	**Tree Removal and Replacement Planting** The CSSI must deliver a net increase in trees. Replacement trees must target an increase in tree canopy and aim to enhance the relevant council's position in respect of the Sydney Green Grid. This condition does not apply to trees that are subject to a biodiversity offset.	To be completed	To be completed	To be completed
Part E CoA E7	**Tree Removal and Replacement Planting** Replacement trees must: (a) be located on public land and prioritised within 500 metres of the Construction Boundary in consultation with the relevant council and SACL; (b) comply with the National Airports Safeguarding Framework Guideline C: Managing the Risk of Wildlife Strikes in the Vicinity of Airports; (c) be provided no later than six (6) months following the commencement of operation; (d) have a pot size consistent with the relevant council's plans / programs / strategies for	To be completed	To be completed	To be completed

	vegetation management, street planting, or open space landscaping, or as agreed by the relevant council(s). In areas not subject to council plans/programs/strategies, pot sizes must be informed through consultation with the relevant council(s) and Sydney Airport.			
RMMs CBD1	**Biodiversity** If additional vegetation is identified to be impacted, an ecologist will undertake further assessment for impact and the need for offsetting in accordance with the legislation, prior to clearing	To be completed	To be completed	To be completed
RMMs CBD2	**Biodiversity** Protocols to prevent introduction or spread of chytrid fungus will be detailed in the relevant management plan and implemented following the DPE Hygiene protocol for the control of disease in frogs (DECC, 2008c)	To be completed	To be completed	To be completed
RMMs CBD3	**Biodiversity** The project environmental induction will include information on the ecological values of the study area, protection measures to be implemented to protect biodiversity and penalties for breaches.	To be completed	To be completed	To be completed
RMMs CBD4	**Biodiversity** Disturbance of vegetation will be limited to the minimum necessary to construct works. The contractor will design the layout of the work areas to locate infrastructure, where practicable, to previously cleared areas or areas of exotic vegetation to minimise or avoid impacts on native vegetation (and particularly EECs). Equipment storage and stockpiling of resources will be restricted to designated areas in cleared land.	To be completed	To be completed	To be completed
RMMs CBD5	**Biodiversity** A trained ecologist will undertake pre-clearing surveys and be present during the clearing of native vegetation or removal of potential fauna habitat during construction where necessary to avoid impacts on resident fauna as far as is practicable. Pre-clearing surveys will include: • inspections of native vegetation for resident fauna and/or nests or other signs of fauna occupancy • inspections of bridges for roosting bats • pre-clearing surveys for the Green and Golden Bell Frog at Mill Stream as a precaution • capture and relocation or captive rearing of less mobile fauna (such as nestling birds) by a trained fauna handler and with assistance from Wildlife Information Rescue and Education Service (WIRES) as required	To be completed	To be completed	To be completed

RMMs CBD6	**Biodiversity** Where the project site adjoins native vegetation, the limits of clearing will be marked and temporary fencing installed and maintained around the vegetated areas prior to the commencement of construction activities to avoid unnecessary vegetation and habitat removal.	To be completed	To be completed	To be completed
RMMs CBD7	**Biodiversity** Management and disposal of the weeds, including the priority weeds, will be conducted in accordance with the Biosecurity Act 2015 and the NSW Weed Control Handbook (DPI 2018c). Vehicles and other equipment to be used within the rail corridor will be cleaned to minimise seeds and plant material entering the study area to prevent the introduction of further exotic plant species or disease.	To be completed	To be completed	To be completed
RMMs CBD8	**Biodiversity** Revegetation of riparian areas along Mill Stream, Mill Pond and New Pond following construction will be undertaken by a bush regeneration contractor. Disturbed areas will be stabilised as soon as possible following construction and locally endemic species typical of Swamp Oak swamp forest and Coastal freshwater wetlands will be used to revegetate these disturbed riparian areas. The methodology for revegetation, including a suitable plant species list, will be included in the CEMP. A minimum 12 month maintenance period would follow the revegetation of Mill Stream riparian areas and any other disturbed areas.	To be completed	To be completed	To be completed
Part E CoA E8	**Flooding** Measures identified in in the documents listed in Condition A1 to not worsen or improve flood characteristics must be incorporated into the detailed design of the CSSI.	To be completed	To be completed	To be completed
Part E CoA E9	**Flooding** Flood information developed during detailed design, such as flood reports, models and geographic information system outputs, and work as executed information from a registered surveyor certifying finished ground levels, the dimensions and finished levels of all structures constructed as part of the CSSI within flood prone land, must be provided to the relevant council, EESG and the SES in order to assist in preparing relevant documents and to reflect changes in flood behaviour as a result of the CSSI. The council, EESG and the SES must be notified in writing that the information is available no later than one (1) month following the completion of construction. Information requested by the relevant Council, EESG or the SES must be provided no later than six (6) months following the completion of construction or within another timeframe agreed with the relevant council, EESG and the SES.	To be completed	To be completed	To be completed

RMMs CFL1	Plan, implement and maintain measures, which are aimed at: • intercepting flow from areas upstream of the project and diverting it in a controlled manner whether through or around the construction sites • implementing construction practices that minimise the potential for scour through stabilisation of disturbed surfaces.	To be completed	To be completed	To be completed
RMMs CFL2	Spoil stockpiles will need to be located in areas which are not subject to frequent inundation by floodwater and ideally outside the 1% AEP flood extent. The CEMP will define the flood immunity criteria for stockpiles proposed to be located in areas that are inundated during a 1% AEP event. These criteria will be based on the duration of stockpiling operations, the type of material stored, the nature of the receiving drainage lines and also the extent to which the stockpile will impact flooding conditions in adjacent areas.	To be completed	To be completed	To be completed
RMMs CFL3	As a minimum, site facilities are to be located outside high flood hazard areas based on a 1% AEP flood and ideally outside the 1% AEP flood extent. For site facilities located within the floodplain, the CEMP is to identify how risks to personal safety and damage to construction facilities and equipment will be managed. The CEMP will need to include details of: • the procedure to monitor accurate and timely weather data, and disseminate warnings to construction personnel of impending flood producing rain • an evacuation plan for construction personnel should a severe weather warning be issued.	To be completed	To be completed	To be completed
RMMs CFL4	The CEMP will need to include details and procedures to manage the potential for proposed construction activities to adversely impact on flood behaviour in adjacent development. A more detailed assessment of the impact that construction activities will have on flood behaviour, as well as the scope of measures which will be required to mitigate those impacts, will need to be undertaken during the detailed design phase, with the benefit of more refined construction plans and details by the preferred construction contractor. Subject to the outcomes of further design development and flood assessment during the detailed design phase, a floor level survey may need to be undertaken of affected properties (i.e. in properties where there is a potential increase in flood levels) to determine whether construction activities will increase flood damages in adjacent development and if mitigation measures are required. The layout of the construction compounds, material storage areas, as well as temporary crane pads and temporary piling platforms will need to be designed to: • limit the extent of works located in floodway areas • divert overland flow either through or around work areas in a controlled manner • minimise adverse impacts on flood behaviour in adjacent development.	To be completed	To be completed	To be completed

	Measures to manage residual flood impacts may include: • staging construction to limit the extent and duration of temporary works on the floodplain • ensuring construction equipment and materials are removed from floodplain areas at the completion of each work activity or should a weather warning be issued of impending flood producing rain • providing temporary flood protection to properties identified as being at risk of adverse flood impacts during any stage of construction of the project • developing flood emergency response procedures to remove temporary works during periods of heavy rainfall.			
Part E CoA E40	**Soils** All reasonably practicable erosion and sediment controls must be installed and appropriately maintained to minimise water pollution. When implementing such controls, any relevant guidance in the Managing Urban Stormwater series must be considered.	To be completed	To be completed	To be completed
Part E CoA E63	**Water** The CSSI must be designed, constructed and operated so as to not worsen water quality of surface water discharged from the rail corridor unless an EPL in force in respect of the CSSI contains different requirements.	To be completed	To be completed	To be completed
Part E CoA E64	**Water** Drainage feature crossings (permanent and temporary watercourse crossings and stream diversions) and drainage swales and depressions must be constructed in accordance with relevant guidelines and designed by a suitably qualified and experienced person.	To be completed	To be completed	To be completed
Part E CoA E65	**Water** Works on waterfront land must be carried out in accordance with Guidelines for Controlled Activities on Waterfront Land (NRAR 2018).	To be completed	To be completed	To be completed
RMMs CWQ1	**Water Quality and Soils** **A Soil and Water Management Plan will be developed to manage soil and water risks during the projects main construction works, including risks associated with encountering existing and potential soil contamination.**	To be completed	To be completed	To be completed

	Procedures to store, handle and use materials and equipment appropriately to prevent spills and leaks will be included in the SWMP.			
RMMs CWQ2	**Water Quality and Soils** Leakage of fuels, oils, chemicals and other hazardous liquids will be immediately cleaned up in accordance with the Safety Data Sheet and relevant emergency response procedures.	To be completed	To be completed	To be completed
RMMs CWQ3	**Water Quality and Soils** Adequately stocked spill kits will be readily accessible to site personnel during all refuelling activities	To be completed	To be completed	To be completed
RMMs CWQ4	**Water Quality and Soils** Construction plant and equipment will be regularly inspected and maintained to prevent leaks.	To be completed	To be completed	To be completed
RMMs CWQ5	**Water Quality and Soils** All potentially contaminating substances will be stored in secure, bunded and impervious locations away from surface water features and outside of the extent of the 20 year ARI design flood wherever practicable	To be completed	To be completed	To be completed
RMMs CWQ6	**Water Quality and Soils** Impervious and bunded areas will be established for the on-site maintenance of construction plant and equipment.	To be completed	To be completed	To be completed
RMMs CWQ7	**Water Quality and Soils** The area of exposed soils within the project site will be minimised through staging vegetation clearing and ground disturbing works across the project site. Disturbed areas and all long-term stockpiles will be protected or stabilised during periods of inactivity. Areas disturbed by construction activities will be rehabilitated and restored as soon as possible after completion of works in the area	To be completed	To be completed	To be completed

RMMs CWQ8	**Water Quality and Soils** Where feasible, construction activities will be scheduled to avoid ground disturbance works or in-stream works during periods of heavy or prolonged rainfall.	To be completed	To be completed	To be completed
RMMs CWQ9	**Water Quality and Soils** Protect stockpiles of loose material from erosion due to rain and wind	To be completed	To be completed	To be completed
RMMs CWQ10	**Water Quality and Soils** Erosion and sediment control measures will be implemented prior to soil disturbance in accordance with Managing Urban Stormwater: Soils and Construction Volume 1 (Landcom, 2004) and included in the SWMP. Erosion and sediment controls throughout the project site will be regularly inspected and maintained.	To be completed	To be completed	To be completed
RMMs CWQ11	**Water Quality and Soils** Remove all material from the site as soon as practical at the completion of work	To be completed	To be completed	To be completed
RMMs CWQ12	**Water Quality and Soils** Specific measures and procedures for works within waterways, such as the use of silt barriers will be implemented where necessary.	To be completed	To be completed	To be completed
RMMs CWQ13	**Water Quality and Soils** Instruct site workers on the need to prevent materials from washing or blowing into the stormwater system	To be completed	To be completed	To be completed
RMMs CWQ14	**Water Quality and Soils** Infiltration trenches will be installed to allow for potentially contaminated water to be collected and infiltrated back into groundwater rather than flowing to surface water	To be completed	To be completed	To be completed
RMMs CWQ15	**Water Quality and Soils** A groundwater construction monitoring program will be prepared and implemented as per chapter 8 of Technical Report 7 – Groundwater Impact Assessment. This monitoring program will verify the effectiveness of construction activities at preventing changes in the beneficial use potential of the aquifer system. A surface water quality monitoring program will be prepared and implemented for specific construction works (refer to section 6.2.3 of Technical Report 8 Surface Water Impact Assessment).	To be completed	To be completed	To be completed

RMMs CWQ16	**Water Quality and Soils** Bins will be provided on-site for litter. All general litter and waste collected on-site will be transported off-site to an appropriate waste facility.	To be completed	To be completed	To be completed
Part E CoA E41	**Contaminated Sites** A Site Contamination Report, documenting the outcomes of Stage 1 and Stage 2 contamination assessments of land upon which the CSSI is to be carried out, or land associated with the CSSI, that is suspected, or known to be, contaminated must be prepared by a suitably qualified and experienced person in accordance with guidelines made or approved under Section 105 of the Contaminated Land Management Act 1997 (NSW). Note: for that land where Stage 1 and Stage 2 contamination assessments have already been undertaken, they do not need to be undertaken again for the purposes of this condition.	To be completed	To be completed	To be completed
Part E CoA E42	**Contaminated Sites** A Remediation Action Plan must be prepared by a suitably qualified and experienced person in accordance with guidelines made or approved under Section 105 of the Contaminated Land Management Act 1997 (NSW).	To be completed	To be completed	To be completed
Part E CoA E43	**Contaminated Sites** The proponent must engage a NSW EPA accredited Site Auditor throughout the duration of works to ensure that any work required in relation to soil or groundwater contamination is appropriately managed. The Proponent must adhere to the management measures accepted by the Site Auditor.	To be completed	To be completed	To be completed
Part E CoA E44	**Contaminated Sites** The Proponent must submit to the Planning Secretary the following: (a) an Interim Audit Advice or a Section B Site Audit Statement prepared by the Site Auditor that certifies that the Remediation Action Plan prepared in Condition E42 is appropriate and that the site can be made suitable for the proposed use. (b) if work is to be completed in stages, any Interim Audit Advice/s issued by the Site Auditor to confirm satisfactory completion of each stage. (c) a Section A1 Site Audit Statement or a Section A2 Site Audit Statement and accompanying Site Audit Report prepared by a NSW EPA accredited Site Auditor must be submitted to the Planning Secretary and the relevant Council for information no later than one month before the commencement of operation	To be completed	To be completed	To be completed
Part E CoA E45	**Contaminated Sites** Contaminated land must not be used for the purpose approved under the terms of this approval until a Site Audit Statement determines the land is suitable for that purpose and any conditions on the Site Audit Statement have been complied with.	To be completed	To be completed	To be completed

RMMs CCT1	A remediation action plan (RAP) will be prepared for Area 1 in accordance with the National Environmental Protection (Assessment of Site Contamination) Measure (NEPM 2013) prior to placement of the asbestos capping layer. Remediation in Area 1 will be undertaken in accordance with the endorsed RAP. Following this, a validation report will be prepared by a suitably qualified environmental consultant to validate the suitability of the project site for its proposed use. Installation of the capping layer will be done under the supervision of a suitably qualified and experienced consultant, as defined in Schedule B9 of the NEPM. The final elevation of residual contaminated soils will be surveyed prior to the installation of the marking layer and capping layers. Final levels should also be surveyed and included in the SWMP and ARTC asbestos register.	To be completed	To be completed	To be completed
RMMs CCT2	West of Robey Street within Area 2, existing investigations will be supplemented with additional sampling using a test pit or trenching method in accordance with NEPM 2013 and WA Department of Health (WA-DoH) 2009, Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia. If enabling works in this area are undertaken prior to additional sampling, ACM will be assumed to be present and works will be supervised by an appropriately licensed contractor. This will be specified in site EMPs for the enabling works.	To be completed	To be completed	To be completed
RMMs CCT3	An acid sulfate soils management plan (ASSMP) will be developed prior to start of enabling works in accordance with the ASSMAC (1998) Acid Sulfate Soils Manual and included in the SWMP. ASS encountered during construction will be managed in accordance the ASSMP	To be completed	To be completed	To be completed
RMMs CCT4	An asbestos management plan (AMP) will be prepared prior to start of enabling works in accordance with NSW EPA guidelines (including waste guidelines), SafeWork NSW 2014, Managing Asbestos in or on Soil and relevant industry codes of practice. This AMP will be included in the SWMP.	To be completed	To be completed	To be completed
RMMs CCT5	An emu pick involving the systematic manual collection of identified asbestos surface fragments will be undertaken prior to soil disturbance in Area 1 and the section west of Robey Street in Area 2, to remove ACM fragments from the site surface. A clearance certificate will be obtained from a licensed asbestos assessor	To be completed	To be completed	To be completed
RMMs CCT6	Adopt construction techniques to avoid groundwater disturbance where practicable. If groundwater is encountered, temporarily store all extracted	To be completed	To be completed	To be completed

	groundwater to be disposed of offsite in appropriate containers then ensure it is tested for potential contaminants (including PFAS). Options for final disposal of extracted groundwater include: • removal offsite to a water recycling facility if the level of contaminants does not exceed the water acceptance thresholds • discharge to a sewer via a trade waste agreement with Sydney Water • treatment through a groundwater remediation system before being released to surface water (with approval from NSW EPA). For the above options, the analytical testing results will need to demonstrate compliance with the applicable licence or discharge criteria			
RMMs CCT7	Procedures to store, handle and use materials and equipment appropriately to prevent spills will be prepared and implemented during construction, and included in the SWMP. Immediately contain and clean up leakage of fuels, oils, chemicals and other hazardous liquids in accordance with the Safety Data Sheet and ARTC's NSW Pollution Incident Response Management Plan to prevent migration of contaminants to other parts of the site	To be completed	To be completed	To be completed
RMMs CCT8	Employ stockpile management procedures as per ARTC's Standard Environmental Management Measures for segregating soil and preventing cross-contamination of clean soil with contaminated soil. These will be documented in the SWMP.	To be completed	To be completed	To be completed
RMMs CCT9	ACM impacted soil will be handled and managed in accordance with the AMP at all times during construction. Areas that are designated as ACM contaminated areas will be clearly fenced off and suitable warning signs posted prior to soil disturbance in that area. Hygiene facilities will be provided incorporating a high standard of washing facilities and storage area for contaminated clothing/footwear. These areas will only be accessible to authorised personnel and work permitted only under controlled/supervised conditions by appropriately qualified/licensed personnel.	To be completed	To be completed	To be completed
RMMs CCT10	An unexpected finds procedure will be prepared prior to commencement of enabling works and included as part of the SWMP. It will identify the process to follow in the event that indicators of contamination are encountered during construction (such as odours, ACM or visually contaminated materials).	To be completed	To be completed	To be completed
Part E	Following completion of all work described in in the documents listed in Condition A1 in relation to heritage items, except for the archaeological mitigation programs	To be completed	To be completed	To be completed

CoA E10	proposed, a Heritage Report including the details of any archival recording, must be prepared in accordance with guidelines and standards published by the Heritage Council of NSW and EESG.			
Part E CoA E11	The Heritage Report must be submitted to the Planning Secretary, the Heritage Council of NSW and EESG for information no later than 12 months after the completion of the work referred to in Condition E10.	To be completed	To be completed	To be completed
Part E CoA E12	An Unexpected Heritage Finds Procedure must be prepared to manage unexpected heritage finds in accordance with guidelines and standards published by the Heritage Council of NSW or EESG Human Remains would classify as an unexpected find and should be managed as part of this protocol. Note: Human remains that are found unexpectedly during the carrying out of works may be under the jurisdiction of the NSW State Coroner and must be reported to the NSW Police immediately.	To be completed	To be completed	To be completed
Part E CoA E13	The Unexpected Heritage Finds Procedure must be implemented for the duration of construction work.	To be completed	To be completed	To be completed
RMMs CNH1	For the Botany Water Reserves (also known as Botany Wetlands or Botany Swamps), the following site specific management measures will be implemented: • establishment of fenced exclusion zones around the item's SHR curtilage to prevent inadvertent impacts to the item prior to, and during construction of the project • engagement of an arborist to ensure significant plant species are not impacted during the construction phase if impacts outside of the project footprint are proposed • archaeological monitoring in areas assessed as containing low potential for Phase 1 archaeological remains where subsurface impacts are proposed. This would be carried out in accordance with recommendations set out in Section 11.5 of Technical Report 9 – Statement of Heritage Impact.	To be completed	To be completed	To be completed
RMMs CNH2	The CEMP will identify measures to specifically minimise the potential impact to the bridge during the construction phase of the project. This may include establishment of protective barriers or pads around elements of the bridge to ensure impacts to fabric are avoided	To be completed	To be completed	To be completed
RMMs CNH3	The CEMP will include measures to prevent inadvertent impacts to fabric within the curtilage of the Sydney Airport Group south of Qantas Drive. This may include establishment of an exclusion zone around the LEP curtilage for the item. The inclusion of the exclusion zone in the ECMs would be appropriate.	To be completed	To be completed	To be completed
RMMs CNH4	For the potential archaeological remains shown in Figure 15.4, archaeological monitoring or testing will be undertaken (where required) in accordance with	To be completed	To be completed	To be completed

	recommendations set out in Section 11.5 of Technical Report 9 – Statement of Heritage Impact			
RMMs CNH5	Photographic archival recording and reporting will be carried out in accordance with the NSW Heritage Office's How to Prepare Archival Records of Heritage Items (1998), and Photographic Recording of Heritage Items Using Film or Digital Capture (NSW Heritage Office 2006) for the following items: • Mascot (Botany Road) Underbridge • Mascot (O'Riordan Street) Underbridge • Mascot (Robey Street) Underbridge • existing nature and elements of the Botany Rail Line located within the study area. The relevant record will be prepared by a suitably qualified heritage consultant using archival-quality material prior to the demolition or modification of each bridge, and main construction works to Botany Line. Additional recording may also take place during bridge removal. Records for LEP-listed items will be held by the local Council and local library. A copy of the record will be held by the owner of the asset	To be completed	To be completed	To be completed
RMMs CNH6	As the items listed on the ARTC s170 register will be demolished, a s170 notification will be provided to Sydney Trains and the NSW Heritage Division prior their demolition: • Mascot (O'Riordan Street) Underbridge • Mascot (Robey Street) Underbridge.	To be completed	To be completed	To be completed
RMMs CNH7	The location of subsurface excavations will be designed, where possible to avoid areas containing low or moderate potential for State and locally significant Phase 1 and 2 resources.	To be completed	To be completed	To be completed
RMMs CNH8	The project environmental induction will include making contractors aware of areas of high/moderate archaeological potential, areas containing highly significant fabric, relevant strategies to minimise potential impacts on archaeological remains and heritage fabric, information regarding the identification and management of unexpected archaeological and heritage finds and their obligations under NSW heritage legislation and the conditions of approval for the project. The induction will be provided to relevant contractors and subcontractors and its preparation overseen and approved by a suitably qualified heritage professional.	To be completed	To be completed	To be completed
RMMs CNH9	An Unexpected Finds Procedure will be established and implemented in the case of unexpected structural and archaeological finds	To be completed	To be completed	To be completed
RMMs	The Heritage Council must be notified if a relic is uncovered during construction	To be completed	To be completed	To be completed

CNH10				
RMMs CAH1	An unexpected finds procedure will be prepared and include requirements for: • protecting any unexpected finds (including Aboriginal heritage items and human skeletal remains) encountered during construction activities • procedures to manage reporting and investigation when unexpected finds are encountered	To be completed	To be completed	To be completed
RMMs CAH2	If suspected human skeletal remains are uncovered at any time throughout undertaking the proposed works, the unexpected finds procedure will be implemented.	To be completed	To be completed	To be completed
Part E CoA E14	Work must only be undertaken during the following standard construction hours: (a) 7:00am to 6:00pm Mondays to Fridays, inclusive; (b) 8:00am to 1:00pm Saturdays; and (c) at no time on Sundays or public holidays.	To be completed	To be completed	To be completed
Part E CoA E15	Notwithstanding Condition E14, work may be undertaken between 1:00 pm to 6:00 pm on Saturday.	To be completed	To be completed	To be completed
Part E CoA E16	Notwithstanding Conditions E14, E15 and E19 work may be undertaken outside the hours specified in the following circumstances: (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) an approval has been obtained for a controlled activity under the Airports Act 1996; or (d) where different construction hours are permitted or required under an EPL in force in respect of the CSSI; or (e) work approved under an Out-of-Hours Work Protocol for work not subject to an EPL as required by Condition E29; or (f) construction that causes LAeq(15 minute) noise levels: (i) no more than 5 dB(A) above the rating background level at any residence in accordance with the Interim Construction Noise Guideline (DECC, 2009), and (ii) no more than the 'Noise affected' noise management levels specified in Table 3 of the Interim Construction Noise Guideline (DECC, 2009) at other sensitive land uses, and (iii) continuous or impulsive vibration values, measured at the most affected residence are no more than the maximum values for human exposure to vibration, specified in Table 2.2 of Assessing Vibration: a technical guideline (DEC, 2006), and (iv) intermittent vibration values measured at the most affected residence are no more than the maximum values for human exposure to vibration, specified in Table 2.4 of Assessing Vibration: a technical guideline (DEC, 2006); or (g) negotiated agreements with directly affected residents. Note: Section 5.24(1)(e) of the EP&A Act requires that an EPL be substantially consistent with this approval.	To be completed	To be completed	To be completed
Part E CoA E17	On becoming aware of the need for emergency works in accordance with Condition E16, the Proponent must notify the AA, ER and the EPA (if an EPL applies) of the need for that work. The Proponent must use best endeavours to	To be completed	To be completed	To be completed

	notify all noise and/or vibration affected occupants of sensitive land uses of the likely impact and duration of those works			
Part E CoA E18	Except as permitted by an EPL, out-of-hours work that may be regulated through the Out of Hours Work Protocol as per Condition E28 includes, but is not limited to: (a) carrying out work that, during standard hours, would result in a high risk to construction personnel or public safety, based on a risk assessment carried out in accordance with AS/NZS ISO 31000:2009 “Risk Management”; or (b) where the relevant road authority has advised the Proponent in writing that carrying out the work during standard hours would result in a high risk to road network performance and a road occupancy licence will not be issued; or (c) where the relevant utility service operator has advised the Proponent in writing that carrying out the work during standard hours would result in a high risk to the operation and integrity of the utility network; or (d) where an approval is required for a controlled activity in accordance with the Airports Act 1996; or (e) work undertaken in a rail possession for operational or safety reasons. Note: Other out-of-hours works can be undertaken with the approval of an EPL, or through the project’s Out-of-Hours Work Protocol for works not subject to an EPL.	To be completed	To be completed	To be completed
Part E CoA E19	Except as permitted by an EPL or approved through the Out of Hours Work Protocol in Condition E29, highly noise intensive work must only be undertaken: (a) between the hours of 8:00 am to 6:00 pm Monday to Friday; (b) between the hours of 8:00 am to 1:00 pm Saturday; and (c) if continuously, then not exceeding three (3) hours, with a minimum cessation of work of not less than one (1) hour between each block where the work is likely to impact the same noise sensitive receivers. For the purposes of this condition, 'continuously' includes any period during which there is less than one (1) hour between ceasing and recommencing any of the work. Note: This condition does not prevent a negotiated agreement being reached with affected sensitive receivers as per Condition E16.	To be completed	To be completed	To be completed
Part E CoA E20	The Proponent must consult with proponents or applicants of other State Significant development and infrastructure within 200 metres of the CSSI and take reasonable steps to coordinate work, including utility work, to minimise cumulative	To be completed	To be completed	To be completed

	impacts of noise and vibration and maximise respite for affected sensitive receivers.			
Part E CoA E21	All work undertaken for the delivery of the CSSI, including those undertaken by third parties (such as utility relocations), must be coordinated to ensure respite is provided. The Proponent must: (a) reschedule any work to provide respite to impacted noise sensitive receivers so that the respite is achieved in accordance with Condition E26; or (b) consider the provision of alternative respite or mitigation to impacted noise sensitive receivers; and (c) provide documentary evidence to the AA and ER in support of any decision made by the Proponent in relation to respite or mitigation.	To be completed	To be completed	To be completed
Part E CoA E22	Noise generating work in the vicinity of potentially affected community, religious, educational institutions and noise and vibration-sensitive businesses and critical working areas (such as theatres, laboratories and operating theatres) resulting in noise levels above the relevant NML must not be timetabled within sensitive periods, unless other reasonable arrangements with the affected institutions are made at no cost to the affected institution	To be completed	To be completed	To be completed
Part E CoA E23	Mitigation measures must be implemented with the aim of achieving the following construction noise management levels and vibration criteria: (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). Any work identified as exceeding the noise management levels and/or vibration criteria must be managed in accordance with the Noise and Vibration CEMP Sub-plan. 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. Mitigation measures must provide ongoing mitigation for construction noise	To be completed	To be completed	To be completed
Part E CoA E24	Owners and occupiers of properties at risk of exceeding the screening criteria for cosmetic damage must be notified before works that generate vibration commences in the vicinity of those properties. If the potential exceedance is to occur more than once or extend over a period of 24 hours, owners and occupiers are to be provided a schedule of potential exceedances on a monthly basis for the duration of the potential exceedances, unless otherwise agreed by the owner and occupier. These properties must be identified and considered in the Noise and Vibration CEMP Sub-plan.	To be completed	To be completed	To be completed
Part E	The Proponent must conduct vibration testing before and during vibration generating activities that have the potential to impact on heritage items to be	To be completed	To be completed	To be completed

CoA E25	retained and protected, to identify minimum working distances to prevent cosmetic damage. In the event that the vibration testing and monitoring shows that the preferred values for vibration are likely to be exceeded, the Proponent must review the construction methodology and, if necessary, implement additional mitigation measures.			
Part E CoA E26	The Proponent must provide respite* for sensitive land uses where work is undertaken outside hours specified in Condition E14 and E15 and exceeds the NML by 25 dB(A) or are greater than 75 dB(A) (LAeq(15 min)), whichever is the lesser at the façade of the building of a residential receiver. (The noise level must be reduced by 5dB where the noise contains annoying characteristics and increased by 10dB if the property has been treated or offered at-property noise treatment) Note * respite can be any combination of days or hours where out of hours work would not be more than 5dB(A) above the rating background level at any residence	To be completed	To be completed	To be completed
Part E CoA E27	In order to undertake work outside hours specified in Condition E14 and E15, the Proponent must identify appropriate respite* required by Condition E26, and/or additional mitigation measures required by Condition E28, for out-of-hours work in consultation with the community at each affected location on at least a 3 monthly basis. This consultation must include (but not be limited to) providing the community with a three-monthly forward schedule of likely out of hours works. The schedule must include: (a) an indicative schedule of likely out-of-hours work for a period no less than three (3) months; (b) a description of the potential work, location and duration; (c) the noise characteristics and likely noise levels of the work; and (d) likely mitigation and management measures to be implemented and/or offered. The outcomes of the community consultation (including any agreed alternative arrangements), the identified respite periods and the scheduling of the likely out-of-hour works must be provided to the AA, ER and EPA. Note * respite periods can be any combination of days or hours where out of hours works would not be more than 5dB(A) above the rating background level at any residence.	To be completed	To be completed	To be completed
Part E CoA E28	Additional mitigation measures such as temporary alternative accommodation or other agreed mitigation measure, must be offered/ made available to residents affected by out-of-hours work (including where utility work is being undertaken for the project) where the construction noise levels, between: (a) 10:00 pm and 7:00 am, Monday to Friday; (b) 10:00 pm Saturday to 8:00 am Sunday; and (c) 6:00 pm Sunday and public holidays to 7:00 am the following day unless that day is Saturday	To be completed	To be completed	To be completed

	then to 8:00am, are predicted to exceed the NML by 25 dB(A) or are greater than 75 dBA (LAeq(15 min)), whichever is the lesser and the impact is planned to occur for more than two (2) nights over a seven (7) day rolling period. The NML must be reduced by 5 dB where the noise contains annoying characteristics and increased by 10 dB if the property has been treated or offered at-property noise treatment. The noise levels and duration requirements identified in this condition may be changed through an EPL applying to the CSSI.			
Part E CoA E29	An Out-of-Hours Work Protocol must be prepared to describe the process for the consideration, management and approval of work which is outside the hours defined in Conditions E14 and E15 and E19 and that is not subject to an EPL. The Protocol must be approved by the Planning Secretary before commencement of out of hours work. The Protocol must be prepared in consultation with the AA. The Protocol must: (a) provide a process for the consideration of out-of-hours work against the relevant noise management level and vibration criteria (including ground-borne noise), including the determination of low and high-risk activities; (b) provide a process for the identification of mitigation measures for residual impacts, including respite periods in consultation with the community at each affected location, consistent with the requirements of Condition E26 and E27, and additional mitigation measures in accordance with Condition E28; (c) identify procedures to facilitate the coordination of out-of-hours works approved by an EPL to ensure appropriate respite is provided; (d) identify an approval process that considers the risk of activities, proposed mitigation, management and coordination, including where:	To be completed	To be completed	To be completed

	(i) low risk activities can be approved by the ER in consultation with the AA, and (ii) high risk activities can be approved by the ER in consultation with the AA, and the approval provided to the Planning Secretary for information before work commences; and (e) identify arrangements to notify EPA and community for approved out of hours works, which maybe detailed in the Communication Strategy			
Part E CoA E30	The project must be designed to comply with the ground-borne noise trigger levels in the Rail Infrastructure Noise Guideline (EPA, 2013). Where the ground-borne noise trigger levels cannot be achieved the Proponent must implement management and/or mitigation measures to minimise exceedances. Note: In determining whether the ground-borne noise trigger levels in the Rail Infrastructure Noise Guideline are applicable, the effect of operational mitigation measures including noise barriers and architectural acoustic treatments must be considered. To assist in policy interpretation, the comparison for predictions or measured data is to be made between internal ground-borne noise and internal airborne noise levels. Where mechanical ventilation complying with the BCA is provided, windows may be considered closed. Where mechanical ventilation is not provided windows should be open to limits recommended by the BCA.	To be completed	To be completed	To be completed
Part E CoA E31	Baseline ground-borne noise monitoring must be completed before the commencement of construction where ground-borne noise is predicted to exceed the trigger level for Ground borne noise in the Rail Infrastructure Noise Guideline.	To be completed	To be completed	To be completed
Part E CoA E32	The Proponent must prepare an Operational Noise and Vibration Review (ONVR) to confirm noise and vibration control measures that would be implemented for the operation of the CSSI. The ONVR must be prepared as an iterative design development and in consultation with relevant council(s) and other relevant stakeholders and must: (a) confirm the appropriate operational noise and vibration objectives and levels for surrounding development, including existing sensitive land uses; (b) confirm the operational noise predictions (including ground-borne noise) based on the final	To be completed	To be completed	To be completed

	design. Confirmation must be based on an appropriately calibrated noise model (which has incorporated data obtained from noise monitoring and traffic counts where necessary for calibration purposes).; (c) confirm the operational noise and vibration impacts at sensitive receivers based on the final design of the CSSI, including operational daytime LAeq,15 hour and night-time LAeq, 9 hour traffic noise contours; (d) examine all noise and vibration mitigation measures that could be applied to address the impacts identified in (c), with a focus on source control and design; (e) identify specific physical and other mitigation measures that will be installed for controlling noise and vibration impacts at the source and at the receiver (if relevant) including location, type and timing of their installation; (f) where noise and vibration objectives cannot be achieved, the ONVR must present an analysis of all noise and vibration mitigation measures, the 'best practice' achievable noise and vibration outcome and justification for the measure decided upon based upon the analysis; (g) fully describe the design, assumptions, calculation process, mitigation strategy, and other relevant factors (including the procedures in place to ensure trains do not stop within the Botany Rail Duplication and details of exceptions that may result in trains stopping). (h) include a consultation strategy to seek feedback from directly affected landowners on the noise and vibration mitigation measures; and			

	(i) procedures for the management of operational noise and vibration complaints. The ONVR must be verified by the AA. The ONVR must be prepared at the Proponent's expense and submitted to the Planning Secretary for approval before the implementation of mitigation measures. The ONVR must be made publicly available consistent with the requirements of The Proponent must prepare an Operational Noise and Vibration Review (ONVR) to confirm noise and vibration control measures that would be implemented for the operation of the CSSI. The ONVR must be prepared as an iterative design development and in consultation with relevant council(s) and other relevant stakeholders and must: (a) confirm the appropriate operational noise and vibration objectives and levels for surrounding development, including existing sensitive land uses; (b) confirm the operational noise predictions (including ground-borne noise) based on the final design. Confirmation must be based on an appropriately calibrated noise model (which has incorporated data obtained from noise monitoring and traffic counts where necessary for calibration purposes).; (c) confirm the operational noise and vibration impacts at sensitive receivers based on the final design of the CSSI, including operational daytime LAeq,15 hour and night-time LAeq, 9 hour traffic noise contours; (d) examine all noise and vibration mitigation measures that could be applied to address the impacts identified in (c), with a focus on source control and design; (e) identify specific physical and other mitigation measures that will be installed for controlling			

	noise and vibration impacts at the source and at the receiver (if relevant) including location, type and timing of their installation; (f) where noise and vibration objectives cannot be achieved, the ONVR must present an analysis of all noise and vibration mitigation measures, the 'best practice' achievable noise and vibration outcome and justification for the measure decided upon based upon the analysis; (g) fully describe the design, assumptions, calculation process, mitigation strategy, and other relevant factors (including the procedures in place to ensure trains do not stop within the Botany Rail Duplication and details of exceptions that may result in trains stopping). (h) include a consultation strategy to seek feedback from directly affected landowners on the noise and vibration mitigation measures; and (i) procedures for the management of operational noise and vibration complaints. The ONVR must be verified by the AA. The ONVR must be prepared at the Proponent's expense and submitted to the Planning Secretary for approval before the implementation of mitigation measures. The ONVR must be made publicly available consistent with the requirements of Condition B10. The Proponent must implement the identified noise and vibration control measures no later than 6 months after the commencement of construction, unless otherwise agreed with the Planning Secretary.			
Part E	Where operational noise mitigation measures (that also assist in reducing construction noise impacts) cannot be installed within six months of	To be completed	To be completed	To be completed

CoA E33	commencement of construction in accordance with Condition E32, the Proponent must submit to the Planning Secretary a report providing justification as to why. The report must include details of temporary measures that would be implemented to reduce construction noise impacts, until such time that the operational noise mitigation measures identified in Condition E32 are implemented. The report must be endorsed by the AA and submitted to the ER for approval within six (6) months of the commencement of construction which would affect the identified sensitive land uses.			
Part E CoA E34	Within 12 months of the commencement of operation of the CSSI, the Proponent must undertake monitoring of operational noise (including ground borne noise) to compare actual noise performance of the CSSI against the noise performance predicted in the review of noise mitigation measures required by Condition E32. The Proponent must prepare an Operational Noise Compliance Report to document this monitoring. The Report must include, but not necessarily be limited to: (a) airborne and ground-borne noise monitoring to assess compliance with the operational noise levels predicted in the review of operational noise mitigation measures required under Condition E32; (b) a review of the operational noise levels in terms of noise trigger levels established in the Rail Infrastructure Noise Guideline (EPA, 2013); (c) methodology, location and frequency of noise monitoring undertaken, including monitoring sites at which CSSI noise levels are ascertained, with specific reference to locations indicative of impacts on receivers; (d) details of any complaints and enquiries received in relation to operational noise generated by the CSSI between the date of commencement of operation and the date the report was prepared;	To be completed	To be completed	To be completed

	(e) any required recalibrations of the noise model taking into consideration factors such as noise monitoring and actual traffic numbers and proportions; (f) an assessment of the performance and effectiveness of applied noise mitigation measures together with a review and if necessary, reassessment of mitigation measures; and (g) identification of additional measures to those identified in the review of noise mitigation measures required by Condition E32, that are to be implemented with the objective of meeting the trigger levels outlined in the Rail Infrastructure Noise Guideline (EPA, 2013) and Noise Policy for Industry (EPA, 2017), when these measures are to be implemented and how their effectiveness is to be measured and reported to the Planning Secretary and the EPA. The Operational Noise Compliance Report must be submitted to the Planning Secretary and the EPA, following review by the AA and within 60 days of completing the operational noise monitoring and made publicly available.			
RMMs CNV1	Site EMPs will be prepared before any enabling works begin. Specific to the activities proposed, these plans will include: • identification of nearby sensitive receivers • description of works, construction equipment and hours of work • mitigation measures that apply to the works proposed • criteria for the project and relevant licence and approval conditions • requirements for noise and vibration monitoring • details of how community consultation will be completed in accordance with the community and stakeholder engagement plan • details of how respite will be applied where ongoing high impacts are seen at	To be completed	To be completed	To be completed

	certain receivers. The requirement for enabling works out of hours will be described in the site EMPs to be approved by the independent Environmental Representative (ER). The Site EMPs will detail: • the proposed activities and predict the potential noise impact against the relevant noise and vibration criteria • the relevant mitigation measures, including consideration of sleep disturbance and respite periods • the required community notification specific to the activities proposed.			
RMMs CNV2	A CNVMP will be prepared as a sub plan to the CEMP before any main construction works begin. This will include: • identification of nearby sensitive receivers • description of works, construction equipment and hours of work • criteria for the project and relevant licence and approval conditions • requirements for noise and vibration monitoring • details of how community consultation and notification will be completed • procedures for handling complaints • details on how respite will be applied where ongoing high impacts are seen at certain receivers. The CNVMP will also consider cumulative construction impacts and the likelihood for 'construction fatigue' from consecutive projects in the area and ongoing operation and maintenance activities in the rail corridor, and define a suitable management approach. Quantitative road traffic noise impacts from temporary detours during construction would also be evaluated, especially for local roads with low existing volumes. Ongoing operation and maintenance activities of the existing rail corridor during the period of construction will be managed through ARTC's existing environmental management system	To be completed	To be completed	To be completed
RMMs CNV3	Community consultation measures will be included in the CNVMP and community and stakeholder engagement plan, including periodic notification (monthly letterbox drop or equivalent) detailing all upcoming construction activities delivered	To be completed	To be completed	To be completed

	to impacted sensitive receivers at least 14 days prior to commencement of relevant works.			
RMMs CNV4	Unless subject to an Environment Protection License, an Out-of-Hours Work Protocol will be prepared and included as part of the CNVMP for main construction works. It will identify a process for the consideration, management and approval of works which are outside standard hours. The protocol will be prepared in consultation with the EPA and approved by the independent ER before the commencement of main construction works. The protocol will include processes for: • the consideration of out of hours work against the relevant noise and vibration criteria • the identification of mitigation measures for residual impacts, including respite periods in consultation with the community at affected locations • consideration of the risk of activities, proposed mitigation, management and coordination for works outside of standard hours to be approved by the independent ER	To be completed	To be completed	To be completed
RMMs CNV5	Where feasible and reasonable, construction will be carried out during Standard Construction Hours. If it is not possible to restrict the works to daytime, then they will be scheduled so noise intensive equipment is not used after 11:00 pm, where possible, noting that there is a requirement for many of the works to be completed during possessions, and restrictions on working hours during these periods are generally not feasible.	To be completed	To be completed	To be completed
RMMs CNV6	Where noise intensive equipment is to be used near sensitive receivers, the works will be scheduled for Standard Construction Hours, where possible. If it is not possible to restrict the works to daytime then they will be scheduled so noise intensive equipment is not used after 11:00 pm, where feasible	To be completed	To be completed	To be completed
RMMs CNV7	Monitoring will be carried out at the start of noise and vibration intensive activities which are near to receivers to confirm that actual levels are consistent with the predictions. Where mitigation measures have been specified, the monitoring results should confirm their effectiveness.	To be completed	To be completed	To be completed
RMMs CNV8	Hoardings, or other shielding structures, will be used where receivers are near compounds or worksites with long-term works. To provide effective noise mitigation, the hoarding will break the line of sight from the nearest receivers to the works, where possible, and be of solid construction with minimal gaps. Hoarding for construction sites is typically around three metres in height.	To be completed	To be completed	To be completed

RMMs CNV9	Noise generating activities in compounds will be positioned away from receivers where possible. Items such as sheds can also be used to shield receivers from noise generated in other parts of the compound	To be completed	To be completed	To be completed
RMMs CNV10	Noise impacts are predicted for the compound between Banksia Street and Stephen Road due to the proximity of the nearest receivers. The use of this compound site during out of hours works associated with the road closures at Robey Street and O'Riordan Street will be avoided as far as practicable.	To be completed	To be completed	To be completed
RMMs CNV11	Where works are required within the minimum working distances and considered likely to exceed the cosmetic damage criteria: • different construction methods with lower source vibration levels will be investigated and implemented, where feasible • attended vibration measurements will be undertaken at the start of the works to determine actual vibration levels at the item. Works will be ceased if the monitoring indicates vibration levels are likely to, or do, exceed the relevant criteria	To be completed	To be completed	To be completed
RMMs CNV12	Building condition surveys will be completed before and after the works where buildings or structures, including heritage items, are within the minimum working distances and considered likely to exceed the cosmetic damage criteria during the use of vibration intensive equipment. Appropriate criteria will be confirmed for each item before the works begin, based on the surveys	To be completed	To be completed	To be completed
RMMs CNV13	The potential human comfort impacts and requirement for vibration intensive works will be reviewed as the project progresses. Where receivers are within the human comfort minimum working distances, the impacts will be managed with the procedures defined in the CNVMP	To be completed	To be completed	To be completed
RMMs CNV14	The requirement for vibration intensive works near heritage items will be reviewed during detailed construction planning. Where heritage items are considered potentially sensitive to vibration impacts, the more stringent DIN 4150 Group 3 guideline values will be applied and monitoring will be completed when vibration intensive works are in close proximity. Condition surveys will be completed before and after the works where heritage items are within the minimum working distances and considered likely to exceed the cosmetic damage criteria.	To be completed	To be completed	To be completed
RMMs CNV15	The likelihood of cumulative or consecutive construction noise impacts will be reviewed during detailed design when detailed construction schedules are available. Coordination will occur between the various projects to minimise concurrent works (particularly concurrent out of hours work) in the same areas, where possible. Specific additional management and mitigation measures designed to address potential consecutive impacts will be developed and used to minimise the impacts as far as practicable, in consultation with the affected community	To be completed	To be completed	To be completed

RMMs CNV16	All employees, contractors and subcontractors will receive an environmental induction. The induction must at least include: • all relevant project specific and standard noise and vibration mitigation measures • relevant licence and approval conditions • permissible hours of work • any limitations on noise generating activities with special audible characteristics • location of nearest sensitive receivers • construction employee parking areas • designated loading/unloading areas and procedures • site opening/closing times (including deliveries) • environmental incident procedures	To be completed	To be completed	To be completed
RMMs CNV17	No swearing or unnecessary shouting or loud stereos/radios/phone calls on speaker on site. No dropping of materials from height, throwing of metal items and slamming of doors. No unnecessary idling of vehicles near to receivers.	To be completed	To be completed	To be completed
RMMs CNV18	Use quieter and less vibration emitting construction methods where feasible and reasonable. For example, when piling is required, bored pile rather than impact-driven piles will minimise noise and vibration impacts	To be completed	To be completed	To be completed
RMMs CNV19	Simultaneous operation of noisy plant within discernible range of a sensitive receiver will be avoided. The offset distance between noisy plant and adjacent sensitive receivers will be maximised. Plant used intermittently will be throttled down or shut down. Noise-emitting plant will be directed away from sensitive receivers, where possible.	To be completed	To be completed	To be completed
RMMs CNV20	Plan traffic flow, parking and loading/unloading areas to minimise reversing movements within the site	To be completed	To be completed	To be completed
RMMs CNV21	Non-tonal reversing beepers (or an equivalent mechanism) will be fitted and used on all construction vehicles and mobile plant regularly used on site as well as any out of hours work.	To be completed	To be completed	To be completed
RMMs CNV22	Loading and unloading of materials/deliveries will occur as far as possible from sensitive receivers. Site access points and roads will be selected as far as possible away from sensitive receivers. Dedicated loading/unloading areas will be shielded if close to sensitive receivers	To be completed	To be completed	To be completed
RMMs CNV23	Where possible, noise from mobile plant will be reduced through additional: • residential grade mufflers	To be completed	To be completed	To be completed

	• damped hammers such as 'City' Model Rammer Hammers • Air Parking brake engagement is silenced.			
RMMs CNV24	Stationary noise sources will be enclosed or shielded while ensuring that the occupational health and safety of workers is maintained. Appendix F of AS 2436: 1981 lists materials suitable for shielding	To be completed	To be completed	To be completed
RMMs CNV25	A CTTAMP will be prepared for the project to manage the haul routes and vehicle movements. Where construction routes are along local roads there is potential for impacts at the adjacent residential receivers, depending on the volume of construction traffic. The potential impacts will be managed using the following approaches: • vehicle movements will be away from sensitive receivers and during less sensitive times, where possible • the speed of vehicles will be limited and will avoid the use of engine compression brakes • on-site storage capacity will be maximised to reduce the need for truck movements during sensitive times • heavy vehicles will be restricted from idling near residential receivers	To be completed	To be completed	To be completed
RMMs CNV26	Structures, such as site sheds, will be used to shield residential receivers from noise (where practicable), noting that upper floors of multi-storey buildings will be unlikely to benefit.	To be completed	To be completed	To be completed
RMMs CNV27	The assessment indicates there is potential for noticeable increases in road traffic noise for some receivers along the detours routes, such as Robey Street. Detours using this road are planned for up to 10 weekends (for closures to either Robey Street or O'Riordan Street) during construction of the project. The potential impacts would be reviewed as the project progresses using detailed traffic volume data Where residential receivers are expected to be subject to a >2.0 dB nighttime increase during detours, the project would: • consider the use of different detour routes that do not put traffic during the nighttime on roads with low existing volumes. Where this is not possible, the project would: • apply appropriate mitigation measures to the affected residential receivers, as agreed with the independent Environmental Representative (ER), based on the expected magnitude of the exceedance and the total duration of night-time impacts from all detours during construction of the project	To be completed	To be completed	To be completed

Part E CoA E35	The Proponent must identify the utilities and services (hereafter “services”) potentially affected by Construction to determine requirements for diversion, protection and/or support. The Proponent, in consultation with service providers, must ensure that disruption to services resulting from the Construction is avoided where possible. Where unavoidable, customers must be advised in accordance with the Communication Strategy required under Condition B1.	To be completed	To be completed	To be completed
Part E CoA E36	Before commencement of any construction, a structural engineer must undertake condition surveys of buildings, structures, utilities and the like that are identified in the Noise and Vibration CEMP Sub-Plan as being at risk of damage due to construction vibration unless as otherwise instructed or agreed to by the pipeline or utility operator. The results of the surveys or agreement with the pipeline or utility operator must be documented in a Condition Survey Report for each item at risk of damage. Copies of Condition Survey Reports must be provided to the owners of the items surveyed, and no later than one month before the commencement of construction.	To be completed	To be completed	To be completed
Part E CoA E37	After completion of construction, condition surveys must be undertaken by a structural engineer of all items for which condition surveys were undertaken in accordance with Condition E36. The results of the surveys must be documented in a Condition Survey Report for each item surveyed. Copies of Condition Survey Reports must be provided to the landowners of the items surveyed no later than three (3) months following the completion of construction.	To be completed	To be completed	To be completed
Part E CoA E38	The Proponent, where liable, must rectify any property damage caused directly or indirectly (for example from vibration or groundwater change) by the construction or operation of the CSSI at no cost to the owner unless otherwise agreed with owner	To be completed	To be completed	To be completed
Part E CoA E39	Reinstated billboards must be reinstated like for like (the billboard must be no larger than existing and use the same technology) in the immediate vicinity of their current location.. Note: Any billboards to be reinstated in an alternative location may be subject to further assessment under the EP&A Act.	To be completed	To be completed	To be completed
RMMs CLP1	The removal, and reinstatement of billboards will be undertaken in consultation with land owners and billboard owners	To be completed	To be completed	To be completed
RMMs CLP2	As a priority, billboards will be replaced like for like. If replacement and relocation are not available, the affected parties will be appropriately compensated under the Land Acquisition (Just Terms Compensation) Act 1991.	To be completed	To be completed	To be completed
RMMs CLP3	Consultation will be carried throughout construction with the surrounding businesses, the local community and key stakeholders including Bayside Local Council, Sydney Airport and other potentially impacted stakeholders to advise them in advance of proposed works and any temporary access arrangements that may be required.	To be completed	To be completed	To be completed

RMMs CLP4	Prior to any impact on access, alternative arrangements will be negotiated with the affected parties in order to enable continued access and to minimise disruption as much as reasonably possible.	To be completed	To be completed	To be completed
RMMs CLP5	Affected property owners and businesses will be provided with advanced notification of relevant project schedules, construction works and changes to access arrangements.	To be completed	To be completed	To be completed
Part E CoA E47	Before any local 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 Council within three (3) weeks of completion of the survey and at least two weeks before the road is used by heavy vehicles associated with the construction of the CSSI.	To be completed	To be completed	To be completed
Part E CoA E48	The use of local roads must minimise impacts to local traffic, cyclists and pedestrians. Management measures must be incorporated in the Construction Transport, Traffic and Access Management Plan as relevant, and: (a) demonstrate that the use of local roads will not compromise the safety of the public; (b) describe the measures that will be implemented to avoid where practicable the use of local roads past schools, aged care facilities and childcare facilities during peak times for operation.	To be completed	To be completed	To be completed
Part E CoA E49	Closure and relocation of bus stops during construction must be undertaken in consultation with the relevant bus service providers and relevant council(s).	To be completed	To be completed	To be completed
Part E CoA E50	If damage to roads occurs as a result of construction of the CSSI, the Proponent must either (at the landowner's discretion): (a) compensate the relevant road authority for the damage so caused. The amount of compensation may be agreed with the relevant road authority, but compensation must be paid even if no agreement is reached; or (b) rectify the damage to restore the road to at least the condition it was in before work commenced as identified in the Road Dilapidation Report.	To be completed	To be completed	To be completed
Part E CoA E51	During work, all reasonably practicable measures must be implemented to maintain pedestrian, cyclist and vehicular access to, and parking in the vicinity of, businesses and affected properties. Where disruption cannot be avoided or minimised, alternative pedestrian, cyclist and vehicular access, and parking arrangements must be developed in consultation with affected businesses and implemented before the disruption. Adequate signage and directions to businesses must be provided before, and for the duration of, any disruption.	To be completed	To be completed	To be completed
Part E CoA E52	Access to all utilities and properties must be maintained during construction, where practicable, unless otherwise agreed with the relevant utility owner, landowner or occupier.	To be completed	To be completed	To be completed

Part E CoA E53	Any property access physically affected by the CSSI during construction must be reinstated to at least an equivalent standard, unless otherwise agreed by the landowner or occupier.	To be completed	To be completed	To be completed
Part E CoA E54	Safe pedestrian and cyclist access must be maintained around work sites during construction. In circumstances where pedestrian and cyclist access is restricted or removed due to construction, the relevant council(s) must be informed two weeks before any disruption, and alternate routes which comply with the relevant standards must be provided and signposted or controlled before, and for the duration of, any disruption.	To be completed	To be completed	To be completed
Part E CoA E55	The Proponent must take reasonable steps to coordinate construction traffic impacts with Proponents of other State Significant proposals near the CSSI and take reasonable steps to coordinate work to minimise cumulative traffic impacts in consultation with TfNSW and key Stakeholders.	To be completed	To be completed	To be completed
RMMs CTT1	Implementation of Construction Transport, Traffic and Access Management Plan (CTTAMP) for the main construction works. As a minimum, the CTTAMP will include: • identification of haulage routes • notification and consultation strategy with public and relevant authorities/stakeholders • special event and emergency services management • parking restrictions • protocol for monitoring cumulative traffic impact • Pre and post-construction surveys of local road pavement conditions to identify any potential damage caused by heavy vehicles, and processes for rectification (as appropriate) • Requirements for post-construction road safety audits. The CTTAMP will also consider cumulative construction impacts and define a suitable management approach. The CTTAMP will not be created for enabling	To be completed	To be completed	To be completed
RMMs CTT2	Provide suitably designed construction site access which will consider: • road design guidelines • visible temporary regulatory, warning and guide signs • use of accredited traffic controllers where appropriate • provision of deceleration lanes at accesses abutting highly trafficked roads	To be completed	To be completed	To be completed
RMMs CTT3	• Administrative controls to limit truck activities during peak periods.	To be completed	To be completed	To be completed

	• Implement radio communication and designated truck idling areas to minimise impact of truck queuing on public roads. • Temporary traffic controls.			
RMMs CTT4	• Maximise parking at each site and compound. • Encourage carpooling/cycling/public transport. • Providing shuttle buses between off-site parking locations. • Providing shuttle buses between the two main on-site compounds and smaller construction compounds. • Develop a protocol to review the approach to management of worker parking in the event complaints are received relating to workers using on-street parking	To be completed	To be completed	To be completed
RMMs CTT5	•Consultation with service providers to develop alternative service arrangements. • Notification to the general public prior to implementation of service changes. • Changes to services during possessions.	To be completed	To be completed	To be completed
RMMs CTT6	•Ensure appropriate detours such as maintaining access on at-least one side of the road. • Provide safe access across site gates	To be completed	To be completed	To be completed
RMMs CTT7	• Manage closures during off-peak periods. • In accordance with the relevant protocols (for example for Road Opening Licences), consult with Transport for NSW, Traffic Management Centre and the Sydney Coordination Office, regarding the management and timing of any proposed temporary road closures. • Select a bus detour route that will minimise impact on punctuality of bus services and minimise public transport accessibility impact on the community. • Temporary turn restrictions at key State controlled intersections to promote the diversion route via State controlled roads would also be considered during detailed design. • Implement suitable traffic management during closures to manage and guide motorists at the approaches and through or around the work sites. • Public information campaigns. • Truck travel time management	To be completed	To be completed	To be completed
Part E CoA E57	The CSSI must be constructed in a manner that minimises visual impacts of construction sites, including light spill.	To be completed	To be completed	To be completed

Part E CoA E58	The Proponent must construct and operate the CSSI with the objective of minimising the impact of light spill to surrounding properties and aircraft operations.	To be completed	To be completed	To be completed
Part E CoA E59	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 and relevant Australian Standards in the series AS/NZ 1158 – Lighting for Roads and Public Spaces and NASF Guideline E: Managing the Risk of Distractions to Pilots from Lighting in the Vicinity of Airports. Additionally, the Proponent must manage residual night lighting impacts to protect properties adjoining or adjacent to the CSSI, in consultation with affected landowners.	To be completed	To be completed	To be completed
RMMs CLV1	Shade cloth screening on site boundary fencing will be provided where works or compound sites are being undertaken in close proximity to residential areas to screen street level views into the construction site, such as: • Myrtle Street • Bay Street • Ellis Street • Banksia to Morgan Street	To be completed	To be completed	To be completed
RMMs CLV2	Temporary lighting required during the construction period will be sited and designed to avoid light spill into residential properties. Particular consideration will be given to works near Baxter Road, McBurney Avenue and between Myrtle Street and Stephen Road which are located close to residential properties and hotels.	To be completed	To be completed	To be completed
RMMs CLV3	Where landscaping is impacted outside the rail corridor during construction, opportunities for reinstatement will be identified (where possible) in consultation with affected property owners to minimise visual impacts.	To be completed	To be completed	To be completed
RMMs CHS1	The site EMPs will include a section specific to utility management and utility protection.	To be completed	To be completed	To be completed
RMMs CHS2	Construction-related risks related to public safety from general construction activities (listed in section 21.3.1) will be incorporated into the relevant management plans with measures to minimise and manage risks	To be completed	To be completed	To be completed
RMMs CHS3	The management of all chemicals and detonators used during construction will comply with the relevant Australian Standard.	To be completed	To be completed	To be completed
RMMs CHS4	The relevant management plan will include a review of the required dangerous goods quantities to be used and stored during construction to validate Applying SEPP 33 (DoP 2011a) screening assessment. If the Applying SEPP 33 (DoP	To be completed	To be completed	To be completed

	2011a) thresholds levels are not exceeded, no further work is needed. If the Applying SEPP 33 (DoP 2011a) thresholds are exceeded, a preliminary hazard analysis will be completed and provided to the DPE for reference			
RMMs CHS5	Management plans will be developed and implemented for the project to ensure that the necessary approvals are sought, particularly for the use of cranes. Use of cranes will comply with National Airports Safeguarding Framework Guideline F (DIRDC, n.d.) Where necessary, use of cranes that will infringe the obstacle limitation surface will be limited to curfew hours and/or permits obtained from Sydney Airport.	To be completed	To be completed	To be completed
RMMs CHS6	Management plans will be developed and implemented for the project to ensure the lights proposed for use comply with CASA Manual of Standards 139 section 9.21 and National Airports Safeguarding Framework Guideline E (DIRDC, n.d.).	To be completed	To be completed	To be completed
RMMs CHS7	Management plans will include measures to minimise waste attracting wildlife, particularly birdlife. These will include, but not be limited to: • food waste being stored in covered bin • waste being regularly removed from site.	To be completed	To be completed	To be completed
Part E CoA E61	Waste generated during construction and operation must be dealt with in accordance with the following priorities: (a) waste generation must be avoided and where avoidance is not reasonably practicable, waste generation must be reduced; (b) where avoiding or reducing waste is not possible, waste must be re-used, recycled, or recovered; and (c) where re-using, recycling or recovering waste is not possible, waste must 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.	To be completed	To be completed	To be completed
Part E CoA E62	All waste must be classified in accordance with the EPA's Waste Classification Guidelines, with appropriate records and disposal dockets retained for audit purposes	To be completed	To be completed	To be completed
RMMs CRW1	Where feasible and practicable, construction material will be sourced from within the Sydney region.	To be completed	To be completed	To be completed
RMMs CRW2	Site EMPs will be prepared before any enabling works begin. The Site EMPs will detail how waste will be managed during enabling works activities that could generate significant waste e.g. billboard removal and vegetation clearance. The Site EMPs will include: • all key early and enabling works waste streams • classification of waste streams in accordance with the Waste Classification Guidelines (EPA, 2014a)	To be completed	To be completed	To be completed

	• applicable resource recovery orders and exemptions including the existing 'The Australian Rail Track Corporation excavated material order 2019' and 'The Australian Rail Track Corporation excavated material exemption 2019' • waste identification, handling and segregation procedures • proposed waste reuse, recovery and recycling and disposal measures • waste tracking, record keeping and reporting requirements • key sources of construction related resource use • energy conservation and energy efficiency practices to be implemented			
RMMs CRW3	The CEMP will consider management of all construction waste including spoil in accordance with the waste management hierarchy. The CEMP will include: • all key construction waste streams • classification of waste streams in accordance with the Waste Classification Guidelines (EPA, 2014a) • applicable resource recovery orders and exemptions including the existing 'The Australian Rail Track Corporation excavated material order 2019' and 'The Australian Rail Track Corporation excavated material exemption 2019' • waste identification, handling and segregation procedures • spoil disposal locations, onsite spoil management and offsite transport protocols • proposed waste reuse, recovery and recycling and disposal measures • waste tracking, record keeping and reporting requirements • key sources of construction related resource use • energy conservation and energy efficiency practices to be implemented	To be completed	To be completed	To be completed
RMMs CRW4	Construction waste will be minimised by accurately calculating materials brought to the site and limiting materials packaging.	To be completed	To be completed	To be completed
RMMs CRW5	All waste will be assessed, classified, managed and disposed of in accordance with the Waste Classification Guidelines (EPA, 2014a)	To be completed	To be completed	To be completed
RMMs CRW6	The size of stockpiles will be determined by material quantity requirements, space availability, stockpile stability and safety, indicative volumes and restrictions. Stockpile siting and management will include the following parameters: • will be no higher than three metres • will be sited as far as practical from sensitive receivers and where possible equipment i.e. site compound buildings, sited between the stockpile and receiver	To be completed	To be completed	To be completed

	• will be located in areas which are not subject to frequent inundation by floodwater and ideally outside the 1% AEP flood extent • will not be sited next to schools or day care facilities • will be temporary and material not needed for ongoing maintenance will be removed at completion of construction			

Appendix M: Pre-Clearing Inspection Checklist

Project: Ecology Ref:	**Ecologist Pre-Clearing**	BOTANY RAIL DUPLICATION ARTC JOHN HOLLAND

Planned Clearing Start Date	
Expected Clearing Completion Date	

VEGETATION CLEARING LOCATIONS

GPS Coordinates		Location	Comments

Has the vegetation to be cleared been clearly delineated using appropriate flagging?	Yes ☐	No ☐	
All exclusion zones identified, signed and marked?	Yes ☐	No ☐	
Have habitat trees been identified and appropriately marked?	Yes ☐	No ☐	N/A ☐
Is there risk of weed infestation or spread?	Yes ☐	No ☐	
Were any animals observed? (Report in comments)	Yes ☐	No ☐	
Are any active nests present? (Report in comments)	Yes ☐	No ☐	
If soil disturbance is to occur, have ERSED controls been installed?	Yes ☐	No ☐	
Are the proposed works covered by an existing Approval?	Yes ☐	No ☐	

If yes, note permit number; _____ **expiry date** _____ **and attach a copy**

Have relevant workers been shown limit of clearing, advised of fauna handling procedures and any other SHE controls?	Yes ☐ No ☐

Comments

Inspection completed by: **Date:**

Signature/Role

Approval by Environmental Representative/Advisor: **Date:**

Signature/Role

Project: Ecology Ref:	**Ecologist Post-Clearing**	BOTANY RAIL DUPLICATION ARTC JOHN HOLLAND

Planned Clearing Start Date	
Expected Clearing Completion Date	

VEGETATION CLEARING LOCATIONS

GPS Coordinates		Location	Comments

Was all clearing within the vegetation clearing limits?	Yes ☐	No ☐	
Were any trees marked as 'to be retained' impacted by the works?	Yes ☐	No ☐	
Were any habitat trees impacted by the clearing works?	Yes ☐	No ☐	N/A ☐
Were any fauna, nests or other fauna features impacted by the clearing works?	Yes ☐	No ☐	N/A ☐
Were any animals injured or killed as a result of the clearing works?	Yes ☐	No ☐	
Were weeds appropriately removed and stored as contaminated green waste?	Yes ☐	No ☐	

Comments:

Inspection completed by: **Date:**

Signature/Role

Approval by Environmental Representative/Advisor: **Date:**

Signature/Role

Project: Revision	**Pre-Clearing Inspection Checklist**	BOTANY RAIL DUPLICATION ARTC JOHN HOLLAND

Works:	Worksite:	Date:

Assessment Process	Yes	No
Step 1: Has the Pre-Clearing Survey been done undertaken by the project ecologist?	If yes, proceed to Step 2	**HOLD POINT** If No, notify Project Environment Manager to arrange Pre-clearing Survey
Step 2: Are the trees part of the vegetation assessed in the REF?	If Yes, proceed to Step A1	**HOLD POINT** If No, notify Environment Manager to: 1. Undertake additional assessment (if required) 2. Obtain any necessary approvals

#	Control Measures	Yes	No	N/A	Comments/Corrective Action
A1	Has approval from JH Environment Manager been sought?				
A2	Has all vegetation to be trimmed/ removed within been clearly marked?				
A3	Is an appropriately qualified subcontractor to be used for the required trimming/clearing?				
B1	Have the limits of clearing and any retained vegetation been clearly delineated?				
B2	Are erosion and sediment control devices required? If so, has an Erosion and Sediment Control Plan been prepared and implemented?				
B3	Has a toolbox talk or Pre-start Meeting discussed/outlined the limit of clearing?				
B4	Has any fauna identified been appropriately relocated with assistance from a qualified ecologist or WIRES (where required)?				
B5	Is an ecologist present on site for the clearing works?				
B6	Has weed eradication been completed?				
B7	Where required, have herbicides been applied to control weeds?				

Project: Revision	Pre-Clearing Inspection Checklist	BOTANY RAIL DUPLICATION ARTC JOHN HOLLAND

Completed By:

Name: *Site Supervisor*	Signature:	Date:
Name: *Sub-contractor Site Supervisor*	Signature:	Date:
Name: *Project Environment Manager or delegate*	Signature:	Date: