Construction Environmental Management Plan

CABRAMATTA LOOP PROJECT

Doc ID: CL-CEMP Revision No: 6 Published: 20/12/2023

ACKNOWLEDGEMENT TO COUNTRY

Fulton Hogan acknowledges the Cabrogal of the Darug Nation People as the Traditional Owners of the land we are working on, and pay our respect to their Elders past, present and emerging.

We recognise their deep connection to Country and value the contribution to caring for, and managing the land and water.

We are committed to pursuing genuine and lasting partnerships with Traditional Owners to understand their culture and connections to Country in the way we plan for and carry out the delivery of the Works.

Fulton Hogan

Document control

This is an e-copy of the Plan and it interfaces with the other associated plans, which together describe the proposed overall project management system for the project.

The latest revision of this plan is available on the Fulton Hogan server. If any unsigned hard copies of this document are printed, they are valid only on the day of printing.

The revision number is included at the bottom of each page. When revisions occur, the entire document will be issued with the revision number updated accordingly for each owner of a controlled copy.

Attachments/Appendices to this plan are revised independently of this plan.

Revision History

REV	DATE	AUTHOR / REVISED BY	ENDORSED BY	BRIEF DESCRIPTION OF CHANGE
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
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Contacts

Position	Name	Phone
Environmental Manager*	Shannon Chisholm / Jacob Cooper	[redacted]
Project Director	Peter George	[redacted]
Construction Manager	Scott Bryce	[redacted]
Eastern Region Operations Manager – Construction	Chris Bryce	[redacted]
Eastern Region Environmental and Sustainability Manager - Construction,	Scott Hocking	[redacted]
Fairfield City Council	NA	(02) 9722 0222 Monday to Friday 8.30am - 4.30pm. (02) 9722 0222 After Hours Assistance
Liverpool City Council	NA	1300 36 2170 Monday to Friday 8.30am – 5.00pm. 1300 36 2170 After Hours Assistance
Fire and Rescue NSW	NA	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)
EPA pollution hotline	NA	131 555
SafeWork NSW	NA	131 050
The Ministry of Health	Sydney Local Health District	(02) 9515 9600
WIRES Wildlife Rescue	NA	1300 094 737

*To be contactable by EPA and/or other government agencies on a 24-hour basis.

Glossary/ Abbreviations

Term/ abbreviation	Definition
Construction ancillary facility	Has the same meaning as the definition of the term in the Project approval: A temporary facility for construction of the CSSI including an office and amenities compound, construction compound, material crushing and screening plant, materials storage compound, maintenance workshop, testing laboratory and material stockpile area.
ARTC	Australian Rail Track Corporation
CALD	Culturally and Linguistically Diverse
CEMP	Construction Environmental Management Plan
CoA	The Minister's conditions of approval for the CSSI.
Construction Boundary	Has the same meaning as the definition of the term in the Project approval: The area required for project construction as described in the documents listed in **Condition A1**.
CSSI	Critical State Significant Infrastructure, as described in Schedule 1 of the project approval, the carrying out of which is approved under the terms of the project approval.
DPI	NSW Department of Primary Industries
DPIE	NSW Department of Planning, Industry and Environment
DPIE EES Group	Environment, Energy and Science Group of DPIE
DPIE Water Group	Water Group of DPIE and the National Resources Access Regulator
DPE	NSW Department of Planning and Environment
Ecologically sustainable development	Using, conserving and enhancing the community's resources so that the ecological processes on which life depends are maintained and the total quality of life now and in the future, can be increased (Council of Australian Governments, 1992).
EIS	Environmental Impact Statement
EPA	NSW Environment Protection Authority
EMS	Environmental Management System
Environmental aspect	Defined by AS/NZS ISO 14001 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 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. An environmental incident does not include asbestos finds these are deemed as an Health and Safety incident.
Environmental objective	Defined by AS/NZS ISO 14001 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 as a detailed performance requirement, applicable to the organisation or parts thereof, that arises from the

Term/ abbreviation	Definition
	environmental objectives and that needs to be set and met in order to achieve those objectives.
EP&A Act	*Environmental Planning and Assessment Act 1979*
EPL	Environment Protection Licence under the POEO Act
ER	Environmental Representative for the CSSI
Environmental Representative Protocol	Has the same meaning as the definition of the term in the Project approval: The document of the same title published by DPIE dated October 2018.
ESCP	Primary Erosion and Sediment Control Plan
EWMS	Environmental Work Method Statement
HP	Hold Point: a point in the construction or verification process beyond which work may not proceed without receiving authorisation from the appropriate party.
Independent Audit PAR	Has the same meaning as the definition of the term in the Project approval: Independent Audit Post Approval Requirements (DPIE, May 2020)
LOTE	Language other than English
Major Construction Ancillary Facility	Has the same meaning as the definition of the term in the Project approval: A construction ancillary facility not being a minor construction ancillary facility.
Minister, the	NSW Minister for Planning and Public Spaces
NA	Not applicable
Non-compliance	Failure to comply with the requirements of the Project Approval or any applicable license, permit or legal requirements.
Non-conformance	Failure to conform to the requirements of project system documentation including this PCEMP or supporting documentation.
OEH	Office of Environment and Heritage
PESCP	Progressive Erosion and Sediment Control Plans
Planning Secretary, the	Has the same meaning as the definition of the term in the Project approval: Planning Secretary of DPIE (or nominee, whether nominated before or after the date on which the project approval was granted)
Planning Secretary's approval or agreement, the	Has the same meaning as the definition of the term in the Project approval: A written approval or agreement from the Planning Secretary (or nominee)
POEO Act	*Protection of the Environment Operations Act 1997* (NSW)
Project, the	Cabramatta Loop
Project approval, the	The Minister's approval for the CSSI.
Publicly Available	Has the same meaning as the definition of the term in the Project approval: To be made available on the website required under Condition B10 of the project approval.
Relevant council(s)	Has the same meaning as the definition of the term in the Project approval:

Term/ abbreviation	Definition
	Any or all as relevant, Fairfield City Council or Liverpool City Council.
RMM	Revised Mitigation Measure
TfNSW	Transport for NSW
Work	Has the same meaning as the definition of the term in the Project approval: Any physical work for the purpose of the CSSI including construction and low impact work.

1. Introduction

1.1. Background

The Australian and NSW governments have identified clear objectives to increase the share of freight moved by rail – from 17.5 per cent in 2016 to 28 per cent by 2021 (Submissions Report p1.1).

Over the next 20 years, container rail freight volumes on Sydney's rail freight network are predicted to increase substantially. The major drivers of this increase will be population growth, economic growth (resulting in increases in freight movements over and above the rate of population growth) and growth in global community demand. This will put pressure on existing rail infrastructure, which includes the Southern Sydney Freight Line (SSFL) (Submissions Report p1.1).

In May 2018, the Prime Minister announced the Australian Government's commitment of $400 million to the Port Botany Rail Line Duplication Project and the Cabramatta Loop Project. These projects aim to achieve the Government's objective of increasing the share of freight moved by rail (Submissions Report p1.1).

ARTC proposes to construct and operate a passing loop for up to 1,300 length trains on the SSFL, which would allow freight trains travelling in opposite directions to pass and provide additional rail freight capacity along the SSFL (Submissions Report p1.1). The project is referred to as the Cabramatta Loop Project.

The project has been assessed under Division 5.2 (State significant infrastructure) of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act). The Department of Planning, Industry and Environment (formerly known as the Department of Planning and Environment) placed the 'Cabramatta Loop Project Environmental Impact Statement' (ARTC, 15 August 2019) (EIS) on public exhibition from Friday 30 August 2019 until Thursday 26 September 2019 (28 days). Submissions received during the exhibition were responded to in the 'Cabramatta Loop Project Submissions Report' (ARTC, February 2020) (Submissions Report).

The project is State Significant Infrastructure (SSI) and was declared Critical State Significant Infrastructure (CSSI) on 15 May 2020. The Minister for Planning and Public Spaces granted approval of the CSSI on 28 July 2020.

1.2. Purpose

In accordance with the requirements of CoA C1, this Construction Environmental Management Plan (CEMP) has been prepared to detail how Fulton Hogan will comply with the project approval, and implement and achieve the performance outcomes, commitments and mitigation measures specified in the EIS as amended by the Submissions Report (also known as 'Revised Mitigation Measures' (RMM)) during construction of the project. The project must be carried out generally in accordance with the description of the project in the EIS as amended by the Submissions Report.

Additionally, this CEMP has been prepared to address the requirements of ARTC Technical Specification and Works Description (TSWD) Appendix 04 Additional Environmental Requirements and Environment Protection Licence (EPL) Number 3142 (held by ARTC for railway activities – railway infrastructure operations), to the extent that it applies to Fulton Hogan's activities.

This CEMP has been prepared having regard to the:

- AS/NZS ISO 14001 'Environmental management systems – Specification with guidance for use'
- Environmental Management Plan Guidelines: Guidelines for Infrastructure Projects (DPIE, April 2020).

The requirements of the project approval specifically related to the CEMP and where they are met in this CEMP are set out in Table 1.

For the avoidance of doubt, this CEMP relates to the construction phase only. Detailed design environmental requirements will be addressed as part of the detailed design phase, separate to the CEMP approvals process. Detailed design is generally completed about six months after CEMP approval. In addition, operational environmental requirements will be met during the operational phase (upon the completion of construction) and addressed in the Operational Environmental Management System required under CoA D1.

Table 1: CoA Requirements Specifically Related to this CEMP

CoA	Requirement	Reference
CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN		
C1	A **Construction Environmental Management Plan (CEMP)** must be prepared by having regard to the *Environmental Management Plan Guideline – Guideline for Infrastructure Projects* (DPIE, 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 CEMP Section 1.2, first paragraph Section 3.6 Relevant CEMP Sub-Plan(s)
C2	The **CEMP** must provide: (a) a description of activities to be undertaken during construction (including the scheduling of construction);	Section 2.1 Section 2.3 Section 2.4
	(b) details of environmental policies, guidelines and principles to be followed in the construction of the CSSI;	Section 3.3 Section 3.4 Section 3.5 Section 3.6
	(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 3.2
	(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 3.2-3.7 Appendix A1 Appendix B1-B8 (CEMP Sub-Plans)
	(e) an inspection program detailing the activities to be inspected and frequency of inspections;	Section 8.1
	(f) a protocol for managing and reporting any: (i) incidents; and (ii) non-compliances with this approval or statutory requirements;	Chapter 7 Section 8.3 Chapter 10
	(g) procedures for rectifying any non-compliance with this approval identified during compliance auditing, incident management or at any time during construction;	Chapter 10
	(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 3.1.1 It is noted that staged construction is not proposed as detailed in Section 2.2.

<table>
<tr><th>CoA</th><th>Requirement</th><th>Reference</th></tr>
<tr><td></td><td>(i) a description of the roles and environmental responsibilities for relevant roles and their relationship with the ER;</td><td>Section 4.1</td></tr>
<tr><td></td><td>(j) for training and induction for employees, including contractors and sub-contractors, in relation to environmental and compliance obligations under the terms of this approval;</td><td>Chapter 5</td></tr>
<tr><td></td><td>(k) for periodic review and update of the CEMP and all associated plans and programs; and</td><td>Section 1.6</td></tr>
<tr><td></td><td>(l) the Unexpected Heritage Finds and Human Remains Procedure required under Condition E5.</td><td>HMP</td></tr>
<tr><td>C3</td><td>The 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.</td><td>Section 1.4
It is noted that staged construction is not proposed as detailed in Section 2.2.</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 government agency(ies) and council(s) to be consulted for each CEMP Sub-Plan</th></tr><tr><td>(a)</td><td>Traffic and Transport</td><td>TfNSW and relevant council(s)</td></tr><tr><td>(b)</td><td>Noise and Vibration</td><td>Relevant council(s)</td></tr><tr><td>(c)</td><td>Soil and Water</td><td>DPIE Water Group, Sydney Water and relevant council(s)</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 1.3</td></tr>
<tr><td>C5</td><td>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.</td><td>Appendix B1-B8 (CEMP Sub-Plans)</td></tr>
<tr><td>C6</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 1.3</td></tr>
<tr><td>C7</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 1.4
It is noted that staged construction is not proposed as detailed in Section 2.2.</td></tr>
<tr><td colspan="3">CONSTRUCTION MONITORING PROGRAMS</td></tr>
<tr><td>C8</td><td>The Construction Monitoring Programs set out in Table 4 must be prepared and implemented to enable comparison of the actual construction performance</td><td>In accordance with CoA C13, the relevant</td></tr>
</table>

<table>
<tr><th>CoA</th><th>Requirement</th><th>Reference</th></tr>
<tr><td></td><td>against the predicted performance. The Construction Monitoring Programs must be prepared in consultation with the relevant government agencies as identified for each Construction Monitoring Program.
Table 4: Construction Monitoring and relevant public authorities<table><tr><th></th><th>Required Construction Monitoring Programs</th><th>Relevant government agencies to be consulted for each Construction Monitoring Program</th></tr><tr><td>(a)</td><td>Noise and Vibration</td><td>EPA</td></tr><tr><td>(b)</td><td>Water Quality</td><td>DPIE Water Group</td></tr></table></td><td>Construction Monitoring Program has been incorporated into that CEMP Sub-Plan as follows:
For (a) Noise and Vibration refer to Appendix B2
For (b) Water Quality refer to Appendix B3</td></tr>
<tr><td>C9</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>Refer to the relevant CEMP Sub-Plan as above.</td></tr>
<tr><td>C10</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>Section 1.4</td></tr>
<tr><td>C11</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>Section 1.4
Appendix B2
Appendix B3</td></tr>
<tr><td>C12</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 specific by the Planning Secretary, whichever is the greater.</td><td>Section 1.4</td></tr>
<tr><td>C13</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>Chapter 9 Table 5, Item No. 4.
The relevant Construction Monitoring Program has been incorporated into that CEMP Sub-Plan as follows:
For (a) Noise and Vibration, refer to Appendix B2 Section 9.6</td></tr>
</table>

CoA	Requirement	Reference
		For (b) Water Quality, refer to Appendix B3 Section 7.6

1.3. Consultation for Preparation of this CEMP

In accordance with the requirements of CoA C4, CoA C8, CoA E16, RMM C1.1, RMM C6.1 and RMM C6.6, the CEMP Sub-Plans and Construction Monitoring Programs have been prepared in consultation with the relevant government agency(ies) and council(s) identified in each Sub-Plan, including:

- TfNSW (for the TTMP)
- Fairfield City Council (for the TTMP, NVMP, FMP and SWMP)
- Liverpool City Council (for the TTMP, NVMP, FMP and SWMP)
- DPIE Water Group (FMP and SWMP)
- Sydney Water (FMP and SWMP)
- Environment Protection Authority (EPA) (NVMP, FMP and SWMP)
- NSW SES (FMP and TTMP)
- Public transport/ bus operators (TTMP)

A summary of the key issues raised by the relevant government agency(ies) and council(s) is included in Section 1.4 of the relevant Sub–Plan.

In accordance with the requirements of CoA A5, evidence of the consultation undertaken during preparation of the CEMP, including copies of all correspondence, is provided in Appendix A5.

Consultation will continue throughout the construction phase of the Project with the relevant government agency(ies) and council(s) in accordance with the Communication Strategy (CS).

1.4. CEMP Approval

Submission of the CEMP (including CEMP Sub-Plans) to the ER for approval is required 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 (refer CoA C3).

In accordance with the requirements of CoA C7, this CEMP (including CEMP Sub-Plans) must be approved by the ER prior to commencement of construction and implemented for the duration of construction.

It is noted that the Construction Monitoring Programs required under CoA C8 have been incorporated into the relevant CEMP Sub-Plans as permitted by CoA C13. Therefore, ER approval of the CEMP (including Sub-Plans) also constitutes ER approval of the Construction Monitoring Programs.

In accordance with the requirements of CoA C12, the Construction Monitoring Programs, as approved by the ER will be implemented for the duration of construction and for any longer period set out in the monitoring program or specific by the Planning Secretary, whichever is the greater.

In accordance with ARTC TSWD Appendix 04, the CEMP and Sub-Plans will be submitted as required to the relevant government agencies and councils for consultation after consent is received from ARTC.

1.5. Distribution

This CEMP is available to all personnel and subcontractors via the project document control management system.

This CEMP will be made available for public inspection on request. Confidential information, which may include the location of threatened species, Aboriginal objects or places and personal contact details, will be removed from all documents provided or made available to the public. An electronic copy can be found on the Project website.

The document is uncontrolled when printed. One controlled hard copy of the CEMP and supporting documentation will be maintained by the Quality Manager at the Project office.

Registered copies will be distributed to:

- ARTC
- The ER
- The PV
- Project Director
- Environmental Manager, and
- Community Relations Manager.

1.6. Revision

A document review process is implemented to ensure that environmental documentation, including this CEMP and Sub-Plans, are updated as appropriate for the specific works occurring on site. Periodic review of the CEMP (including Sub-Plans) will be undertaken as a result of any of the following:

- The management review process described in Section 11.1
- When there is a change in the scope of the project that requires a change in environmental controls
- When there is a need to improve performance in an area of environmental impact
- At the completion of environmental audits as required, and
- As a result of changes in environmental legislation applicable and relevant to the project.

Following periodic review of the CEMP, should any issues or items within the CEMP need updating, it is the responsibility of the Environmental Manager or Environmental Coordinator to prepare the revised documents.

Revised versions of the CEMP will be made available through the distribution process described in Section 1.5.

1.7. Changes to the Project

Refinements to the project may result from detailed design refinement or changed circumstances throughout construction.

The Environmental Manager is responsible for incorporating any new environmental impact and/or new statutory approval requirements into the appropriate environmental management documentation.

Any design changes or changes in scope of works that may not be consistent with the approved project must be communicated to the Environmental Manager. The Environmental Manager or Environmental Coordinator will then consult with ARTC to determine if a consistency assessment is required. Discussions may provide adequate information without the need for preparation of a consistency assessment.

ARTC will approve all refinements that are deemed consistent with the approved project.

In accordance with the requirements of CoA A18(b), a copy of all consistency assessments will be provided to the ER for information before commencement of the subject work.

Should a consistency assessment determine that a proposed change is not consistent with the approved project (i.e. the impact is of a nature and scale that it is not considered consistent with the project approval), either a modification application or a new project application will be required if the decision is made to proceed with the proposed change. If a modification is required, both ARTC and the ER will be informed immediately and a modification application will be prepared and submitted to the Planning Secretary for determination. If a new project application is required, both ARTC and the ER will be informed immediately and next steps discussed between the parties.

2. Project Overview

2.1. Project Description

The project involves construction of a passing loop for up to 1,300m length trains on the SSFL, which would allow freight trains travelling in opposite directions to pass and provide additional rail freight capacity along the SSFL (Submissions Report p1.1).

The project would be partly located within the existing rail corridor between the Hume Highway and Cabramatta Road East road overbridges, in the suburbs of Warwick Farm and Cabramatta. In addition the project includes works in Broomfield Street and Jacquie Osmond Reserve, adjacent to the rail corridor (Submissions Report p1.1). The project is within the local government areas of Fairfield City Council (to the north) and Liverpool City Council (to the south). The location of the project is shown in Figure 1.

Key features of the project as described in the EIS as amended by the Submissions Report (p2.1) include:

- new rail track – providing a 1.65 kilometre long section of new track adjacent to the existing track, with connections to the existing track at the northern and southern ends
- track realignment – moving about 550 metres of existing track sideways (slewing) to make room for the new track
- bridge works – constructing two new bridge structures adjacent to the existing rail bridges over Sussex Street and Cabramatta Creek
- road works – reconfiguring Broomfield Street for a distance of about 680 metres between Sussex and Bridge streets.

Ancillary work would include communication, signalling and power upgrades, works to existing retaining and noise walls, drainage work and protecting/ relocating utilities. In addition, minor works in the form of new signalling would be installed at a number of locations within the rail corridor (Submissions Report, p2.1).

The key features of the Project are shown in Figure 2.

Figure 1: Location of the Project (EIS, p1.4)

Figure 2: Key Features of the Project (Submissions Report, p2.2)

2.2. Staging

The project is not proposed to be constructed or operated in stages in the context of CoA A9 – A12.

While individual construction activities will be programmed/ scheduled as outlined in Sections 2.3 and 2.4 respectively, the overall project will be delivered in one stage by one principal contractor, being Fulton Hogan. It will not be delivered in multiple stages by multiple principal contractors.

2.3. Indicative Program

Construction of the project is expected to start in early 2022. An indicative program is provided in Figure 3.

Activity	2021		2022				2023				2024			
	Quarter													
	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Site establishment	X	X												
Enabling works		X												
Adjustment of existing services			X	X										
Roadworks, pavement				X	X	X	X	X	X					
Retaining walls, noise walls					X	X	X	X	X					
Railway works, track works				X	X	X	X	X	X	X				
Signals, testing, commissioning			X	X	X	X	X	X	X	X	X			
Bridges			X	X	X	X	X							
Finishing works, demobilisation.					X				X	X	X			

Figure 3: Indicative Program of Construction Works

2.4. Indicative Schedule of Construction Activities

The indicative schedule of the various construction activities is provided in Table 2.

Table 2: Indicative Schedule of Construction Activities

Component	Typical activities
Site establishment	▪ Installation of initial environmental controls ▪ Establishment of construction site facilities and access ▪ Potholing and identification of services ▪ Surveys and geotechnical investigations ▪ Pre-condition surveys
Enabling Works	▪ Minor vegetation clearing and grubbing ▪ Installation of site sediment and erosion controls and pollution management measures ▪ Temporary works for signaling ▪ Demolition of grease trap
Adjustment of existing services	▪ Temporary diversion of water ▪ Adjustment / installation of utilities ▪ Excavation and protection of utilities
Roadworks	▪ Installation of environmental controls ▪ Demolition / removal of existing kerb and gutters ▪ Box out existing side path to widen road ▪ Excavation and protection of existing drainage pipes

Component	Typical activities
	▪ The construction and modifications to pipe drainage systems, such as the extension of drainage lines, the replacement of pipe drainage systems and the modification of stormwater drainage pits
Pavements	▪ Construction of pavement layers including, sub-surface drainage, sub-base and base layers, and surfacing ▪ Installation of kerb and gutter and planter boxes ▪ The reconstruction of concrete pavements, including the localised demolition of concrete pavements, cross stitching of pavement slabs and joint works ▪ Shared User Path ▪ Milling and re-sheeting of pavement
Retaining walls and noise walls	▪ Demolition of stormwater ▪ The construction of piling, concrete footings and walls ▪ Relocate noise walls and paint the panels
Signals, testing and Commissioning	▪ The temporary diversion of the Combined Services Route (CSR) ▪ The construction of signaling foundations ▪ Installing signaling equipment and furniture ▪ Upgrade of electrical system ▪ Installation of cables ▪ The testing and commissioning of new signal system
Railway works and track works	▪ Demolish existing retaining wall ▪ Foundation works and earthworks ▪ Installation of CSR conduits and track drainage ▪ The lower track formation of engineering fill ▪ The rail pavement layers including structural fill and capping ▪ Installation of track ▪ The construction of turnouts, slew track and resurfacing works
Bridges	▪ The construction of piling, substructure and superstructure ▪ The installation of walkways, ballast mat and waterproofing
Finishing works	▪ Vegetation and landscaping ▪ Installation of lighting and roadside furniture ▪ Line marking and raised pavement markers ▪ Restoration and landscaping of temporary sites ▪ Site clean-up and disposal of all surplus waste materials ▪ Decommission construction facilities. ▪ Reinstate Jacquie Osmond Reserve.

2.5. Construction Ancillary Facilities

Temporary ancillary facility sites are required to support construction of the project. A construction ancillary facility is defined in the project approval as:

'A temporary facility for construction of the CSSI including an office and amenities compound, construction compound, material crushing and screening plant, materials storage compound, maintenance workshop, testing laboratory and material stockpiles area.'

2.5.1. Construction Ancillary Facilities Identified by Description and Location in the EIS

Section 7.4.1 of the EIS (p7.23) identified three potential construction ancillary facilities by description and location as outlined in Table 3 and shown in Figure 4 and Figure 5.

Table 3: Construction Ancillary Facility Sites (EIS, p7.23)

Construction ancillary facility site	Location
C1	▪ Within rail corridor
C2	▪ Warwick Farm Recreation Reserve

Construction ancillary facility site	Location
C3	▪ Jacquie Osmond Reserve

The abovementioned three construction ancillary facilities have been previously identified and assessed in the EIS as amended by the Submissions Report; therefore, no further assessment of these sites is required. The use/ operation of each ancillary facility will be undertaken in accordance with the CEMP and relevant Sub-Plan(s).

At the time of initial submission of the CEMP, Fulton Hogan intends to only use construction ancillary facility site C3 located at Jacquie Osmond Reserve.

2.5.2. Construction Ancillary Facilities not Identified by Description and Location in the EIS

Prior to establishment and use of additional construction ancillary facility(ies) not previously identified in the EIS, the criteria contained in CoA A20(a) – (d) must be met.

The Construction Ancillary Facility Checklist contained in Appendix A4 will be used to record the assessment. The checklist will be included within a proposal submitted to the ER for approval of the proposed construction ancillary facility.

It is noted that CoA A20 does not apply to any ancillary facilities that are exempt or complying development.

2.5.3. Minor Construction Ancillary Facilities

In accordance with CoA A22, minor construction ancillary facilities include lunch sheds, office sheds, portable toilet facilities, material storage, parking and the like, and can be established and used where they satisfy the criteria set out in CoA A22(a) and (b). Fulton Hogan will provide an assessment of proposed minor construction ancillary facilities against CoA 22 to the ER for approval.

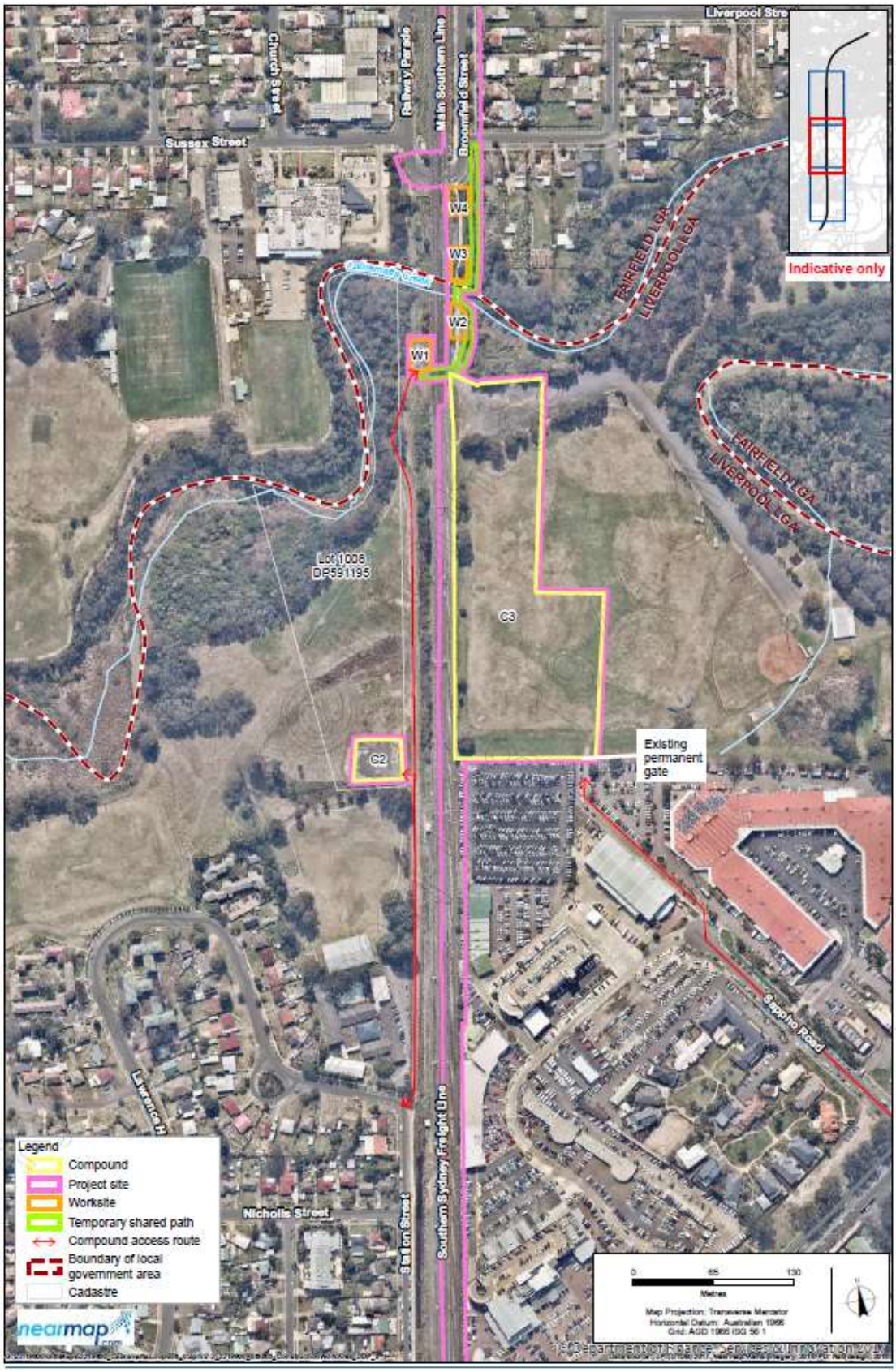


Figure 4: Potential Construction Ancillary Facility Sites C2 and C3 Identified in the EIS (p7.5)

Figure 5: Potential Construction Ancillary Facility Site C1 Identified in the EIS (p7.5)

3. Planning

3.1. Environmental Management Documentation

This CEMP is the overarching management plan for a suite of environmental management documents for the project as shown in Figure 6. Where CoA/RMM relate to detailed design, they are addressed in the Project Management Plan, Quality Management Plan and Design Plan(s). Compliance with those CoA /RMM are dealt with in those Plans.

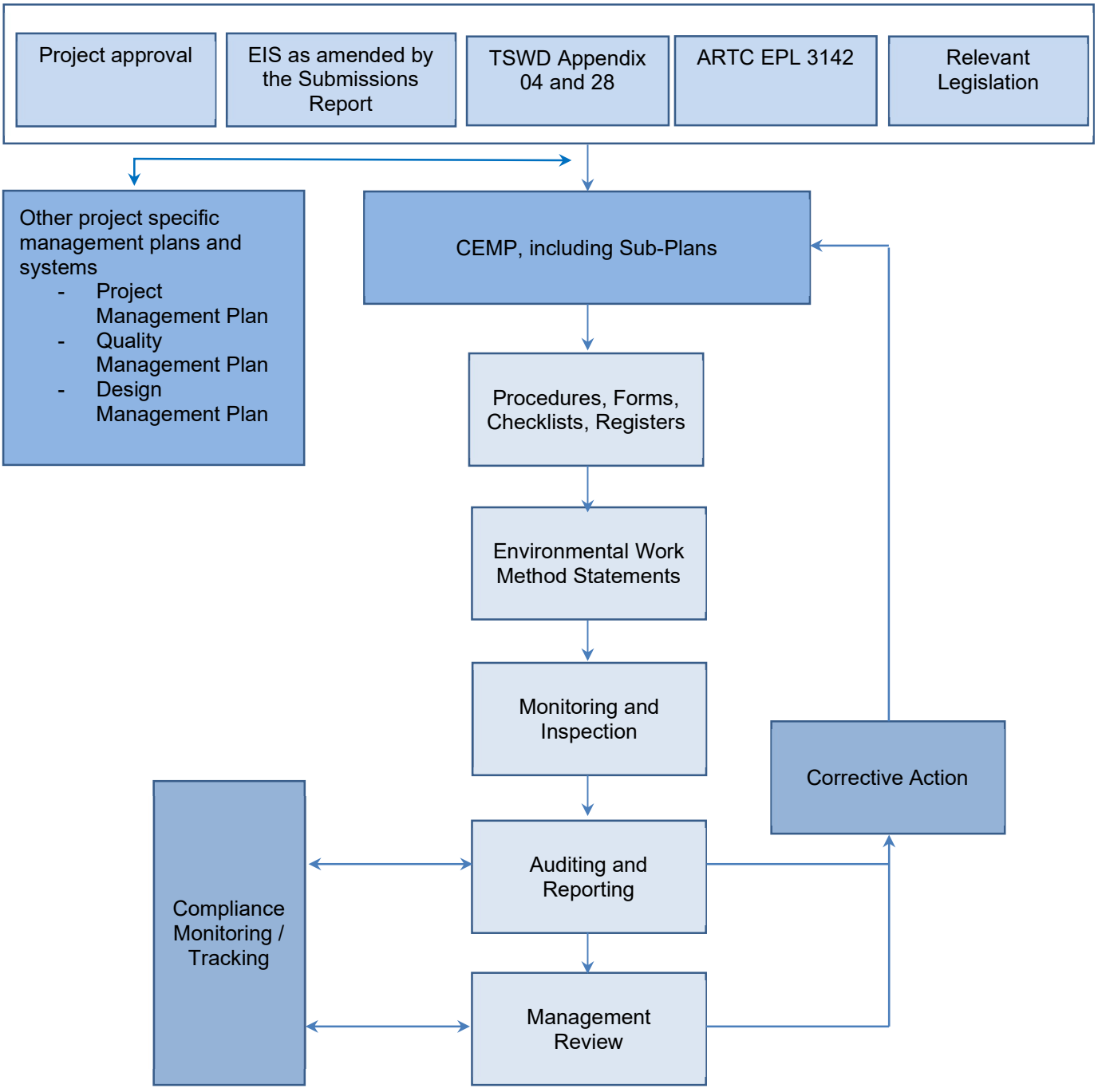


Figure 6: Environmental Management System Structure

3.1.1. CEMP Sub-Plans

A list of the CEMP Sub-Plans required in respect of construction is provided below.

- Appendix B1 Flora and Fauna Management Sub-Plan
- Appendix B2 Noise and Vibration Management Sub-Plan
- Appendix B3 Soil and Water Management Sub-Plan
- Appendix B4 Heritage Management Sub-Plan
- Appendix B5 Air Quality Management Sub-Plan
- Appendix B6 Flood Management Sub-Plan
- Appendix B7 Waste and Energy Management Sub-Plan
- Appendix B8 Traffic and Transport Management Sub-Plan

3.1.2. Procedures, Forms, Checklists, Registers and Other Documents

The Project's environmental management system procedures, forms, checklists, registers and other documents provide instructions and records related to environmental activities. These documents are developed and continually improved throughout the delivery of the project.

3.2. Environmental Risk Assessment

An initial risk assessment has been undertaken prior to commencement of construction as part of Environmental Aspects and Impacts and Risk Assessment Register as outlined in Section 3.2.1. A program for ongoing analysis of the key environmental risks will occur for the duration of the project to ensure compliance with environmental protection requirements. This will occur using a range of tools, including:

- an initial environmental risk assessment undertaken once before the commencement of construction (refer Section 3.2.1)
- review of the CEMP (refer to Section 1.5)
- EWMS development (refer to Section 3.7)
- environmental inspections (refer to Section 8.1)
- environmental monitoring (refer to Section 8.2)
- auditing (refer to Section 8.4), and
- compliance tracking (refer to Section 8.3).

3.2.1. Environmental Aspects and Impacts and Risk Assessment Register

A risk management approach is used to determine the severity and likelihood of an activity's impact on the environment and to prioritise its significance. This process considers potential regulatory and legal risks as well as taking into consideration the concerns of the community and other key stakeholders.

The objectives of the risk assessment are to:

- Identify activities, events or outcomes that have the potential to adversely affect the local environment and/or human health/property
- Qualitatively evaluate and categorise each risk item
- Assess whether risk issues can be managed by environmental mitigation measures
- Qualitatively evaluate residual risk with implementation of mitigation measures.

An initial risk assessment has been carried out to inform the Environmental Aspects and Impacts and Risk Assessment Register contained in Appendix A3. This risk assessment will be reviewed regularly and updated where there is a change of activities not covered in the risk assessment. The risk assessment will also be updated as a response to observed issues, non-conformances and corrective actions which occur as a result of construction. The risk assessment is intended to be a live document which is used to guide risk management during construction.

The risk assessment will also be updated as part of the CEMP revision process outlined in Section 1.5 to ensure it remains relevant for the duration of the project.

3.3. Legal and Other Requirements

3.3.1. Register of Legal and Other Requirements

A register of legal and other requirements for the project is contained in Appendix A1 Table A1-1. This register will be reviewed by the Environmental Manager prior to commencement of construction as part of the preparation of this CEMP and at least annually as part of management review (refer to Section 11.1), and updated with any applicable changes. Any changes made to the legal requirements register will be communicated to the wider team where necessary through toolbox talks, specific training and other methods detailed in Chapter 5 of this CEMP.

3.3.2. Approvals, Permits and Licences

Appendix A1 Table A1-2 contains a register of all relevant environmental licences, permits and approvals. The register will be maintained by the Environmental Manager and will be reviewed before the commencement of construction as part of the preparation of this CEMP and at least annually as part of the management review (refer to Section 11.1), and updated with any applicable changes.

3.3.3. ARTC TSWD Appendix 04 and TSWD Appendix 28

Appendix A1 Table A1-3 and Table A1-4 list the requirements of the CEMP specified in Section 4.7 of TSWD Appendix 04 and Section 28.8 of TSWD Appendix 28 respectively, and where each requirement is addressed in this CEMP. The tables will be reviewed by the Environmental Manager prior to the commencement of construction as part of the preparation of this CEMP.

Compliance with the abovementioned requirements in TSWD Appendix 04 and Appendix 28 will be undertaken through regular inspections, monitoring and auditing as described in Chapter 8.

3.4. Environmental Policy, Sustainability Policy and Environmental Performance Standards

The Environmental Policy describes Fulton Hogan's commitment to continual improvement in environmental performance and compliance with applicable legal requirements.

The Sustainability Policy describes the overall intentions and direction of Fulton Hogan related to its sustainability performance.

The environmental performance standards specify the level of performance required of all personnel and subcontractors to manage the environmental aspects of the project.

The environmental and sustainability policies and environmental performance standards are contained in Appendix A2. They are also displayed on the Fulton Hogan website and at the site office, and communicated to staff and other interested parties via inductions and ongoing awareness programs.

3.5. Environmental Objectives and Targets

Environmental objectives and targets have been established as a means of assessing environmental performance during the construction of the project. The objectives and targets are consistent with Fulton Hogan's environmental and sustainability policies and have been developed with consideration of the key issues identified through the environmental assessment and risk assessment process.

The performance of the project against the objectives and targets will be documented as part of compliance reporting and at least annually as part of the management review (refer to Section 11.1). Environmental objectives and targets for the project are provided in Table 4.

Table 4: Environmental Objectives and Targets

Objective	Target	Measurement tool
Construct the Project in accordance with environmental approvals.	Full compliance with statutory approvals	Audits, construction compliance reporting, management review.
Compliance with all legal requirements.	No regulatory infringements (PINs or prosecutions).	Audits, construction compliance reporting, management review.
Implement an EMS that meets the requirements of AS/NZS ISO 14001.	Address non-conformances and corrective actions within specific timeframes.	Audits, management reviews.
Engage with the affected community, minimise complaints and respond to any complaints within an agreed timeframe.	Disseminate regular project updates and other information through the project website and other tools identified in the Communication Strategy (CS) Record and respond to complaints within the timeframe specified in the CS	Review complaints register, construction compliance report, audits.
Continuously improve environmental performance.	Develop and maintain a program of ongoing environmental training. Capture lessons learnt from environmental incidents to minimise repeat issues. Encourage and reward innovation and effort throughout the workforce.	Construction compliance report, management review, audits.

3.6. Environmental Performance Outcomes Specified in the EIS

The EIS (p22.25) established the intended outcomes to be achieved by the project, known as environmental performance outcomes. The environmental performance outcomes relate to various environmental issues, including transport and traffic; noise and vibration; air quality; biodiversity; soils, protected and sensitive lands; water; flooding; heritage; climate change risk; health and safety; urban design and visual amenity; and waste. How each environmental performance outcome will be implemented and achieved during construction is detailed in the relevant CEMP Sub-Plan(s) or other relevant project documents. The environmental performance outcomes addressed in other project management documents include those related to climate change risk; health and safety; and urban design and visual amenity. These are addressed in the Sustainability Strategy; Work Health and Safety Management Plan; and Urban Design and Landscape Plan respectively.

It is noted that the environmental performance outcomes were not amended as part of the Submissions Report.

3.7. Environmental Work Method Statements (EWMS)

Environmental Work Method Statements (EWMS) are prepared to manage and control high-risk construction activities that have the potential to adversely impact the environment. EWMS will be prepared prior to the commencement of particular construction activities and will incorporate mitigation measures and controls from relevant Sub-Plans.

The Fulton Hogan project team will conduct regular Workplace Risk Assessments (WRA) for the project to identify amongst others, activities of high environmental risk or activities that may impact on environmental sensitive areas to inform development of EWMS. Work cannot proceed where residual environmental risk is ‘high’. An EWMS will be developed to help reduce residual high environmental risk activities to an acceptable level, where possible.

EWMS will be prepared progressively by engineering staff in the lead up to and throughout construction in consultation with relevant members from the project team. The Environmental Manager will conduct the final review and approval.

EWMS will be prepared for:

- Activities assessed as having residual high environmental risk (refer to Section 3.2.1 above)
- Activities that impact on environmentally sensitive areas

All construction personnel and subcontractors will be trained in the relevant EWMS, and will acknowledge that they have read and understood their obligations by signing an attendance record prior to commencing work.

Regular monitoring, inspections and auditing of compliance with the EWMS will be undertaken by project management and environment personnel to ensure that controls are implemented and any non-conformances are recorded and corrective actions are implemented.

3.8. Primary Erosion and Sediment Control Plan

The primary erosion and sediment control plan (ESCP) provides an overview of site conditions known at the time of preparation and the fundamental principles that will be followed in the planning and implementation of erosion and sediment control measures for the project. Only major primary controls are shown on the primary ESCP. The primary ESCP is intended as a preliminary, overarching, conceptual plan.

The primary ESCP for the project is contained in the Soil and Water Management Sub-Plan. This plan will be reviewed by a ‘Certified Professional in Erosion and Sediment Control’ (CPESC).

3.9. Progressive Erosion and Sediment Control Plans

Progressive Erosion and Sediment Control Plans (PESCPs) are used in addition to the overarching primary ESCP (refer to Section 3.8) to identify the approximate location of erosion and sediment control structures within the project site. They are produced for construction stages from initial vegetation clearing to rehabilitation, when erosion and sediment controls are no longer required and are removed. PESCPs will be developed and implemented prior to commencing activities at all works areas where there is a risk of erosion and sediment loss.

PESCPs may be produced in conjunction with EWMS to provide more detailed site-specific environmental mitigation measures.

PESCPs will be developed by Senior Project Engineers and reviewed and approved by the Environmental Manager trained in Soils and Construction - Managing Urban Stormwater Volume 1 (Landcom, 2004) and Volume 2D (DECC, 2008a) (commonly known as ‘the Blue Book’). PESCPs will be reviewed and revised regularly to reflect changing site conditions.

3.10. Sensitive Area Plans

The project traverses environmentally and socially sensitive areas. To assist pre-construction planning and on-site construction management, these areas are consolidated on a series of map-based sheets that extend the length of the project. Sensitive area plans may include the following information:

- Sensitive receivers, e.g. residential dwellings, educational institutions
- Flora and fauna features, including threatened species and threatened ecological communities
- Aboriginal and non-Aboriginal heritage sites, where relevant, and
- Local waterways.

The Sensitive Area Plans are included in Appendix A6. They are a working element of the CEMP and will be revised throughout construction to reflect true ground conditions and the most up-to-date information available on sensitive sites. Sensitive area plans will be used in conjunction with EWMS to help identify key risk areas and to promote ongoing communication to construction personnel during the project.

3.11 Management of light spill

For general safety, security and crime prevention purposes during nights and periods of low sunlight, temporary lighting will be required to support the operation of ancillary sites, along the shared user pathway. Mobile work task lighting will also be required to provide safe illumination of work areas and traffic detours during night works.

Notwithstanding the overriding compliance requirements of AS 1158 “Lighting for Roads and public spaces”, the intent of minimising light spill on sensitive receivers as set out in AS 4282 “Control of the obtrusive effects of outdoor lighting” will be considered during the establishment and operation of temporary lighting where possible, without compromising the safety of workers or motorists.

Lighting set out will be assessed in accordance with the general priniples set out in AS 4282 Figures A1, A2 and A4 below. Each individual lighting setup will be established on site in consideration of safety illumination requirements, topograpghy and the proximity to sensitive receivers.

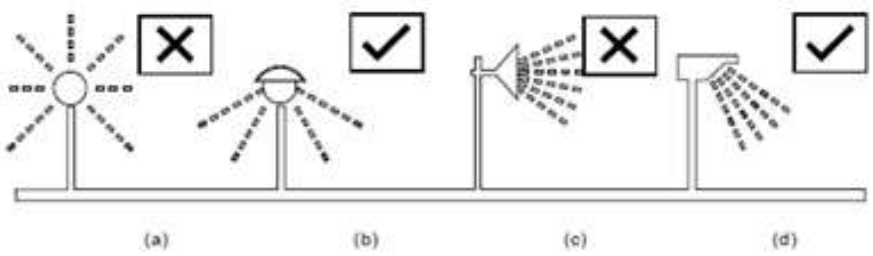


FIGURE A1 SIMPLIFIED LIGHTING TYPES AND THEIR ABILITY TO CONTROL OBTRUSIVE LIGHT

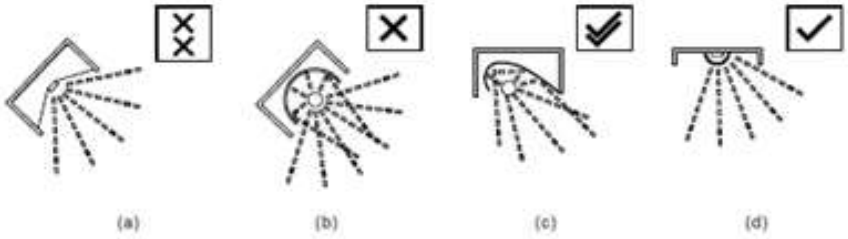


FIGURE A2 EFFECT OF THE LIGHT DISTRIBUTION OF THE LUMINAIRE ON THE ABILITY TO CONTROL OBTRUSIVE LIGHT

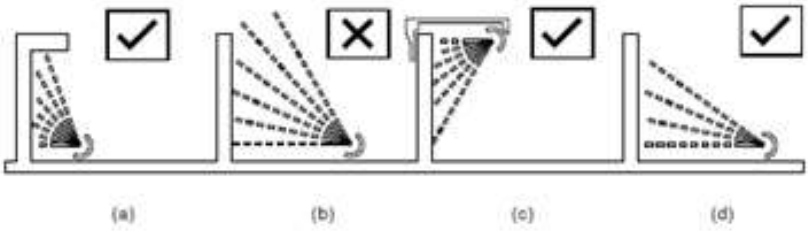


FIGURE A4 EFFECT OF LUMINAIRE LOCATION ON CONTROL OF SPILL LIGHT TO THE SKY

The lighting design for ancillary sites , temporary fixed and portable lighting shall consider sensitive receivers with the aim of preventing horizontal and upward light spill so as to not cause visual amenity impacts through light glare upon residential properties or environmentally sensitive areas as identified in Appendix A6, Sensitive Area Plan.

The Out of Hours Work Procedure and task specific Safe Work Method Statements require identification and assessment of work lighting. During the “out of hours” noise verification monitoring process, Environment Team and Supervisory staff will monitor potential light glare or “spill” and make adjustments as necessary to reduce the potentially adverse effects of outdoor lighting on nearby residents, road users or environmentally sensitive areas.

To minimise “sky glow” or “light spill”, temporary lighting willl comprise fully adjustable mobile flood light lighting towers with light beams directed downwards, using directional luminaires fitted with shields and baffles as necessary. Lighting tower heights will be established at the lowest effective mounting height to illuminate the work space safely, whilst preventing glare to passing motorists and minimising light spill beyond the immediate work area and project boundary. Where available and feasible, solar powered or hybrid lighting towers will be employed to further minimise impacts associated with the out of hours activities.

Where uplighting is required during construction, luminares will be installed below overhangs such as bridge beams or abutments. Additional shielding maybe be created using noise blankets and temporary fencing or utilising stockpiles to create buffering of sensitive properties and minimising direct views from potential receivers towards the luminaires. All lights will be switched off when not longer required.

4. Implementation and Operation

4.1. Resources, Roles, Responsibilities and Authority

The key Fulton Hogan environmental management roles and responsibilities for the construction phase of the project and their relationship with the ER are described below. The structure of these roles is shown in Figure 7.

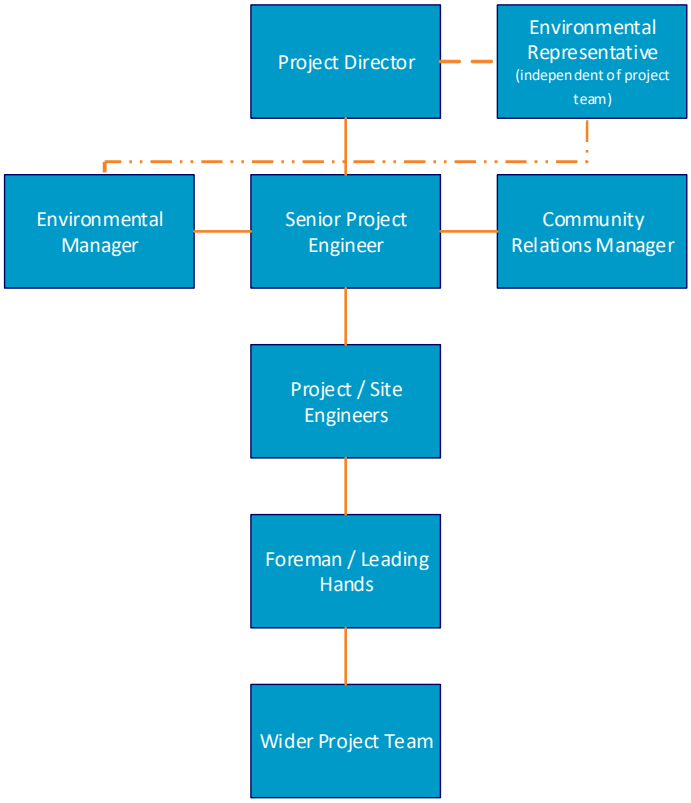


Figure 7: Project Environmental Management Team Structure

4.1.1. Environmental Representative

The environmental responsibilities of the Environmental Representative as detailed in CoA A17 include:

- Receive and respond to communication from the Planning Secretary in relation to the environmental performance of the CSSI
- Consider and inform the Planning Secretary on matters specified in the terms of the project approval
- Consider and recommend to ARTC and Fulton Hogan any improvements that may be made to work practices to avoid or minimise adverse impact to the environment and to the community
- Approve documents identified in CoA A23, C1, C4 and C8 after verifying all relevant matters set out in the project approval pertaining to those documents have been met and make a written statement to the Planning Secretary to this effect
- Regularly monitor the implementation of the documents listed in CoA A23, C1, C4 and C8 to ensure implementation is being carried out in accordance with the document and the terms of the project approval
- As may be requested by the Planning Secretary, help plan, attend or undertake audits of the development commissioned by DPE including scoping audits, programming audits, briefings and site visits, but not independent environmental audits required under CoA A29 of the project approval

- As may be requested by the Planning Secretary, assist DPE in the resolution of community complaints
- Consider the impacts of minor construction ancillary facilities as required by CoA A22 of the project approval, and
- Prepare and submit to the Planning Secretary and other relevant regulatory agencies, for information, an Environmental Representative Monthly Report providing the information set out in the Environmental Representative Protocol under the heading “Environmental Representative Monthly Reports”. The Environmental Representative Monthly Report must be submitted within seven (7) days following the end of each month for the duration of the ER’s engagement for the CSSI.

4.1.2. Project Director

The environmental responsibilities of the Project Director include:

- 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 other construction requirements
- Endorse and support the environmental and sustainability policies
- Liaise with the Environmental Representative, ARTC and other government authorities as required
- Participate and provide guidance in the regular review of this CEMP and supporting documentation
- Provide adequate resources (personnel, financial and technological) to ensure effective development, implementation and maintenance of this CEMP
- Provide suitable resources to carry out all licensed activities (where relevant) in a competent manner.
- Ensure that all personnel receive appropriate induction training, including details of the environmental and community requirements
- Ensure that complaints are investigated and issues raised resolved in accordance with the Communication Strategy (CS)
- Direct that works be stopped immediately where there is an actual or potential risk of harm to the environment.

4.1.3. Senior Project Engineer

The environmental responsibilities of the Senior Project Engineer include:

- Plan construction works in a manner that avoids or minimises impact to environment
- Ensure the requirements of this CEMP are fully implemented
- Ensure construction personnel manage construction works in accordance with statutory and approval requirements
- Ensure environmental management procedures and protection measures are implemented
- Ensure all Project personnel attend an induction prior to commencing works
- Liaise with ARTC and other government authorities as required
- Direct that works be stopped immediately where there is an actual or potential risk of harm to the environment.

4.1.4. Environmental Manager

The environmental responsibilities of the Environmental Manager (EM) include:

- Advise on environmental matters specified in the project approval, ARTC specifications and compliance with all other relevant statutory approvals, licences, permits and authorisations
- Lead liaison with the Environmental Representative, ARTC and with all relevant authorities on environmental matters, including inspection requirements and responding to any issues raised
- Maintain a register of all environmental management documents
- Ensure that the CEMP is established, implemented and maintained in compliance with the project approval and ARTC specification
- Overall responsibility for the establishment, management, monitoring and maintenance of erosion and sediment controls within the project area

- Carry out regular inspections and auditing of the works to ensure that environmental safeguards are being followed
- Identify where the implemented environmental measures are not meeting the targets set, and identifying areas where improvement can be achieved
- Prepare monthly reports outlining the works that have been undertaken and the achievements that have been met, as well as identifying those areas where improvements were made, and detailing environmental performance
- Facilitate environmental induction and toolbox talks for all site personnel
- Specific authority to stop work on any activity where the Environmental Manager deems it necessary to prevent environmental nonconformities
- Notify the relevant parties of any environmental incidents
- Provide the ER information which is relevant and required for the ER to undertake their role as the representative for DPE

4.1.5. Community Relations Manager

The environmental responsibilities of the Community Relations Manager include:

- Ensure that all community consultation activities are carried out in accordance with the project requirements
- Report any environmental issues raised by stakeholders or members of the community to the Environmental Manager
- Communicate environment-related project progress, performance, mitigation measures and issues to stakeholders and the community
- Maintain the 24-hour complaints hotline.

4.1.6. Project /Site Engineers

The environmental responsibilities of the Project/Site engineers include:

- Provide input into the preparation of environmental planning documents as required
- Ensure instructions and information relating to project environmental risks are provided to staff
- Ensure that the works are carried out in accordance with the requirements of the CEMP and supporting documentation, including the implementation of all environmental controls
- Identify environmental risks and communicate them to the Environmental Manager
- Identify resource needs for implementation of CEMP requirements and related documents
- Ensure that environment related complaints are investigated to ensure effective resolution
- Take action in the event of an environmental incident or potential environmental incident and allocate the required resources to minimise environmental impact
- Report any activity that has resulted, or has the potential to result, in an environmental incident immediately to the Senior Project Engineer and Environmental Manager

4.1.7. Foreman/ Leading Hands

The environmental responsibilities of the Foreman/ Leading Hands include:

- Undertake environmental duties as defined by the Senior Project Engineer or Project/ Site Engineers
- Control field works and implement/maintain effective environmental controls
- Where required, undertake environmental risk assessment of works prior to commencement
- Ensure site activities comply with EWMS and relevant records are kept
- Ensure all site workers are site inducted prior to commencement of works
- Attend to any spills or environmental incidents that may occur on site
- Immediately report to the Senior Project Engineer any activity that has resulted, or has the potential to result, in an environmental incident

- Stop activities where there is an actual or potential risk of harm to the environment and advise the Senior Project Engineer, or Environmental Manager.

4.1.8. Wider Project Team

The environmental responsibilities of the Wider Project Team include:

- Comply with the relevant requirements of the CEMP and other environmental documentation
- Participate in the 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 potential risk of harm to the environment and advise the Project Director, Senior Project Engineer, General Superintendent or Environmental Manager.

4.2. Subcontractor Management

Subcontractors' environmental requirements and responsibilities will be addressed in the contract documentation. As part of the selection process, consideration will also to be given to their past environmental performance.

The Environmental Manager, or delegate, will participate in the tender assessment and selection process where it is deemed necessary due to associated environmental risks. All subcontractors will be required to complete a subcontractor questionnaire or similar.

All subcontractors are required to work in accordance with the approved CEMP.

All subcontractors will be required to attend project and site inductions where the requirements and obligations of the CEMP will be communicated. A record of all subcontractors inducted will be maintained as part of the project induction and training register.

A standard monitoring form will be developed that will be used to assess the:

- Subcontractor's general work practices
- Effectiveness of the subcontractor's environmental protection measures
- Subcontractor's compliance with the requirements of this CEMP
- Maintenance of environmental measures.

5. Competence, Training and Awareness

The Project Director has overall responsibility for ensuring the requirements of this CEMP are fully implemented. The Environmental Manager will coordinate environmental training in conjunction with other training and development activities.

5.1. Environmental Induction

All personnel (excluding short-term and temporary visitors) are required to attend a compulsory site induction that includes an environmental component prior to commencement on site.

Short-term visitors carrying out inspections/ entering the site (such as regulators) will be required to carry out a visitor's induction and be accompanied by inducted personnel at all times.

Temporary visitors for purposes such as deliveries will be required to be accompanied by inducted personnel at all times.

The Environmental Manager (or delegate) will conduct the environmental component of the site induction. The environmental component will include an overview of:

- purpose and objectives of the CEMP

- requirements of due diligence and duty of care
- conditions of environmental licences, permits and approvals
- potential environmental emergencies on the project and the emergency response procedures, locations and training in the use of emergency spill kits for spills on water and on land
- reporting, notification and management requirements for pollution, contamination and other environmental incidents, and for damage and maintenance to environmental controls
- responsibilities regarding interactions with the public including complaints
- high-risk activities and associated environmental safeguards
- working in or near environmentally sensitive areas
- working with hazardous materials, including:
  - storage of hazardous materials
  - Transfer of fuels and hazardous materials
- site-specific issues including:
  - adjoining residential / business (including the adjacent university facility and housing) areas requiring particular noise management measures
  - permissible hours/days of work
  - any limitations on high noise generating activities
  - location of nearest sensitive receivers
  - construction employee parking areas
  - designated loading and unloading areas and procedures
  - site opening/closing times (including deliveries)
  - requirement to report and the process for reporting environmental issues and incidents on site
  - requirement to report and the process for reporting damaged environmental controls
  - noise, vibration and air quality management controls
  - requirement to maintain surrounding property access for residences, facilities, business owners, and their visitors, and to minimise disruptions to these properties for the duration of construction
  - location of reuse bins, washing, refuelling and maintenance of vehicles, plant and equipment
  - waste minimisation principles,
  - unexpected finds procedures including for contamination, heritage and threatened species/ TECs, and
  - incident management processes.

Refresher environmental awareness training will be undertaken as required based on environmental risk assessment and turnover of project personnel.

A record of all environment inductions will be maintained and kept on site. The Environmental Manager may authorise amendments to the induction at any time. Changes to the induction may be required to address project modifications, legislative changes or amendments to this CEMP or related documentation.

5.2. Toolbox Talks, Training and Awareness

Toolbox talks will be one method used to raise awareness and educate personnel on construction related environmental issues. The Toolbox talks will be used to ensure environmental awareness continues during construction.

Toolbox talks will include details of EWMS for relevant personnel. Toolbox talks will also be tailored to specific environmental issues relevant to upcoming works, including for example:

- Erosion and sedimentation control
- Site preparation before heavy rainfall and flood events
- Hours of work
- Emergency and spill response

- Aboriginal and non-Aboriginal heritage
- Threatened species, threatened ecological communities, clearing controls and vegetation protection
- Weed management
- Construction noise
- Housekeeping and waste
- Concrete washout
- Dewatering
- Project and clearing limits
- Dust control
- Night works, including measures to reduce potential noise and light spill impacts.

Toolbox talk attendance is mandatory and attendees of toolbox talks are required to sign an attendance form. Records of Toolbox talk attendance will be maintained.

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

Another way to inform construction personnel will be through the development and distribution of awareness notes. These will typically take the form of a poster, booklet or similar and will be distributed to engineers, leading hands, foremen and others with a responsibility for managing specific work locations or activities. This documentation will be used to inform the broader workforce at daily pre-start meetings (see Section 5.3) or made available in worker crib sheds/ break facilities.

5.3. 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, EWMS for a particular area of work, 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 Foreman, or other appropriate site staff member, will conduct a daily pre-start meeting for the site workforce before the commencement of work each day (or shift) or where changes occur during a shift. Pre-start meetings may be project-wide and/or held for specific work areas. Pre-start meetings are generally succinct in nature and take about ten (10) minutes to deliver.

The environmental component of pre-start meetings will be determined by the relevant foreman 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 and the records maintained.

6. Communication

6.1. Internal Communication

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

Regular meetings may also be scheduled with ARTC to communicate ongoing environmental performance and to discuss issues to be addressed.

The environment team members will participate regularly in toolbox talks to communicate to the wider project personnel on environmental performance including sensitive environmental matters for future work areas, and to receive feedback from on-site personnel.

Further internal communication about environmental issues and aspects will be through toolbox talks and daily pre-start meetings as described in Sections 5.2 and 5.3 respectively.

6.2. External Communication

6.2.1. Communication with the EPA and Government Agencies

The following three project team members are nominated as 24 hour contacts for environmental regulatory authorities, with the authority to take immediate action to shut down any activity, or to implement any additional pollution control measures:

- Shannon Chisholm (Environmental Manager), [redacted]
- Jacob Cooper (Environmental Manager), [redacted]
- Peter George (Project Director), [redacted]

Refer to Chapter 7 for how Fulton Hogan communicates with agencies and authorities about pollution incidents that cause or threaten material harm to the environment.

6.2.2. Community Communications

The Communication Strategy provides mechanisms to facilitate communication between ARTC, the project team, the relevant council and the local community on construction-related and environmental matters. The Communication Strategy also addresses the key construction issues that are likely to affect community such as traffic, property access, noise and vibration, and landscaping.

6.2.3. Complaints and Enquiries Management

Complaints will be managed consistent with AS-ISO 10002-2006 Complaints Handling (which has superseded AS 4269 Complaints Handling) and the requirements of ARTC EPL 3142, the Communication Strategy and CoA B5-B9.

All community enquiries and complaints related to the construction activities will be referred to the 24-hour community information line (1300 550 402). A postal address and email address has been provided for receipt of complaints and enquiries:

Cabramatta Loop Project

PO Box 6099

Alexandria NSW 2015

Email: CabramattaLoop@fultonhogan.com.au

In accordance with CoA B8 information on all complaints received, including the means by which they were addressed and whether resolution was reached and whether mediation was required or used, will be recorded in ARTC' established "Consultation Manager" database. Information on complaints received and how they are resolved will be reported in accordance with ARTC EPL 3142.

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

7. Incidents and Emergencies

Environmental incidents are unexpected or intended situations with the potential for negative environmental outcomes. This can include the following:

- Pollution Incident (an incident that causes harm to the environment through unplanned release or deposition of a substance including: emissions to air (including odour), land, water and illegal dumping).

- An incident which does not meet the definition of a Pollution Incident and results in unplanned impact to the environment through damage, disturbance, or disruption including vegetation clearing, impact to heritage values and community.
- An environmental non-conformance arising from any of the following:
  - A breach of Environmental Impact Assessment or Environmental Management Plan documentation;
  - A breach of environmental licence, approval or permit conditions;
  - A breach of Environmental Management System documentation or process; or
  - A breach of environmental legislation.
- A complaint received and logged through the Enviroline service (1300 550 402) where it is found that an environmental non-conformance meeting any of the criteria below has occurred.
  - Injury or death to animal (excluding train strike).
  - Damage or destruction of vegetation.
  - An environmental non-conformance arising from any of the following:
    - A breach of Environmental Impact Assessment or Environmental Management Plan documentation;
    - A breach of environmental licence, approval or permit conditions;
    - A breach of Environmental Management System documentation or process; or
    - A breach of environmental legislation.
  - Damage to indigenous and non-Indigenous heritage structures, items or places.
  - Introduction or spread of bio-security threat.

All environmental incidents and emergencies will be managed in accordance with the Incident and Emergency Response Plan (IERP) and ARTC Pollution Incident Response (ENV-WI-002). Fulton Hogan's Case and Action Management System software (CAMs) will be used to record all environment incidents.

Reporting of environmental incidents will be undertaken in accordance with the IERP and ARTC's procedure for Reporting (COR-PR-012). Incident Reports will be generated as detailed in Table 5, Item No. 5.

Upon consultation with an ARTC environmental staff member, Eastern Region Environment Manager and the Eastern Region Operations Manager, the Environmental Manager will notify each relevant authority immediately via the appropriate telephone number should a pollution incident occur that causes or threatens material harm to the environment.

The relevant authorities to be notified are:

- The EPA (via the EPA pollution line 131 555)
- Ministry of Health (via the local Public Health Unit)
- SafeWork NSW
- Relevant council(s), including Fairfield City Council and/or Liverpool City Council, and
- Fire and Rescue NSW.

For telephone numbers, refer to the Contacts List on page vi of this CEMP.

All environmental incidents (including those notified to the EPA under Part 5.7 of the POEO Act and under the Protection of the Environment Legislation Amendment Act 2011) will be notified to DPE and ARTC in writing immediately after Fulton Hogan becomes aware of the incident, in accordance with the requirements of CoA A31 and Appendix A of the project approval. As per CoA A31, a description of whether the incident was a result of any actual or potential non-compliance with the approval will be provided within one week of the notification. As per ARTC's procedure Reporting (COR-PR-012) for pollution incidents, an ARTC Pollution Report will be completed.

In the event that DPE or ARTC requests additional information in relation to the incident, Fulton Hogan will provide the requested information within an agreed timeframe.

8. Inspections, Monitoring and Auditing

8.1. Environmental Inspections

Informal inspection will be undertaken by Fulton Hogan staff as required. This may include daily inspections of work areas by Supervisors or task specific inspections by members of the environmental team. Corrective actions will be undertaken as required. Formal inspections are detailed below.

8.1.1. Weekly and Post Rainfall Site Inspections

The Environmental Manager (or delegate) will ensure all erosion and sediment control measures on the project are inspected and works undertaken to repair and/or maintain these controls:

- weekly during standard construction hours
- daily during periods of rainfall potentially causing runoff (if safe to do so), and
- within 24 hours of cessation of a rainfall event potentially causing runoff to occur on or from the project (if safe to do so).

Results of the inspections will be recorded in the Environmental Inspection Checklist. Alternatively, a mobile software application may be used, such as 'iAuditor'.

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 or using the mobile software application. Records will also include details of any maintenance required, the nature of the deficiency, any actions required and an implementation priority. The completion of the actions will be monitored to ensure they are implemented within the agreed timeframes specified in the checklist.

8.1.2. ER and ARTC Inspections

ARTC environment personnel and the ER will undertake regular inspections of work sites during construction. Inspections would typically occur depending on the complexity of the work and anticipated environmental risks associated with the construction activities.

A member of the Project's environment team will participate in all ARTC and ER 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. Refer to Chapter 10 for further details about non-conformances.

8.1.3. Other Agency Inspections

While there are no planned inspections by other agencies (EPA, DPE or other agencies) or stakeholders, circumstances may develop which result in a request to inspect the project. These will be addressed within the requirements of the relevant legislation, licence or approval document for that agency or stakeholder.

8.2. Environmental Monitoring

Monitoring will be carried out to enable comparison of the actual construction performance against the predicted performance (where relevant), to measure the effectiveness of environmental controls and implementation of this CEMP, and to address project approval requirements.

Environmental monitoring required during construction specific to a particular environmental aspect is described in the relevant Sub-Plans. Any non-conformance with these monitoring requirements will be reported to the ER and ARTC by the Environmental Manager in the monthly report.

Where a non-conformance is detected or monitoring results are outside the expected range and are directly attributable to the project (i.e. are influenced by factors under the direct control of the project, such as noise from construction equipment), the process described in Chapter 10 will be implemented. Steps in the process will typically include:

- An analysis of the results by the Environmental Manager to determine possible causes for the non-conformance

- A site inspection by the Environmental Manager or delegate
- Advising relevant personnel of the problem
- Identifying and agreeing on actions to resolve or mitigate the non-conformance
- Implementing actions to rectify or mitigate the non-conformance.

The timing for any improvement will be agreed between the relevant engineer/ General Superintendent and Environmental Manager based on the level of risk (e.g. a significant risk will require immediate action).

Environmental monitoring equipment will be maintained and calibrated according to the manufacturer's specifications and appropriate records kept.

8.3. Compliance Monitoring/ Tracking during Construction

Compliance with environmental requirements during construction will be monitored/ tracked as part of the monthly report. Refer to Chapter 9 (Table 5, Item No. 1) for monthly reporting requirements.

In accordance with the clarification letter provided by DPIE dated 1 September 2021, compliance reporting will be carried out in direct compliance with the Compliance Reporting Post Approval Requirements (DPIE, May 2020). This means operational compliance reporting will be carried out only. There is no requirement for pre-construction, construction and pre-operational compliance reporting.

It is noted that operational compliance reporting will be monitored/ tracked separately to this CEMP, in accordance with the Operational Environmental Management System required under CoA D1.

8.4. Auditing

8.4.1. Internal Audits

A comprehensive environmental risk-based internal audit program will be carried out by suitably qualified and experienced Fulton Hogan personnel not directly associated with the project every twelve (12) months or in response to emerging environmental risks. The first audit will occur no longer than three (3) months after commencement of construction. Internal audit frequency may change in response to the management review process described in Section 11.1.

These audits will verify compliance with environmental requirements, specifically:

- The CEMP
- Project approval requirements
- Relevant legal and other requirements (e.g. licenses, permits, regulations, ARTC contract documentation).

Internal audits will be focussed on those activities occurring on site with the highest potential risk.

8.4.2. External Independent Audits

In accordance with the clarification letter provided by DPIE dated 1 September 2021, independent auditing will be carried out in direct compliance with the Independent Audit Post Approval Requirements (DPIE, May 2020) as outlined below.

- Construction phase:
  - Initial independent audit within 12 weeks of the commencement of construction
  - Ongoing independent audit at intervals, no greater than 26 weeks from the date of the initial Independent Audit or as otherwise agreed by the Secretary.
- Operation phase:
  - Initial independent audit within 26 weeks of the commencement of operation
  - Ongoing independent audit at intervals, no greater than 3 years or as otherwise agreed by the Secretary.

In accordance with the Independent Audit Post Approval Requirements (DPIE, May 2020 p17), submission of the Independent Audit Report and the response to the audit findings must be submitted to DPE within 2 months of undertaking the independent audit site inspection, unless otherwise agreed by DPE. Furthermore, each

Independent Audit Report and response to it will be made publicly available and DPE will be notified in writing when this has occurred as per CoA A30(b).

It is noted that operational independent auditing will monitored/ tracked separately to this CEMP, in accordance with the Operational Environmental Management System required under CoA D1.

9. Reporting

Various reports will be prepared by Fulton Hogan during construction to fulfil ARTC and other reporting needs, and requirements under the project approval. Table 5 sets out the general reporting requirements for the project, frequency of the reporting, who is responsible for managing preparation of the reports and the intended recipient(s).

In addition, reporting requirements specific to a particular environmental aspect are set out in the relevant Sub-Plan (e.g. noise reporting requirements are set out in the NVMP).

Table 5: Types of Reports

No.	Report	Requirement	Frequency	Responsibility	Recipient
1	Monthly Environmental Report	For incorporation in project Monthly Reports including environmental statistics (i.e. incidents, regulatory action, complaints on environmental issues, non-compliance and actions taken to address non-compliance), monitoring program performance and key environmental issues.	Monthly	Environmental Manager	ARTC
2.	ER Monthly Report	Report on matters set out in the Environmental Representative Protocol (DPIE, October 2018) as specified in CoA A17(i).	Monthly	Environmental Representative	Planning Secretary
3.	Compliance Report	There is no requirement for pre-construction, construction and pre-operational compliance reporting as per the Compliance Reporting Post Approval Requirements (DPIE, May 2020). Operational compliance reporting will be monitored/ tracked separately to this CEMP, in accordance with the Operational Environmental Management System required under CoA D1.	NA	NA	NA

No.	Report	Requirement	Frequency	Responsibility	Recipient
4.	Construction Monitoring Report	Report on construction monitoring results and analysis against relevant criteria for the Construction Monitoring Program contained in the NVMP and SWMP.	Six (6) monthly	Environmental Manager	The ER, the Planning Secretary, relevant government agencies and the public (in accordance with CoA C9(g) and C13).
5.	Incident Report	Report on an incident in accordance with the requirements set out in Appendix A of the project approval.	Within thirty (30) days of the date on which the incident occurred or as otherwise agreed to by the Planning Secretary.	Environmental Manager	The Planning Secretary and any relevant public authorities (as determined by the Planning Secretary).

10. Non-conformance/ Non-Compliance, Corrective and Preventative Actions

Any member of the project team may raise a non-conformance/ non-compliance or improvement opportunity. The Quality Management Plan describes the process for managing non-conforming/ non-complying work practices and initiating corrective/ preventative actions or system improvements.

The ER or ARTC may also raise a non-conformance/ non-compliance or improvement opportunity using the same process.

A non-conformance/ non-compliance is defined as the failure or refusal to comply with the requirements of this CEMP and/or project approval requirements. An environmental non-conformance is also considered an incident when it results in from any of the following:

- A breach of Environmental Impact Assessment or Environmental Management Plan documentation;
- A breach of environmental licence, approval or permit conditions;
- A breach of Environmental Management System documentation or process; or
- A breach of environmental legislation.

If the non-conformance/ non-compliance constitutes an environmental incident the management and notification outlined in IERP as per Chapter 7 will be implemented, this determination will be made by the Environmental Manager in consultation with ARTC and the ER as required.

For each identified non-conformance/ non-compliance identified, a corrective/ preventative action(s) must be implemented. In addition, any environmental management improvement opportunities can be initiated as a result of incidents or emergencies, monitoring and measurement, audit findings or other reviews. Improvement opportunities may also result in the implementation of corrective/ preventative actions.

Corrective/ preventative actions and improvement opportunities will be entered into the Fulton Hogan quality system database and will include details of the issue, action required, timing and responsibilities. The record will be updated with date of close out and any necessary notes. The database will be reviewed regularly to ensure actions

are closed out as required. Prioritisation of corrective/ preventative actions will be commensurate with the risk of harm associated with the non-compliance.

Non-conforming/ non-complying activities may be stopped, if necessary, by the Environmental Manager or Project/ Site Engineer following consultation with the Senior Project Engineer or delegate. The works will not recommence until a corrective/ preventative action has been closed out. In such circumstances a non-conformance report must be prepared in accordance with the Quality Management Plan.

11. Review and Improvement

11.1. Management Review

Management review will be undertaken as part of the continual improvement process. The management review will consist of either group, or executive reviews as detailed in Sections 11.1.1 and 11.1.2 respectively. The outcomes of the group and executive reviews could include amendments to this CEMP and associated Sub-Plans and programs, revision to the project's environmental management system, review of the Environmental Aspects and Impacts and Risk Assessment Register, re-evaluation of the project objectives and targets as well as input into other project documents. For further details on the CEMP revision process, refer to Section 1.6.

11.1.1. Group Review

A group review is initiated by the Environmental Manager and includes relevant project team members and stakeholders. The environment team meet quarterly, or at other pre-determined periods, to review environmental management issues for the project. The environment team meeting may be undertaken in conjunction with a wider group meeting if the Environmental Manager deems it appropriate.

The environment group meetings include:

- a review of the Environmental Aspects and Impacts and Risk Assessment Register (Appendix A3 of the CEMP), legal register (Appendix A1 of the CEMP) and environmental induction
- consideration of monitoring, inspection and audit results
- consideration of incidents and any lessons learnt
- consideration of any new regulatory issues
- a review of the effectiveness of erosion and sediment controls
- consideration of changes in operational needs such as resourcing
- feedback from management reviews.

11.1.2. Executive Review

An executive review will involve the management team. This review will be held annually and will include a review of:

- effectiveness of environmental management documentation implementation
- management effectiveness
- potential improvements to the environmental management documentation
- adequacy of resources
- findings of audits
- environmental objectives and targets
- environmental performance
- compliance with legal and other requirements
- critical non-conformance or repeated non-conformances
- organisation changes
- effectiveness of training and inductions.

12. Documentation

12.1. Environmental Records

The Environmental Manager is responsible for maintaining all environmental management documents so that they are always current at the point of use. Types of 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
- Community engagement information
- Minutes of CEMP and construction environmental management system review meetings and evidence of any action taken.

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 Environmental Manager, or delegate, has the authority to change any of the environmental management documentation.

12.2. Document Control

The Environmental Manager, or ARTC where relevant, will coordinate the preparation, review and distribution, as appropriate, of the environmental documents listed above. During construction, the environmental documents will be stored at the main site compound.

The document control procedure will be implemented to control the flow of documents. 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.

A register and distribution list will identify the current revision of particular documents or data.

Appendix A1: Legal and Other Requirements

Table A1-1: Register of Legal and Other Requirements

Legislation	Activity/aspect	Requirement	Reference	Division 5.2 Applicability
General				
Environmental Planning and Assessment Act 1979	All	Comply with the 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.	S5.25	Yes
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) Emitting an ozone depleting substance.	S115 S116 S117	Yes
	Licensing	Do not carry out activities listed in Schedule 1 unless an EPL is in place that authorises that activity to be carried on at those premises.	S48	Yes
Protection of the Environment Operations Act 1997	Control equipment	Properly and efficiently maintain and operate any installed pollution control equipment (including monitoring devices).	S167	Yes
Protection of the Environment Operations Act 1997	Notification of pollution incidents	Notify the EPA immediately of pollution incidents where material harm to the environment is caused or threatened.	S148	Yes
Protection of the Environment Operations (General) Regulation 2009	Collection of data from reporting facilities	Subject to Part 4, the occupier of each reporting facility is to provide the EPA with the following information if a reporting threshold for a substance is exceeded in a reporting period: supporting data for the facility, substance identity information and emission data, estimated in accordance with Part 3, for each substance for which the reporting threshold is exceeded in the period,	S65	Yes

Legislation	Activity/aspect	Requirement	Reference	Division 5.2 Applicability
		the type and mass of fuel or waste burned in the reporting period any other information that may be required to assess the integrity of the emission data, substance identity information and mandatory transfer data for each substance for which a category 1, category 1b or category 3 reporting threshold is exceeded in the period, any information that may be required to assess the integrity of the mandatory transfer data, a statement, signed by the occupier or a person authorised by the occupier for that purpose, that the occupier has exercised due diligence in gathering.		
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
Pesticides Act 1999	Hazards and risks	Must not possess an unregistered pesticide unless the person is authorised to do so by a permit, and complies with the permit. Use pesticides in an environmentally sensitive manner. Do not use an unregistered pesticide without a permit. Read the label or permit for the pesticide. Must not, keep a registered pesticide in a container that does not have an approved label attached to the container. Use registered pesticides in accordance with instructions on the label.	S12 S13 S14 S15 S16 S17	Yes

Legislation	Activity/aspect	Requirement	Reference	Division 5.2 Applicability
		Do not use or posses 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.		
National Greenhouse and Energy Reporting Act, 2007	Greenhouse gas emissions	Accounting and reporting of greenhouse gases produced and energy consumed during construction. Applicability dependent on thresholds.	-	Yes
Water/ Flood				
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 and use	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 of water on land (unless supplied by a water utility, irrigation corporation etc. or in accordance with basic landholder rights) without a water use approval.	S56 S60A S89 S91A	No, ARTC is exempt.
Water Management Act 2000	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, ARCT is exempt.
Water Management Act 2000	Waterfront land	Do not deposit material, excavate, or remove material within a watercourse bank, shore or bed, or on land 40 metres inland, or interfere with the likely flow of water to such a body, without a controlled activity approval.	S91	No, public authorities are exempt from the need to obtain a

Legislation	Activity/aspect	Requirement	Reference	Division 5.2 Applicability
				controlled activity approval. Water Management (General) Regulation 2004 (cl.39A)
Protection of the Environment Operations Act 1997	Water pollution	Do not cause water pollution.	S120 S122	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
Protection of the Environment Operations Act 1997	Materials management	Do not cause noise by failing to properly and efficiently deal with materials.	S140	Yes
Protection of the Environment Operations (Noise Control) Regulation 2017	Noise emissions from vehicles	A person must not cause or permit a motor vehicle to be used on a road or road related area if the motor vehicle is capable of emitting noise at a level in excess of the level specified in Schedule 1 for that type of motor vehicle as determined in accordance with Part 6 (the"prescribed noise level"). A person must not cause a motor vehicle to be used in a place (other than on a road or road related area) in such a manner that it emits offensive noise. A person must not cause or permit a motor vehicle that is not a heavy vehicle to be driven or used on a road or road related area if the motor vehicle has a temporary noise reduction device fitted that-- was not fitted by the vehicle manufacturer, or	S5 S6 S17	Yes

Legislation	Activity/aspect	Requirement	Reference	Division 5.2 Applicability
		is not an equivalent replacement for any such device fitted by the vehicle manufacturer, or is not a plate, baffle or other device that is part of a muffler, resonator or the like and that is fitted to a motor cycle.		
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. Contamination meets other criteria that may be prescribed by the regulations.	S60	Yes
Biodiversity				
Biosecurity Act 2015	Weed control	The Biosecurity Act provides the framework to protect our community from the adverse effects from animal and plant pests, diseases and weeds to maintain market access.	-	Yes
National Parks and Wildlife Act 1974	Native fauna	Do not harm any animal that is of a threatened species population or ecological community, or its habitat except in accordance with a planning approval.	Part 8A	Yes
		Do not harm critical habitat except as in accordance with a planning approval.	S98	Yes

Legislation	Activity/aspect	Requirement	Reference	Division 5.2 Applicability
		Do not harm native fauna (other than listed unprotected fauna) except in accordance with a planning approval or licence.	S120, S127, 132C	Yes
Native Vegetation Act 2003	Flora and native vegetation conservation	Only clear native vegetation in accordance with a planning approval or property vegetation plan.	S12	Yes
Fisheries Management Act 1994	Dredging or reclamation	Provide the Minister for Primary Industries 28 days' notice of planned dredging or reclamation work.	S199	Yes
Fisheries Management Act 1994	Mangroves, seagrasses and marine vegetation	Do not harm any mangroves, seagrasses or other marine vegetation on public water land protected by the regulations without a permit.	S205	No
Fisheries Management Act 1994	Fish passage	Do not block fish passage without a permit	S219	No
Environment Protection and Biodiversity Conservation Act 1999 (Cth)	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.		NA
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
Protection of the Environment Operations Act 1997	Waste and transportation	Do not undertake a scheduled waste activity unless in accordance with an environment protection licence. A licence must be obtained when construction and demolition wastes are applied to land under certain circumstances. This includes the reincorporation of crushed road base material	Part 3.2 Schedule 1	Yes

Legislation	Activity/aspect	Requirement	Reference	Division 5.2 Applicability
		back into roads and the placing of excess fill material onto properties. A licence is not required if the material: □ Is VENM. □ Does not exceed 200 tonnes in the Sydney, Newcastle and Wollongong areas, or 20,000 tonnes outside these areas. □ Is covered by a "general exemption". Current exempted materials are ENM, recycled aggregates and raw mulch. These exemptions are conditional and require some chemical testing of materials before they are placed onto land. A licence must be obtained if more than 2,500 tonnes (or cubic metres) is stored on a stockpile site at any one time, or more than 30,000 tonnes of waste is received per year from off site.		
		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.	Regulation cl.49	Yes
		Comply with record keeping requirements in relation to the transport of certain types of waste.	Regulation Part 3	Yes
Environmentally Hazardous Chemicals Act 1985	Orders relating to chemical waste	A person who, in contravention of a chemical control order, carries on a prescribed activity in relation to a chemical or a declared chemical waste is guilty of an offence against this Act	S26	Yes

Legislation	Activity/aspect	Requirement	Reference	Division 5.2 Applicability
Energy Efficiency Opportunities Act 2006 (EEO Act)	Energy efficiency	Reporting about Energy Efficiency Opportunities Assessments	Part 7	Yes
Waste Avoidance and Resource Recovery Act 2001 (WARR Act)	Industry waste reduction	Compliance with implementation and operation of extended producer responsibilities schemes as directed by the regulations.	Part 4	Yes
Heritage				
Heritage Act 1977	Heritage	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 OEH (Heritage Division).	S56-57	Yes
		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
		Notify OEH (Heritage Division) on discovery of a relic	S146	Yes
National Parks and Wildlife Act 1974	Aboriginal places and objects	Do not harm or desecrate an Aboriginal object or Aboriginal place without consent.	S90	No
		Notify the NPWS within reasonable time of becoming aware of the location or discovery of certain Aboriginal objects.	S89A	Yes
Aboriginal and Torres Strait Islander Heritage Protection Act 1984 (Cth)	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
Environment Protection Biodiversity Conservation	Management of World and	The management and protection of listed World and National Heritage Sites.	Part 15	No

Legislation	Activity/aspect	Requirement	Reference	Division 5.2 Applicability
Act 1999 (EPBC Act) (Commonwealth)	National Heritage Sites			
Coroners Act 2009	Reporting of Deaths	This section applies to any person who has reasonable grounds to believe that a death or suspected death of another person is a reportable death or occurred in circumstances that would be examinable under Division 2 of Part 3.2, and has not been reported in accordance with subsection. A person to whom this section applies must report the death or suspected death concerned to a police officer, a coroner or an assistant coroner as soon as possible after becoming aware of the grounds referred to in subsection	S35	Yes
Air Quality				
Protection of the Environment Operations (Clean Air) Regulation 2010 (NSW)	Burning	A person who burns anything in the open or in an incinerator must do so by such practicable means as are necessary to prevent or minimise air pollution. A person who burns anything in the open or in an incinerator must do so by such practicable means as are necessary to prevent or minimise air pollution.	S10 S11	Yes
	Use and maintenance of motor vehicles	Maintenance of vehicles and use of anti-pollution device.	Division 4	Yes

Table A1-2: Licences, Permits and Approvals

Type	Relevant legislation	Required?	Issuing agency
LICENCES			
Environment Protection Licence	Chapter 3 and Schedule 1 *Protection of the Environment Operations Act 1997*	Yes.	EPA
Surface water licence for water extraction (e.g. by pump) from waterways (including a stream or river)	Water Management Act 2000	No. Under Water Regulation 2018 Section 41 as a public authority ARTC is exempt.	NSW Natural Resources Access Regulator (formerly DPI Water)
Groundwater licence for installation and extraction via any type of bore, well, spear point or groundwater interception scheme	Water Management Act 2000	No. Under Water Regulation 2018 Section 41 as a public authority ARTC is exempt.	NSW Natural Resources Access Regulator (formerly DPI Water)
PERMITS			
Temporarily or permanently obstructing fish passage (by e.g. weir, causeway, dam)	Part 7 Fisheries Management Act 1994	No	DPI Fisheries
Harming (e.g. cutting, removing, trimming, pulling up, gathering, shading) marine vegetation (e.g. saltmarsh, mangroves, seagrasses, seaweeds)	Part 7 Fisheries Management Act 1994	No. The project area does not support marine vegetation.	DPI Fisheries
Using explosives or electrical devices in a waterway	Part 2 Fisheries Management Act 1994	No. No explosives or electrical devices will be used in waterways.	DPI Fisheries
Aboriginal Heritage Impact Permit (AHIP)	Section 90D(5), 90C(4 National Parks and Wildlife Act 1974	No.	Heritage NSW
To carry out activities to an item listed on the State Heritage register (SHR) or to which an interim heritage order (IHO) applies.	Section 60 Heritage Act 1977	No.	Heritage NSW
Excavation Permit to disturb or excavate sites not listed on the State Heritage Register	Section 139 Heritage Act 1977	Only in the event an unexpected heritage item is discovered during construction.	Heritage NSW
APPROVALS			
Determination in accordance with sections 5.11, 5.12 and 5.13	*Environmental Planning and Assessment Act 1979* (EP&A Act)	Yes	DPIE

Table A1-3: ARTC TSWD Appendix 04 Requirements for the CEMP[1]

Appendix 04 reference	Requirement	Relevant section of CEMP or supporting documentation
4.1	Must undertake all the obligations arising from the Environmental Documents unless specifically stated otherwise in Schedule 22 of the contract.	The CEMP and Sub-Plans
4.4(a)	ARTC Project Manager will facilitate any engagement in relation to Approvals.	Section 1.4
4.4(d)	The Contractor will be responsible for all engagement relating to the Approvals obtained and managed by the Contractor.	Section 1.3
4.5(a)	ARTC Project Manager will be the primary conduit for any submissions to the Department of Planning, Industry and Environment.	Section 1.4
4.5(b)	The Contractor must provide all submissions in response to obligations of the Planning Approval to the ARTC Project Manager for submission.	Section 1.4
4.5(d)	For all documents developed in response to obligations of the Planning Approval, the Contractor must provide a preliminary draft and a final draft to the ARTC Project Manager for review prior to submission.	Section 1.4
4.5(j)	The Contractor must consult with ARTC Project Manager in regard to any commitments that may result in changes or additions to ARTC's operation and maintenance procedures.	Section 1.7
4.6(a)	Collect issue specific environmental baseline data and undertake issue specific environmental monitoring.	Section 8.2
4.6(b)	Ensure the parameters to be monitored and the frequency of monitoring reflect the requirements of the Planning Approval.	Section 8.3
4.6(e)	Notify the ARTC Project Manager in the event that monitoring results identify a potential impact resulting from the Contractor's Activities and advise of corrective actions.	Chapter 10
4.7(a) (i)	Detail a project specific environmental policy, key performance indicators, objectives and targets.	Chapter 3
4.7(a) (ii)	Identify legislative and other requirements.	Section 3.3
4.7(a) (iii)	Detail procedures to identify project specific environmental risks and appropriate control measures.	Section 3.2.1 Appendix A3
4.7(a) (iv)	Detail resource requirements, roles and responsibilities.	Section 4.1
4.7(a) (v)	Detail communication requirements.	Chapter 6
4.7(a) (vi)	Detail procedures for monitoring and evaluating environmental performance.	Chapter 8 and Chapter 10
4.7(a) (vii)	Detail stockpile management procedures.	Appendix B3: SWMP
4.7(a) (viii)	Detail reporting requirements.	Chapter 9

Appendix 04 reference	Requirement	Relevant section of CEMP or supporting documentation
4.7(a) (ix)	Detail procedures for emergency and incident management.	Chapter 7
4.7(a) (x)	Detail procedures for non-conformance control, corrective and preventative actions.	Chapter 10
4.7(a) (xi)	Detail procedures for audit and review.	Section 8.4 and Chapter 11
4.7(a) (xii)	Detail procedures for the control of environmental records.	Chapter 12
4.7(a) (xiii)	Detail development and maintenance of environmental management sub-plans.	Section 1.4, 1.6 and 1.7
4.7(b)	Prepare issue-specific environmental sub-plans.	Appendix B1-B8
4.7(c)	The Construction Environmental Management Plan and sub-plans must be prepared, approved and implemented prior to commencing any works as required by the NSW Planning Approval.	Section 1.4
4.7(d)	The Construction Environmental Management Plan and sub-plans must be made available for review by the ARTC Project Manager and the Environmental Representative prior to finalisation.	Section 1.4
4.7(e)	The Construction Environmental Management Plan and sub-plans may also require the approval of Department of Planning, Industry and Environment, and other government agencies.	Section 1.4

[1] In accordance with Section 4.7 of ARTC TSWD Appendix 04

Table A1-4: ARTC TSWD Appendix 28 Requirements for the CEMP[1]

App 28 reference	Requirement	Relevant section of CEMP or supporting documentation
28.8 (a)	Must identify how the Contractor will comply with the environmental management requirements of the contract	This document
28.8(c) (ii)	Must contain, as a minimum, the contents specified for the Project Environmental Management Plan in the TSWD.	CEMP and Sub-Plans
28.8(d)	The Contractor must undertake the ongoing development, amendment and updating of the Project Environmental Management Plan.	Section 1.6
28.8(e) (i)	Detail the environmental management team structure	Section 4.1
28.8(e) (ii)	Detail management strategies for environmental compliance and review of the performance of environmental controls.	Chapter 8
28.8(e) (iii)	Detail processes and methodologies for surveillance and monitoring.	Chapter 8
28.8(e) (iv)	Detail processes for incident and emergency response.	Chapter 7
28.8(e) (v)	Detail a schedule of the environmental issues for each part of the Construction Site or Local Area.	Section 3.2.1 Appendix A3 Relevant Sub-Plans
28.8(e) (vi)	Detail processes for the development of environmental work method statements.	Section 3.7
28.8(e) (vii)	Detail processes and methodologies for monitoring, auditing, corrective action and reporting on environmental performance.	Chapter 8 and Chapter 10
28.8(e) (viii)	Detail induction procedures.	Section 5.1.
28.8(e) (ix)	Detail interfaces with other Project Plans.	Section 3.1

[1] In accordance with Section 28.8 of ARTC TSWD Appendix 28

Appendix A2: Environmental Policy, Sustainability Policy and Environmental Performance Standards

Environmental Policy

Fulton Hogan Group Policy June 2022

Protect our planet

We care for the planet, not only for ourselves, but also for future generations. We seek to reduce our impact on the environment and partner with others to lift the standards of our industry.

We will:

- Reduce our carbon emissions
- Minimise our impact on the environmental footprint through innovation and being energy and resource efficient
- Always consider how to reduce, reuse and recycle
- Respect and care for our environment, encompassing diverse aspects including flora, fauna, water, community and cultural interests
- Work with our subcontractors and suppliers to help them meet our expectations
- Consider the environment when we design, plan and deliver our work
- Make proactive use of our environmental management systems
- Set measurable objectives and targets to ensure continual improvement

C W Bruyn
Managing Director

Fulton Hogan

good work

Sustainability Policy

Fulton Hogan Group Policy June 2022

Doing the right thing now and for the long term

As we deliver good work for our customers, we must do our part to address climate change, loss of biodiversity within our environment, and to enhance social outcomes. Our approach to sustainability is consistent with our purpose of creating, connecting, and caring for communities, and our family values.

We will:

People

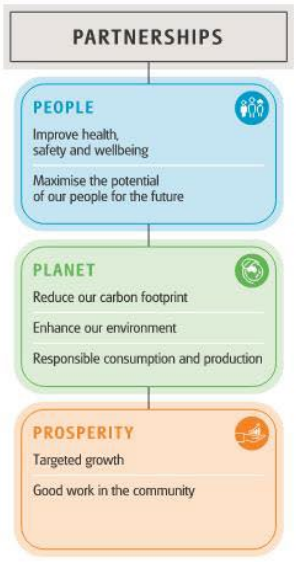
- Always put the health, safety and wellbeing of people first
- Value a performance culture, based on leadership, great people and personal development
- Live our REAL values (Respect, Energy & Effort, Attitude and Leadership) and behaviours to ensure we make sustainable decisions
- Harness and value diversity and inclusion

Planet

- Contribute towards and protect our natural environment
- Reduce our carbon emissions and impact on the environment in which we work and live, always actively seeking ways to minimise our environmental footprint
- Seek out and promote the use of products and services that use sustainable materials and reduce the carbon footprint
- Apply innovation, life-cycle thinking and effective planning to drive sustainable performance

Prosperity

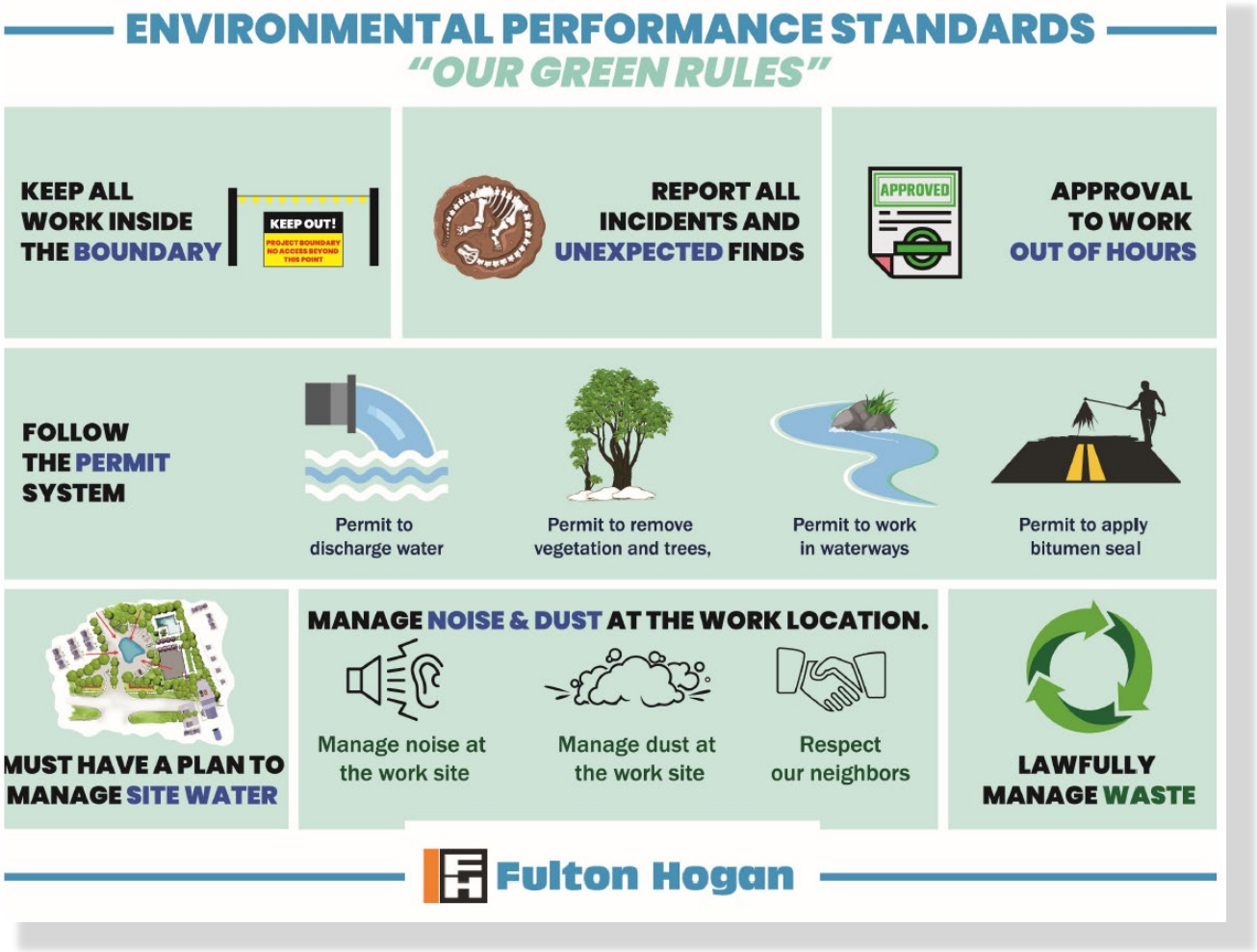
- Provide long term value to our shareholders by building our reputation as a market leading business, whilst continuing to reinvest in the future growth of the company
- Share our sustainability journey with our partners, stakeholders and the broader community
- Through developing an understanding of their key priorities, build long term relationships with our communities and stakeholders
- Give back to the communities we live and work in



C W Bruyn
Managing Director

Fulton Hogan

good work



Appendix A3: Environmental Aspects and Impacts and Risk Assessment Register

The Environmental Aspects and Impacts and Risk Assessment Register has been prepared by Fulton Hogan to supplement the Environmental Risk Analysis conducted as part of the EIS.

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

The risk management process involved an assessment of all specific project activities/ aspects and resulted in the development of a list of environmental risks (effects and impacts). Once these were identified, risk levels were assigned and the appropriate risk mitigation measures allocated from the relevant Sub-Plans. Risk levels were assessed before and after implementation of indicative mitigation measures.

The identification of risks included a review of the proposed works, the CoA, and review of the environmental risks identified by the EIS as amended by the Submissions Report.

The Fulton Hogan HSQE Operational Risk Matrix used to evaluate the risk level for each potential environmental impact is provided below and overleaf, followed by the Environmental Aspects and Impacts and Risk Assessment Register.

HSQE Operational Risk Matrix

To be used during any required risk assessments for all Fulton Hogan activities including: SWMS, CAMs Cases, Aspects & Impacts Assessments, Workplace Risk Assessments, etc.

Step 1 - Assess the potential consequence of the unwanted event (or what **could** have occurred for an incident):

		Potential Consequence				
		Insignificant	**Minor**	**Significant**	**Major**	**Catastrophic**
Risk Type	**Health and Safety**	No treatment required	First Aid Treatment Injury	Medical Treatment Injury (MTI) OR Restricted Work Injury OR Lost Time Injury (LTI) 3 days or less	Lost Time Injury (LTI) 4 days or more OR Hospitalisation	Fatality OR Permanent disability
	Environment	No impact on or off site	On-site impact requiring routine internal remediation	Off-site impact requiring internal remediation OR on-site impact requiring substantial internal remediation	Impact on- or off-site requiring specialist external remediation	Impact on- or off-site with long term effect OR requiring immediate external response
	Quality	Accept as is OR Audit Recommendation	Minor Audit Finding (NCR)	Major Audit Finding (NCR)	Critical Audit Finding (NCR) OR Accreditation warning	Loss of accreditation
	Cost (Remedials, Plant or Property)	Less than $1000	$1,000 to $10,000	$10,000 to $25,000	$25,000 to $100,000	Greater than $100,000
	Community & Reputation	No community complaints	Isolated community complaint	Repeat community complaints OR negative local media	Frequent community complaints OR negative regional media OR Negative Social Media	Organized community opposition OR negative national media OR Viral Negative Social Media
	Regulatory	Notified / no response or Verbal directive	Verbal Warning / No Response Required	Written Warning / Cost Recovery / Response Required / Improvement Notice	Abatement Notice / Infringement Notice / Prohibition Notice	Prosecution / Enforcement Order
	Business Interruption	No interruption to work	Work interrupted	Temporary site closure (less than a day)	Temporary site closure (more than a day)	Permanent site closure or eviction

Step 2- Using the Potential Consequence, decide on the likelihood of occurrence to categorise the incident or hazard risk rating.

Potential Likelihood Level	Potential Consequence Level				
	Insignificant	Minor	Significant	Major	Catastrophic
Almost Certain *The potential consequence is expected to occur in most circumstances*	Med 11	High 16	High 20	Ext 23	Ext 25
Likely *The potential consequence will probably occur in most circumstances*	Med 7	Med 12	High 17	High 21	Ext 24
Possible *The potential consequence is expected to occur at some time*	Low 4	Med 8	Med 13	High 18	High 22
Unlikely *The potential consequence could occur at some time*	Low 2	Low 5	Med 9	Med 14	High 19
Rare *The potential consequence may occur in exceptional circumstances*	Low 1	Low 3	Low 6	Med 10	Med 15

RISK LEVELS	SCORES	PARAMETERS
EXTREME	23 – 25	If the post-control risk is EXTREME the activity **MUST NOT** proceed. Elimination, substitution, isolation and/or engineering controls must be put in place to reduce the risk rating to LOW or MEDIUM
HIGH	16 – 22	If the post-control risk is High the activity **MUST NOT** proceed. Alternate controls must be put in place to reduce the risk rating to LOW or MEDIUM
MEDIUM	7 – 15	The activity can proceed so long as the highest level and most appropriate risk control measures have been identified and implemented
LOW	1 – 6	Activity may proceed with normal supervision after implementing control measures

Table A3-1: Environmental Aspects and Impacts and Risk Assessment Register

ACTIVITY/ ASPECT	HAZARD/SOURCE OF IMPACT	IMPACT	PRE-CONTROL RISK			MITIGATION MEASURES (ID provided under 'Environmental mitigation measures' in the relevant Issue-specific Sub-Plan)	POST-CONTROL RISK		
			CONSEQUENCE	LIKELIHOOD	RISK RATING		CONSEQUENCE	LIKELIHOOD	RISK RATING
Erosion, sedimentation and water quality									
Vegetation clearing and topsoil stripping	Sediment laden runoff from disturbed areas Diesel/fuel spills	Reduced water quality in local waterways due to increased turbidity and sediment loading	**Significant**	**Possible**	**Med 13**	SWMM1 - SWMM47.	**Insignificant**	**Possible**	**Low 4**
		Contamination of surface water by petroleum hydrocarbons	**Minor**	**Possible**	**Med 8**	SWMM53 - SWMM61.	**Minor**	**Unlikely**	**Low 5**
Earthworks	Sediment laden runoff from disturbed areas Diesel/fuel spills Mud tracking Groundwater seepage in excavations	Reduced water quality in local waterways due to increased turbidity and sediment loading	**Major**	**Almost certain**	**High 23**	SWMM1 - SWMM47.	**Significant**	**Possible**	**Med 13**
		Contamination of surface and groundwater by petroleum hydrocarbons or unexpected contaminated land	**Minor**	**Possible**	**Med 8**	SWMM53 - SWMM61, SWMM63, SWMM64.	**Minor**	**Unlikely**	**Low 5**
		Mud tracking on public roads resulting in road safety issues and community complaints	**Major**	**Almost certain**	**High 23**	SWMM27.	**Insignificant**	**Possible**	**Low 4**
		Uncontrolled discharges of potentially acidic groundwater and altered groundwater flows	**Significant**	**Unlikely**	**Med 9**	SWMM67, SWMM68, SWMM69.	**Minor**	**Rare**	**Low 3**
Site access	Overclearing in riparian areas Fines from rock fill Mud tracking Diesel/fuel spills	Reduced water quality in local waterways due to increased turbidity and sediment loading	**Major**	**Almost certain**	**High 23**	SWMM1 - SWMM47.	**Significant**	**Possible**	**Med 13**
		Adverse impact on aquatic ecosystems	**Significant**	**Likely**	**High 17**	SWMM33 – SWMM39.	**Minor**	**Possible**	**Med 8**
		Contamination of surface water by petroleum hydrocarbons	**Minor**	**Possible**	**Med 8**	SWMM53 - SWMM61.	**Minor**	**Unlikely**	**Low 5**
Culvert and drainage works	Sediment laden runoff Diesel/fuel spills Concrete slurry spills Groundwater seepage in excavations	Reduced water quality in local waterways due to increased turbidity and sediment loading	**Major**	**Almost certain**	**High 23**	SWMM1 - SWMM47.	**Significant**	**Possible**	**Med 13**
		Contamination of surface and groundwater by petroleum hydrocarbons	**Minor**	**Possible**	**Med 8**	SWMM53 - SWMM61.	**Minor**	**Unlikely**	**Low 5**
		Contamination of surface water by concrete slurry	**Minor**	**Possible**	**Med 8**	SWMM48 – SWMM52.	**Insignificant**	**Possible**	**Low 4**
		Uncontrolled discharges of potentially acidic groundwater and altered groundwater flows	**Significant**	**Unlikely**	**Med 9**	SWMM67, SWMM68, SWMM69.	**Minor**	**Rare**	**Low 3**
Services/utilities relocation	Sediment laden runoff Diesel/fuel spills Groundwater seepage in excavations	Reduced water quality in local waterways due to increased turbidity and sediment loading	**Major**	**Almost certain**	**High 23**	SWMM1 - SWMM47.	**Significant**	**Possible**	**Med 13**
		Contamination of surface and groundwater by petroleum hydrocarbons	**Minor**	**Possible**	**Med 8**	SWMM53 - SWMM61.	**Minor**	**Unlikely**	**Low 5**
		Uncontrolled discharges of potentially acidic groundwater and altered groundwater flows	**Significant**	**Unlikely**	**Med 9**	SWMM67, SWMM68, SWMM69.	**Minor**	**Rare**	**Low 3**
Materials stockpiling – mulch, topsoil.	Tannin leachate runoff Sediment laden runoff Acidic surface or groundwater Dust	Contamination of surface water by tannins	**Significant**	**Likely**	**High 17**	SWMM29.	**Significant**	**Unlikely**	**Med 9**
		Negative impact on aquatic ecosystems, i.e. habitat degradation, fish kills and weed invasion	**Significant**	**Likely**	**High 17**	SWMM33 – SWMM39.	**Minor**	**Possible**	**Med 8**

ACTIVITY/ ASPECT	HAZARD/SOURCE OF IMPACT	IMPACT	PRE-CONTROL RISK			MITIGATION MEASURES (ID provided under 'Environmental mitigation measures' in the relevant Issue-specific Sub-Plan)	POST-CONTROL RISK		
			CONSEQUENCE	LIKELIHOOD	RISK RATING		CONSEQUENCE	LIKELIHOOD	RISK RATING
		Reduced water quality in local waterways due to increased turbidity and sediment loading from unstabilised stockpiles	**Major**	**Almost certain**	**High 23**	SWMM22, SWMM25, SWMM42.	**Significant**	**Possible**	**Med 13**
Paving activities	Hydrocarbon spills Impact on water quality	Contamination of surface water by petroleum hydrocarbons	**Major**	**Possible**	**High 18**	SWMM53 - SWMM56.	**Minor**	**Unlikely**	**Low 5**
Flora and Fauna									
Earthworks, including vegetation clearing	Sediment laden runoff from disturbed areas Vehicular movements Vegetation clearing occurs outside the clearing limits	Loss of unexpected threatened ecological community/species	**Major**	**Likely**	**High 21**	FFMM3, FFMM4, FFMM5.	**Major**	**Unlikely**	**Med 14**
		Loss of native vegetation/ fauna habitat	**Significant**	**Likely**	**High 17**	FFMM1, FFMM2, FFMM6 – FFMM14.	**Minor**	**Unlikely**	**Low 5**
		Terrestrial fauna mortality / injury	**Significant**	**Likely**	**High 17**	FFMM15.	**Significant**	**Unlikely**	**Med 9**
		Invasion of weeds or spread of pathogens, including Phytophthora, Myrtle Rust and Chytrid fungus.	**Significant**	**Possible**	**Med 13**	FFMM17 - FFMM21.	**Significant**	**Unlikely**	**Med 9**
		Reduced water quality in local waterways and loss of fish	**Major**	**Likely**	**High 21**	FFMM22 - FFMM24.	**Major**	**Unlikely**	**Med 14**
Stockpiling	Sediment laden runoff from disturbed areas Vehicular movements Stockpiling occurs outside allowable areas	Loss of unexpected threatened ecological community/ species	**Major**	**Likely**	**High 21**	FFMM3, FFMM4, FFMM5.	**Major**	**Unlikely**	**Med 14**
		Loss of native vegetation	**Major**	**Possible**	**High 18**	FFMM1, FFMM2, FFMM6 – FFMM14.	**Major**	**Unlikely**	**Med 14**
		Invasion of weeds or spread of pathogens, including Phytophthora, Myrtle Rust and Chytrid fungus.	**Significant**	**Possible**	**Med 13**	FFMM17 - FFMM21.	**Significant**	**Unlikely**	**Med 9**
		Reduced water quality in local waterways and loss of fish	**Major**	**Likely**	**High 21**	FFMM22 - FFMM24.	**Major**	**Unlikely**	**Med 14**
Night works	Light spill	Disturbance to ecologically sensitive areas along Cabramatta Creek, including the Grey-headed flying fox camp.	**Significant**	**Possible**	**Med 13**	FFMM25.	**Significant**	**Unlikely**	**Med 9**
Air quality									
Earthworks, including vegetation clearing, materials processing	Mud tracking Wind erosion Poorly maintained equipment Dust impact on road users	Loss of reusable material, such as top soil and backfill material	**Major**	**Likely**	**High 21**	AQMM1, AQMM2, AQMM3, AQMM10, AQMM11.	**Significant**	**Possible**	**Med 13**
		Mud tracking on public roads resulting in road safety issues and community complaints	**Major**	**Likely**	**High 21**	AQMM1, AQMM2, AQMM7, AQMM9, AQMM10, AQMM11.	**Significant**	**Possible**	**Med 13**
		Amenity impacts to sensitive receivers when dust is deposited on surfaces resulting in community complaints.	**Major**	**Possible**	**High 18**	AQMM1- AQMM11.	**Major**	**Unlikely**	**Med 14**
		Reduced water quality in local waterways when dust is deposited in waterways.	**Major**	**Possible**	**High 18**	AQMM1- AQMM11.	**Major**	**Unlikely**	**Med 14**
		Health and environmental impacts due to poorly maintained equipment	**Minor**	**Possible**	**Med 8**	AQMM12 - AQMM15.	**Minor**	**Unlikely**	**Low 5**
Stockpiling, material loading and material haulage		Mud tracking on public roads resulting in road safety issues and community complaints	**Major**	**Likely**	**High 21**	AQMM1, AQMM2, AQMM7, AQMM9, AQMM10, AQMM11.	**Significant**	**Possible**	**Med 13**

ACTIVITY/ ASPECT	HAZARD/SOURCE OF IMPACT	IMPACT	PRE-CONTROL RISK			MITIGATION MEASURES (ID provided under 'Environmental mitigation measures' in the relevant Issue-specific Sub-Plan)	POST-CONTROL RISK		
			CONSEQUENCE	LIKELIHOOD	RISK RATING		CONSEQUENCE	LIKELIHOOD	RISK RATING
	Mud tracking Wind erosion Poorly maintained equipment	Amenity impacts to sensitive receivers when dust is deposited on surfaces resulting in community complaints.	**Major**	**Possible**	**High 18**	AQMM1- AQMM11.	**Major**	**Unlikely**	**Med 14**
		Reduced water quality in local waterways when dust is deposited in waterways.	**Major**	**Possible**	**High 18**	AQMM1- AQMM11.	**Major**	**Unlikely**	**Med 14**
		Health and environmental impacts due to poorly maintained equipment	**Minor**	**Possible**	**Med 8**	AQMM12 - AQMM15.	**Minor**	**Unlikely**	**Low 5**
Waste and Energy									
Demolition	Demolition waste including structures, pipe work and pavements.	Inappropriate disposal of waste	**Significant**	**Possible**	**Med 13**	WEMM1, WEMM6, WEMM7, WEMM8, WEMM9, WEMM10, WEMM19.	**Significant**	**Unlikely**	**Med 9**
		Greenhouse gas emissions due to consumption of energy from non-renewable resources, such as diesel.	**Insignificant**	**Almost certain**	**Med 11**	WEMM21, WEMM22, WEMM25, WEMM26.	**Insignificant**	**Likely**	**Med 7**
		Cross-contamination of waste	**Significant**	**Likely**	**High 17**	WEMM11, WEMM19.	**Significant**	**Possible**	**Med 13**
Clearing and grubbing	Green waste Garbage in the median	Inappropriate disposal of waste	**Significant**	**Possible**	**Med 13**	WEMM1, WEMM6, WEMM7, WEMM8, WEMM9, WEMM10, WEMM19.	**Significant**	**Unlikely**	**Med 9**
		Waste received on site unlawfully	**Significant**	**Likely**	**High 17**	WEMM3	**Insignificant**	**Likely**	**Med 7**
		Greenhouse gas emissions due to consumption of energy from non-renewable resources, such as diesel.	**Insignificant**	**Almost certain**	**Med 11**	WEMM21, WEMM22, WEMM25, WEMM26.	**Insignificant**	**Likely**	**Med 7**
Site establishment and general construction works, including at ancillary facility sites	Surplus material. Packaging materials from items delivered to the site, such as pallets, crates. General office wastes generated by onsite personnel, such as paper, cardboard, beverage containers and food wastes. Effluent generated at site amenities during construction. Operation of site compounds and lighting.	Inappropriate disposal of waste	**Significant**	**Possible**	**Med 13**	WEMM1, WEMM6, WEMM7, WEMM8, WEMM9, WEMM10, WEMM11, WEMM16, WEMM19, WEMM20.	**Significant**	**Unlikely**	**Med 9**
		Litter	**Minor**	**Likely**	**Med 12**	WEMM2 WEMM11.	**Minor**	**Possible**	**Med 8**
		Excessive packaging on products delivered to site.	**Minor**	**Likely**	**Med 12**	WEMM1, WEMM5.	**Minor**	**Possible**	**Med 8**
		Excessive paper use.	**Minor**	**Likely**	**Med 12**	WEMM1, WEMM 18.	**Minor**	**Unlikely**	**Low 5**
		Paper from office cross-contaminated with food waste.	**Minor**	**Likely**	**Med 12**	WEMM16.	**Minor**	**Unlikely**	**Low 5**
		Over-ordering of materials resulting in waste.	**Minor**	**Likely**	**Med 12**	WEMM4.	**Minor**	**Unlikely**	**Low 5**
		Greenhouse gas emissions due to consumption of energy from non-renewable resources.	**Insignificant**	**Almost certain**	**Med 11**	WEMM21, WEMM23, WEMM24.	**Insignificant**	**Likely**	**Med 7**
		Waste received on site unlawfully	**Significant**	**Likely**	**High 17**	WEMM3	**Insignificant**	**Likely**	**Med 7**
		Cross-contamination of waste	**Significant**	**Likely**	**High 17**	WEMM11, WEMM16, WEMM19.	**Significant**	**Possible**	**Med 13**
Earthworks	Soil and rock, unable to be reused within the Project. Exposure of contaminated soils.	Inappropriate disposal of waste	**Significant**	**Possible**	**Med 13**	WEMM1, WEMM6, WEMM7, WEMM8, WEMM9, WEMM10, WEMM15.	**Significant**	**Unlikely**	**Med 9**
		Inefficient use of available resources.	**Minor**	**Likely**	**Med 12**	WEMM13, WEMM14.	**Minor**	**Unlikely**	**Low 5**
		Greenhouse gas emissions due to consumption of energy from non-renewable resources.	**Insignificant**	**Almost certain**	**Med 11**	WEMM21, WEMM22, WEMM25, WEMM26.	**Insignificant**	**Likely**	**Med 7**

ACTIVITY/ ASPECT	HAZARD/SOURCE OF IMPACT	IMPACT	PRE-CONTROL RISK			MITIGATION MEASURES (ID provided under 'Environmental mitigation measures' in the relevant Issue-specific Sub-Plan)	POST-CONTROL RISK		
			CONSEQUENCE	LIKELIHOOD	RISK RATING		CONSEQUENCE	LIKELIHOOD	RISK RATING
		Waste received on site unlawfully	**Significant**	**Likely**	**High 17**	WEMM3	**Insignificant**	**Likely**	**Med 7**
		Increased greenhouse gas emissions due to the purchase of non-local products/services.	**Insignificant**	**Almost certain**	**Med 11**	WEMM23.	**Insignificant**	**Unlikely**	**Low 2**
		Spread of contaminated waste	**Significant**	**Unlikely**	**Med 9**	WEMM6, WEMM7, WEMM8, WEMM9, WEMM10.	**Significant**	**Rare**	**Low 6**
Plant and vehicle maintenance	Waste fuel, oil and chemical containers.	Inappropriate disposal of waste	**Significant**	**Possible**	**Med 13**	WEMM1, WEMM6, WEMM7, WEMM8, WEMM9, WEMM10, WEMM12, WEMM15, WEMM19.	**Significant**	**Unlikely**	**Med 9**
		Cross-contamination of waste	**Significant**	**Likely**	**High 17**	WEMM11, WEMM12.	**Significant**	**Possible**	**Med 13**
Aboriginal and non-Aboriginal Heritage									
Earthworks (topsoil, new and existing concrete, fill), including vegetation clearing	Ground disturbance, clearing, vibration from plant and equipment, non-adherence to exclusion zones, vehicle movement.	Damage/ impacts to known heritage item/ site	**Significant**	**Likely**	**High 17**	HMM1, HMM3 – HMM8, HMM11, HMM12-HMM16.	**Significant**	**Unlikely**	**Med 9**
		Damage/ impacts to unknown heritage item/ site	**Significant**	**Possible**	**Med 13**	HMM2.	**Significant**	**Unlikely**	**Med 9**
Stockpiling, ancillary facility site/ site compound use, loading and haulage	Ground disturbance, over-clearing, vibration from plant and equipment, non-adherence to exclusion zones, vehicle movement.	Damage/ impacts to known heritage item/ site	**Significant**	**Likely**	**High 17**	HMM1, HMM3 – HMM8, HMM11, HMM12-HMM16.	**Significant**	**Unlikely**	**Med 9**
		Damage/ impacts to unknown heritage item/ site	**Significant**	**Possible**	**Med 13**	HMM2.	**Significant**	**Unlikely**	**Med 9**
Utility adjustments (existing services, electricity, telecommunications, water and sewer, gas, traffic signals)	Ground disturbance, vibration, non-adherence to exclusion zones, vehicle movements	Damage/ impacts to known heritage item/ site	**Significant**	**Likely**	**High 17**	HMM1, HMM3 – HMM8, HMM11, HMM12-HMM16.	**Significant**	**Unlikely**	**Med 9**
		Damage/ impacts to unknown heritage item/ site	**Significant**	**Possible**	**Med 13**	HMM2.	**Significant**	**Unlikely**	**Med 9**
Piers/ piling	Ground disturbance, vibration, non-adherence to exclusion zones, vehicle movements.	Damage/ impacts to known heritage item/ site	**Significant**	**Likely**	**High 17**	HMM1, HMM3 – HMM8, HMM11, HMM12-HMM16.	**Significant**	**Unlikely**	**Med 9**
		Damage/ impacts to unknown heritage item/ site	**Significant**	**Possible**	**Med 13**	HMM2.	**Significant**	**Unlikely**	**Med 9**
Noise and vibration									
Site establishment / landscaping	Noise and vibration generated during site establishment and landscaping	Noise from site establishment and landscaping activities causes disturbance and leads to community complaints	**Major**	**Likely**	**High 21**	NVMM1-NVMM37.	**Major**	**Unlikely**	**Med 14**
		Vibration from excavation or compaction works causes disturbance or damage to structures and leads to community complaints	**Major**	**Possible**	**High 18**	NVMM38-NVMM54.	**Major**	**Unlikely**	**Med 14**
Earthworks	Noise and vibration generated during earthworks	Noise from earthworks causes disturbance and leads to community complaints	**Major**	**Likely**	**High 21**	NVMM1-NVMM37.	**Significant**	**Possible**	**Med 13**
		Vibration from excavation or compaction works causes disturbance or damage to structures and leads to community complaints	**Major**	**Possible**	**High 18**	NVMM38-NVMM54.	**Major**	**Unlikely**	**Med 14**
Utilities / Diversion	Noise and vibration from utilities and diversion works	Noise from works causes disturbance and leads to community complaints	**Major**	**Likely**	**High 21**	NVMM1-NVMM37.	**Significant**	**Possible**	**Med 13**
		Vibration from works causes disturbance or damage to structures and leads to community complaints	**Major**	**Possible**	**High 18**	NVMM38-NVMM54.	**Major**	**Unlikely**	**Med 14**

ACTIVITY/ ASPECT	HAZARD/SOURCE OF IMPACT	IMPACT	PRE-CONTROL RISK			MITIGATION MEASURES (ID provided under 'Environmental mitigation measures' in the relevant Issue-specific Sub-Plan)	POST-CONTROL RISK		
			CONSEQUENCE	LIKELIHOOD	RISK RATING		CONSEQUENCE	LIKELIHOOD	RISK RATING
Paving / roadworks	Noise and vibration from pavement construction	Noise from paving works causes disturbance and leads to community complaints	**Major**	**Likely**	**High 21**	NVMM1-NVMM37.	**Major**	**Unlikely**	**Med 14**
		Vibration from paving works causes disturbance or damage to structures and leads to community complaints	**Major**	**Possible**	**High 18**	NVMM38-NVMM54.	**Major**	**Unlikely**	**Med 14**
Rehabilitation / landscaping	Noise and vibration from rehabilitation / landscaping works	Noise from works causes disturbance and leads to community complaints	**Major**	**Possible**	**High 18**	NVMM1-NVMM37.	**Significant**	**Possible**	**Med 13**
		Vibration from works causes disturbance or damage to structures and leads to community complaints	**Major**	**Possible**	**High 18**	NVMM38-NVMM54.	**Major**	**Unlikely**	**Med 14**
Out of Hours works	Noise outside of standard construction hours and extended hours	Noise from works carried out outside of the standard construction hours, including critical OOHW, results in community complaints	**Major**	**Likely**	**High 21**	OOHMM1-OOHMM33.	**Major**	**Unlikely**	**Med 14**
		Vibration from OOHW results in community complaints	**Major**	**Possible**	**High 18**	OOHMM34-OOHMM53.	**Major**	**Unlikely**	**Med 14**
Bridge works (including piling)	Noise and vibration generated during bridge works	Noise from bridge works causes disturbance and leads to community complaints	**Major**	**Likely**	**High 21**	NVMM1-NVMM37.	**Major**	**Unlikely**	**Med 14**
		Vibration from bridge works causes disturbance or damage to structures and leads to community complaints	**Major**	**Likely**	**High 21**	NVMM38-NVMM54.	**Major**	**Unlikely**	**Med 14**
Stockpiling and other activities associated with the operation of ancillary facilities.	Noise and vibration from plant operations.	Extended operations of noise intensive activities at ancillary activities results in complaints	**Major**	**Likely**	**High 21**	NVMM1-NVMM37.	**Significant**	**Possible**	**Med 13**
		Vibration generated by compaction works or other vibration intensive works results in complaints	**Major**	**Possible**	**High 18**	NVMM38-NVMM54.	**Major**	**Unlikely**	**Med 14**
Traffic and Transport									
All construction activities	Construction vehicles movements, deliveries of construction materials and access restrictions for pedestrians and cyclists	Construction impacts on highway traffic and local roads	**Significant**	**Likely**	**High 17**	Implementation of the Traffic and Transport Management Sub-Plan	**Significant**	**Possible**	**Med 13**
		Construction impacts on pedestrians and cyclists	**Significant**	**Likely**	**High 17**		**Significant**	**Possible**	**Med 13**
Flooding									
Installation of temporary construction ancillary facilities, erosion and sediment controls, or construction hoarding	Interruption of overland flow paths and impacts to existing drainage network	Impacts on flood behaviour and overland flows during construction	**Major**	**Possible**	**High 18**	FMM2, FMM3, FMM4, FMM5.	**Major**	**Unlikely**	**Med 14**
Evacuation process	Failure to safely evacuate/ remove or secure loose material, remove plant and equipment etc.	Potential flooding impacts to the environment and property	**Significant**	**Possible**	**Med 13**	FMM1	**Significant**	**Unlikely**	**Med 9**

Appendix A4: Construction Ancillary Facility Checklist

Construction Ancillary Facility Checklist

Site location:	**Area:**	
Date:	**Date to occupy site:**	**Date to decommission site:**
List activities to be undertaken at the construction ancillary facility:		

Complete the following checklist to determine compliance with the criteria from CoA A20 for additional construction ancillary facility sites not identified by description and location in the EIS:	**Yes/ No**	**Comments** Include any details discussed with other parties
(a) Located within or immediately adjacent to the Construction Boundary		
(b) 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		
(c) 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		
(d) 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.		

*Attach drawings and other supporting information prior to submission to the Environmental Manager for approval.

APPROVAL		
ENVIRONMENTAL MANAGER Name……..	Signature……..	Date……..
Notes/ Comments:		

Appendix A5: Government Agency and Council Consultation Evidence

Correspondence evidence is provided in the following order:

Noise and Vibration Management Sub-Plan (NVMP)

1. *Fairfield City Council*
2. *Liverpool City Council*
3. *EPA*

Soil and Water Management Sub-Plan (SWMP)

1. *DPIE Water Group*
2. *Sydney Water*
3. *Liverpool City Council*
4. *Fairfield City Council*
5. *EPA*

Flood Management Sub-Plan (FMP)

1. *DPIE Water Group*
2. *Sydney Water*
3. *Liverpool City Council*
4. *Fairfield City Council*
5. *NSW SES*

Traffic and Transport Management Sub-Plan (TTMP)

1. *TfNSW*
2. *Liverpool City Council*
3. *Fairfield City Council*
4. *NSW SES*
5. *Public transport/ bus operators*

NVMP

Fairfield City Council

NVMP

Liverpool City Council

NVMP

EPA

SWMP

DPIE Water Group

SWMP

Sydney Water

SWMP

Liverpool City Council

SWMP

Fairfield City Council

SWMP

EPA

FMP

DPIE Water Group

FMP

Sydney Water

FMP

Liverpool City Council

FMP

Fairfield City Council

FMP

NSW SES

TTMP

TfNSW

TTMP

Liverpool City Council

TTMP

Fairfield City Council

TTMP

NSW SES

TTMP

Public transport/ bus operators

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ARTC

INITIAL DESIGN - CABRAMATTA LOOP
32.150km - 33.937km SSFL

ENVIRONMENTAL
SENSITIVE AREA PLANS

LOCATION PLAN
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Ind.Rev. Company	Ind.Rev. Name	Signed
Ind. Review Signed	Ind.Rev. Date	Acceptance Date

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A EN-0001

Sheet No.

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CABRAMATTA LOOP

ENVIRONMENTAL - SENSITIVE AREA PLANS

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DRAWING INDEX

DRAWING	TITLE
GENERAL	
EN-01-0001	COVER SHEET ENVIRONMENTAL SHEET 1 OF 1
EN-01-0011	DRAWING INDEX ENVIRONMENTAL SHEET 1 OF 1
PLANS	
EN-01-1001	SENSITIVE AREA PLANS SHEET 1 OF 9
EN-01-1002	SENSITIVE AREA PLANS SHEET 2 OF 9
EN-01-1003	SENSITIVE AREA PLANS SHEET 3 OF 9
EN-01-1004	SENSITIVE AREA PLANS SHEET 4 OF 9
EN-01-1005	SENSITIVE AREA PLANS SHEET 5 OF 9
EN-01-1006	SENSITIVE AREA PLANS SHEET 6 OF 9
EN-01-1007	SENSITIVE AREA PLANS SHEET 7 OF 9
EN-01-1008	SENSITIVE AREA PLANS SHEET 8 OF 9
EN-01-1009	SENSITIVE AREA PLANS SHEET 9 OF 9

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Checked	R.BYRNE	Date	02.07.21
Ind.Rev. Company		Ind.Rev. Name	
Ind. Review Signed		Ind.Rev. Date	

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Accepted By
Signed
Acceptance Date

ARTC

A EN-0011

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CABRAMATTA LOOP

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LEGEND

- PROPOSED ALIGNMENT
- SITE BOUNDARY
- ADDITIONAL AREAS BOUNDARY
- EIS BOUNDARY
- CADASTRAL BOUNDARY
- ANCILLARY FACILITY SITE
- DUST MONITORING GAUGE LOCATION
- SURFACE WATER MONITORING LOCATION

ABORIGINAL HERITAGE

- HIGH ARCHAEOLOGICAL POTENTIAL
- MODERATE ARCHAEOLOGICAL POTENTIAL
- ABORIGINAL HERITAGE SITE

NON-ABORIGINAL HERITAGE

- NON-ABORIGINAL HISTORICAL ITEM

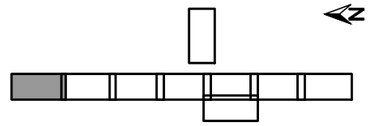
THREATENED ECOLOGICAL COMMUNITIES (TECs)

- RIVER-FLAT EUCALYPT FOREST ON COASTAL FLOODPLAINS OF THE NEW SOUTH WALES NORTH COAST, SYDNEY BASIN AND SOUTH EAST CORNER BIOREGIONS (RIVER-FLAT EUCALYPT FOREST)
  (BC ACT: ENDANGERED; EPBC ACT: CRITICALLY ENDANGERED)
  (PCT835 IN MODERATE CONDITION)
- FRESHWATER WETLANDS ON COASTAL FLOODPLAINS OF THE NEW SOUTH WALES NORTH COAST, SYDNEY BASIN AND SOUTH EAST CORNER BIOREGIONS (FRESHWATER WETLANDS ON COASTAL FLOODPLAINS)
  (BC ACT: ENDANGERED; EPBC ACT: NOT LISTED)
  (PCT1071 IN MODERATE CONDITION)

FLORA AND FAUNA

- HOLLOW-BEARING TREE
- ACACIA PUBESCENS
  (BC ACT: VULNERABLE; EPBC ACT VULNERABLE)
- GREY-HEADED FLYING FOX
  (BC ACT: VULNERABLE; EPBC ACT: VULNERABLE)
- EASTERN FREETAIL-BAT
  (BC ACT: VULNERABLE; EPBC: NOT LISTED)
- GREY-HEADED FLYING FOX ROOST CAMP

KEY PLAN



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Ind.Rev. Company	Ind.Rev. Name	Signed
Ind. Review Signed	Ind.Rev. Date	Acceptance Date

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EN-1001

Sheet No. 1 of 9
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CABRAMATTA LOOP

ENVIRONMENTAL - SENSITIVE AREA PLANS

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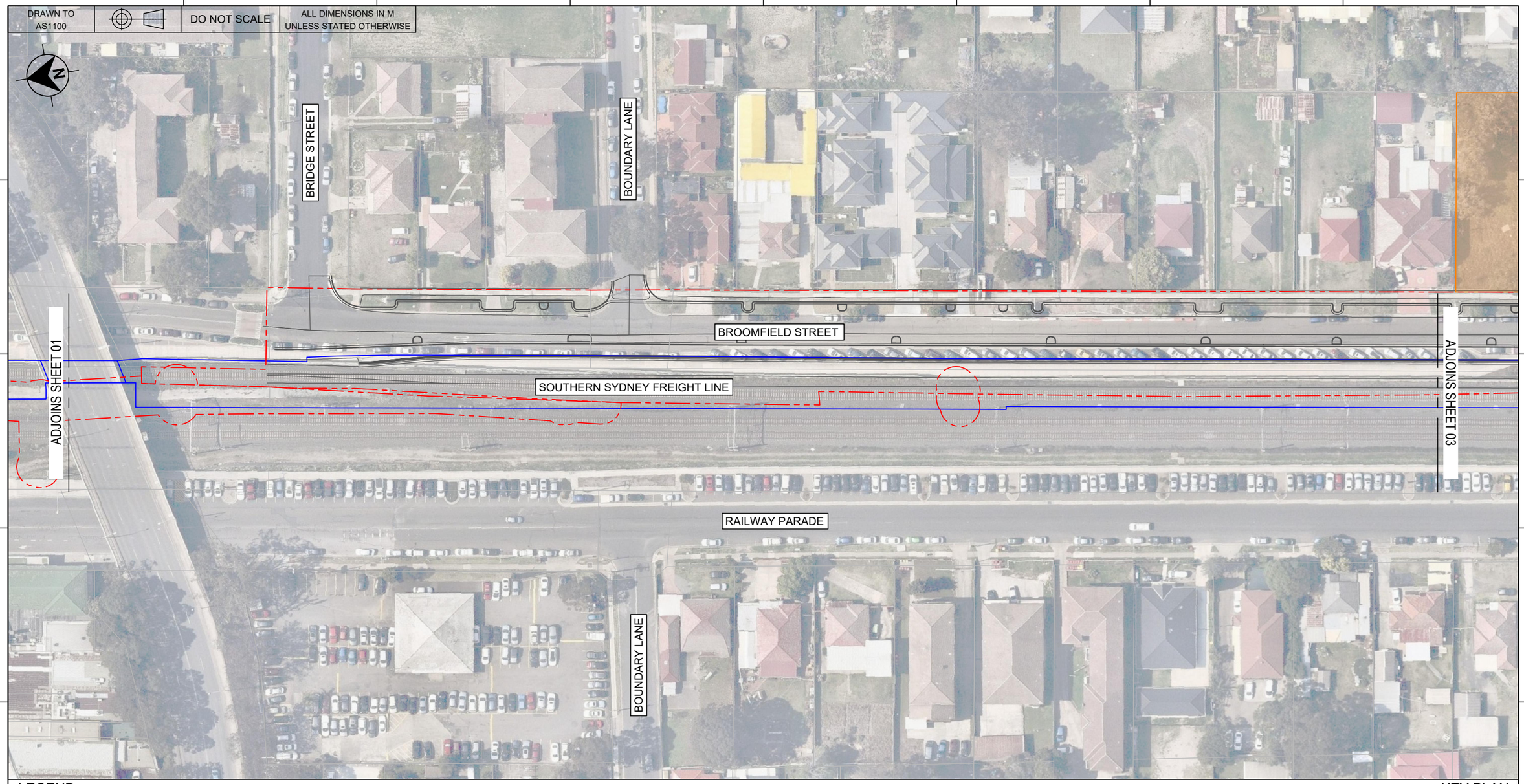

LEGEND

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- EASTERN FREETAIL-BAT (BC ACT: VULNERABLE; EPBC: NOT LISTED)
- GREY-HEADED FLYING FOX ROOST CAMP

KEY PLAN

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CABRAMATTA LOOP

ENVIRONMENTAL - SENSITIVE AREA PLANS

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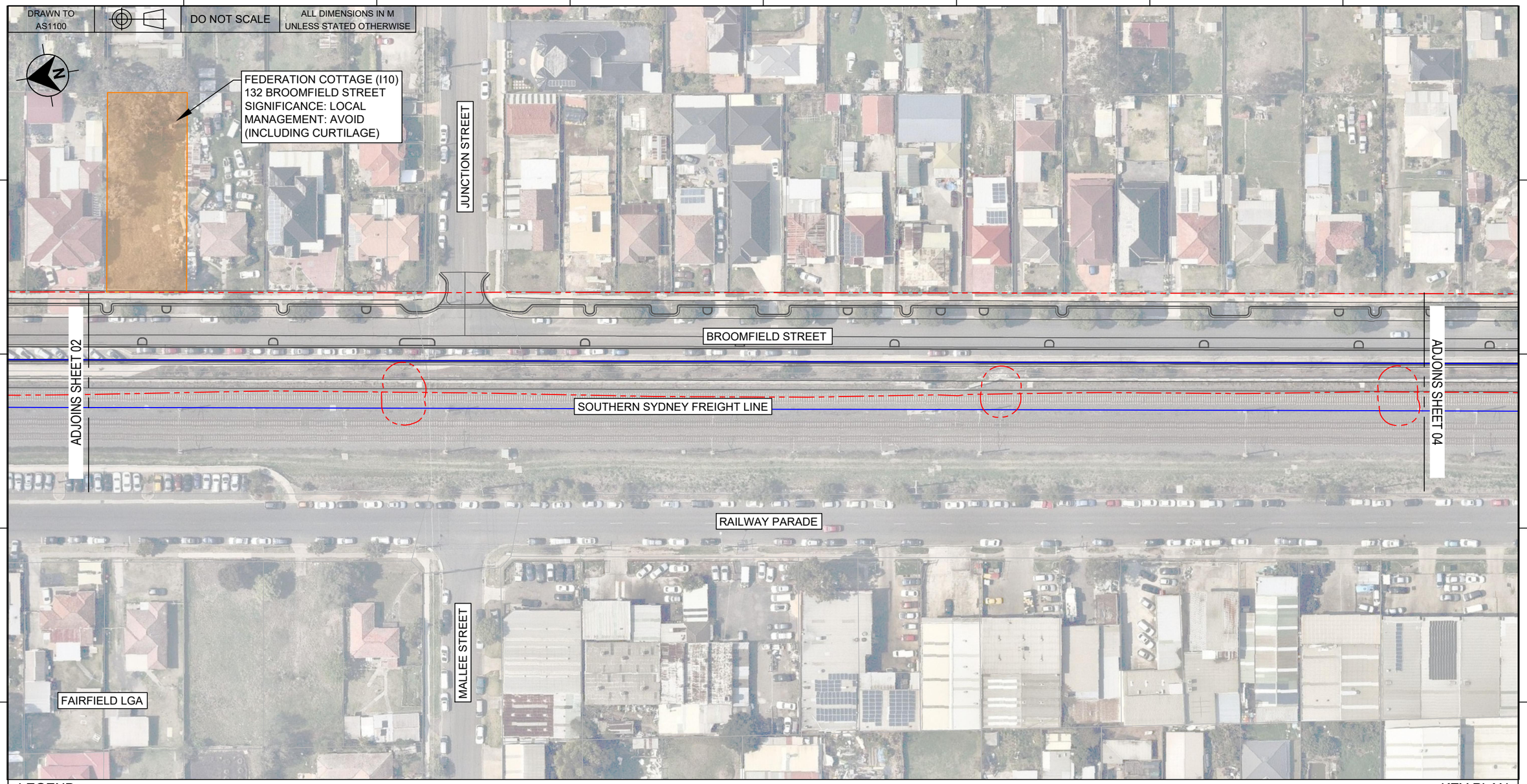

LEGEND

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- MODERATE ARCHAEOLOGICAL POTENTIAL
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- NON-ABORIGINAL HISTORICAL ITEM

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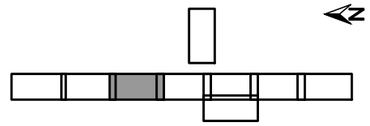
KEY PLAN



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Ind. Review Signed	Ind.Rev. Date	Acceptance Date

ARTC

A | EN-1003 | Sheet No. 3 of 9 | Scale 1:1000 | SHEET SIZE A3

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CABRAMATTA LOOP

ENVIRONMENTAL - SENSITIVE AREA PLANS

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SUSSEX STREET

RAILWAY VIADUCTS AND UNDERBRIDGE (I19)
RAILWAY PARADE AND SUSSEX STREET (CABRAMATTA CREEK)
SIGNIFICANCE: LOCAL
MANAGEMENT: DILAPIDATION SURVEY

SW-2

BROOMFIELD STREET

ADJOINS SHEET 03

SOUTHERN SYDNEY FREIGHT LINE

ADJOINS SHEET 05

RAILWAY PARADE

SW-1

CABRAMATTA CREEK

AHIMS 45-5-3271/CC1
ISOLATED ARTEFACT AND PAD
DEGREE OF HARM: NONE
MANAGEMENT: AVOID

DMG CONTROL APPROX. 300m OFF PAGE

LEGEND

- PROPOSED ALIGNMENT
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  (BC ACT: VULNERABLE; EPBC: NOT LISTED)
- GREY-HEADED FLYING FOX ROOST CAMP

KEY PLAN

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B	12.07.21	ISSUED FOR CONSTRUCTION				
A	14.01.21	ISSUED FOR TENDER				

Designing Company: Fulton Hogan

Designed C.HARRISON	Date 02.07.21	ARTC ACCEPTANCE
Checked R.BYRNE	Date 02.07.21	Accepted By
Ind.Rev. Company	Ind.Rev. Name	Signed
Ind. Review Signed	Ind.Rev. Date	Acceptance Date

ARTC

A
EN-1004

Sheet No. 4 of 9
Scale 1:1000
SHEET SIZE A3

ARTC INITIAL DESIGN - CABRAMATTA LOOP 32.150km - 33.937km ON SSFL

CABRAMATTA LOOP

ENVIRONMENTAL - SENSITIVE AREA PLANS

Plot Date: 12 July 2021 - 9:15 AM Plotted by: HARRISON, Courtney Cad File No: P:\OLD PROJECTS\PD06366 Cabramatta Loop\02 CAD\Sensitive Area Plans\SHEETS\EN-1004.dwg

DRAWN TO AS1100 | DO NOT SCALE | ALL DIMENSIONS IN M UNLESS STATED OTHERWISE

JACQUIE OSMOND RESERVE

AHIMS 45-5-5333/ JACQUIE OSMOND AS1
SUBSURFACE ARTEFACT SCATTER
DEGREE OF HARM: TOTAL
MANAGEMENT: LONG TERM CARE ARRANGEMENTS FOR EXCAVATED ARTEFACTS

THIS HOLLOW-BEARING TREE HAS BEEN ASSESSED TO BE REMOVED/IMPACTED

SOUTHERN SYDNEY FREIGHT LINE

ADJOINS SHEET 04

ADJOINS SHEET 06

ADJOINS SHEET 08

DMG-1

LEGEND

- PROPOSED ALIGNMENT
- SITE BOUNDARY
- ADDITIONAL AREAS BOUNDARY
- EIS BOUNDARY
- CADASTRAL BOUNDARY
- ANCILLARY FACILITY SITE
- DUST MONITORING GAUGE LOCATION
- SURFACE WATER MONITORING LOCATION

ABORIGINAL HERITAGE
- HIGH ARCHAEOLOGICAL POTENTIAL
- MODERATE ARCHAEOLOGICAL POTENTIAL
- ABORIGINAL HERITAGE SITE

NON-ABORIGINAL HERITAGE
- NON-ABORIGINAL HISTORICAL ITEM

THREATENED ECOLOGICAL COMMUNITIES (TECs)
- RIVER-FLAT EUCALYPT FOREST ON COASTAL FLOODPLAINS OF THE NEW SOUTH WALES NORTH COAST, SYDNEY BASIN AND SOUTH EAST CORNER BIOREGIONS (RIVER-FLAT EUCALYPT FOREST) (BC ACT: ENDANGERED; EPBC ACT: CRITICALLY ENDANGERED) (PCT835 IN MODERATE CONDITION)
- FRESHWATER WETLANDS ON COASTAL FLOODPLAINS OF THE NEW SOUTH WALES NORTH COAST, SYDNEY BASIN AND SOUTH EAST CORNER BIOREGIONS (FRESHWATER WETLANDS ON COASTAL FLOODPLAINS) (BC ACT: ENDANGERED; EPBC ACT: NOT LISTED) (PCT1071 IN MODERATE CONDITION)

FLORA AND FAUNA
- HOLLOW-BEARING TREE
- ACACIA PUBESCENS (BC ACT: VULNERABLE; EPBC ACT VULNERABLE)
- GREY-HEADED FLYING FOX (BC ACT: VULNERABLE; EPBC ACT: VULNERABLE)
- EASTERN FREETAIL-BAT (BC ACT: VULNERABLE; EPBC: NOT LISTED)
- GREY-HEADED FLYING FOX ROOST CAMP

KEY PLAN

NOT FOR CONSTRUCTION

Used on / Next higher assembly:

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Filename: EN-1005.dwg

Alternate DMS number:

Rev	Date	Revision Description	Designed	Checked	Ind. Rev.	Approv.
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Ind.Rev. Company		Ind.Rev. Name	
Ind. Review Signed		Ind.Rev. Date	

ARTC ACCEPTANCE
Accepted By
Signed
Acceptance Date

ARTC

A
EN-1005

Sheet No. 5 of 9
Scale 1:1000
SHEET SIZE A3

ARTC INITIAL DESIGN - CABRAMATTA LOOP 32.150km - 33.937km ON SSFL

CABRAMATTA LOOP

ENVIRONMENTAL - SENSITIVE AREA PLANS

Plot Date: 12 July 2021 - 9:14 AM Plotted by: HARRISON, Courtney Cad File No: P:\OLD PROJECTS\PD06366 Cabramatta Loop\02 CAD\Sensitive Area Plans\SHEETS\EN-1005.dwg

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LEGEND

- PROPOSED ALIGNMENT
- SITE BOUNDARY
- ADDITIONAL AREAS BOUNDARY
- EIS BOUNDARY
- CADASTRAL BOUNDARY
- ANCILLARY FACILITY SITE
- DUST MONITORING GAUGE LOCATION
- SURFACE WATER MONITORING LOCATION

ABORIGINAL HERITAGE

- HIGH ARCHAEOLOGICAL POTENTIAL
- MODERATE ARCHAEOLOGICAL POTENTIAL
- ABORIGINAL HERITAGE SITE

NON-ABORIGINAL HERITAGE

- NON-ABORIGINAL HISTORICAL ITEM

THREATENED ECOLOGICAL COMMUNITIES (TECs)

- RIVER-FLAT EUCALYPT FOREST ON COASTAL FLOODPLAINS OF THE NEW SOUTH WALES NORTH COAST, SYDNEY BASIN AND SOUTH EAST CORNER BIOREGIONS (RIVER-FLAT EUCALYPT FOREST)
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FLORA AND FAUNA

- HOLLOW-BEARING TREE
- ACACIA PUBESCENS
  (BC ACT: VULNERABLE; EPBC ACT VULNERABLE)
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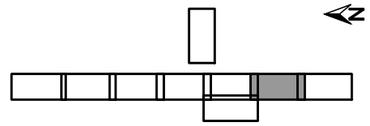
- EASTERN FREETAIL-BAT
  (BC ACT: VULNERABLE; EPBC: NOT LISTED)
- GREY-HEADED FLYING FOX ROOST CAMP

KEY PLAN



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Alternate DMS number:

Rev	Date	Revision Description	Designed	Checked	Ind. Rev.	Approv.
B	12.07.21	ISSUED FOR CONSTRUCTION				
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ARTC ACCEPTANCE: Accepted By | Signed | Acceptance Date

ARTC

A | EN-1006 | Sheet No. 6 of 9 | Scale 1:1000 | SHEET SIZE A3

ARTC INITIAL DESIGN - CABRAMATTA LOOP 32.150km - 33.937km ON SSFL

CABRAMATTA LOOP

ENVIRONMENTAL - SENSITIVE AREA PLANS

Plot Date: 12 July 2021 - 9:14 AM | Plotted by: HARRISON, Courtney | Cad File No: P:\OLD PROJECTS\PD06366 Cabramatta Loop\02 CAD\Sensitive Area Plans\SHEETS\EN-1006.dwg

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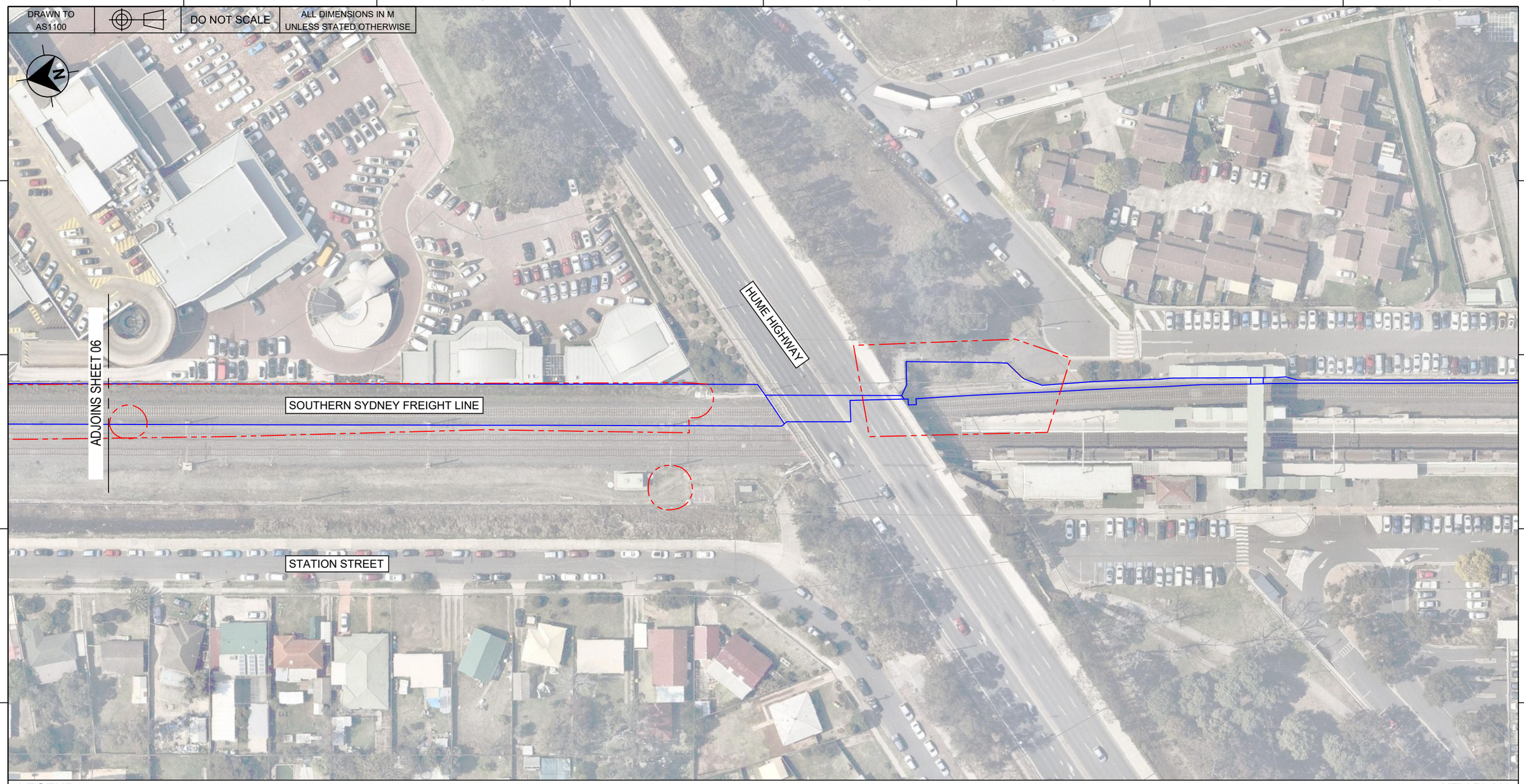

LEGEND

- PROPOSED ALIGNMENT
- SITE BOUNDARY
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ABORIGINAL HERITAGE

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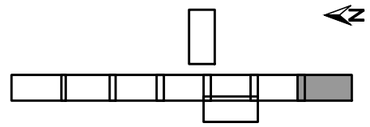
- GREY-HEADED FLYING FOX ROOST CAMP

KEY PLAN



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Alternate DMS number:

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ARTC

A
EN-1007

Sheet No. 7 of 9
Scale 1:1000
SHEET SIZE A3

ARTC INITIAL DESIGN - CABRAMATTA LOOP 32.150km - 33.937km ON SSFL

CABRAMATTA LOOP

ENVIRONMENTAL - SENSITIVE AREA PLANS

Plot Date: 12 July 2021 - 9:13 AM Plotted by: HARRISON, Courtney Cad File No: P:\OLD PROJECTS\PD06366 Cabramatta Loop\02 CAD\Sensitive Area Plans\SHEETS\EN-1007.dwg

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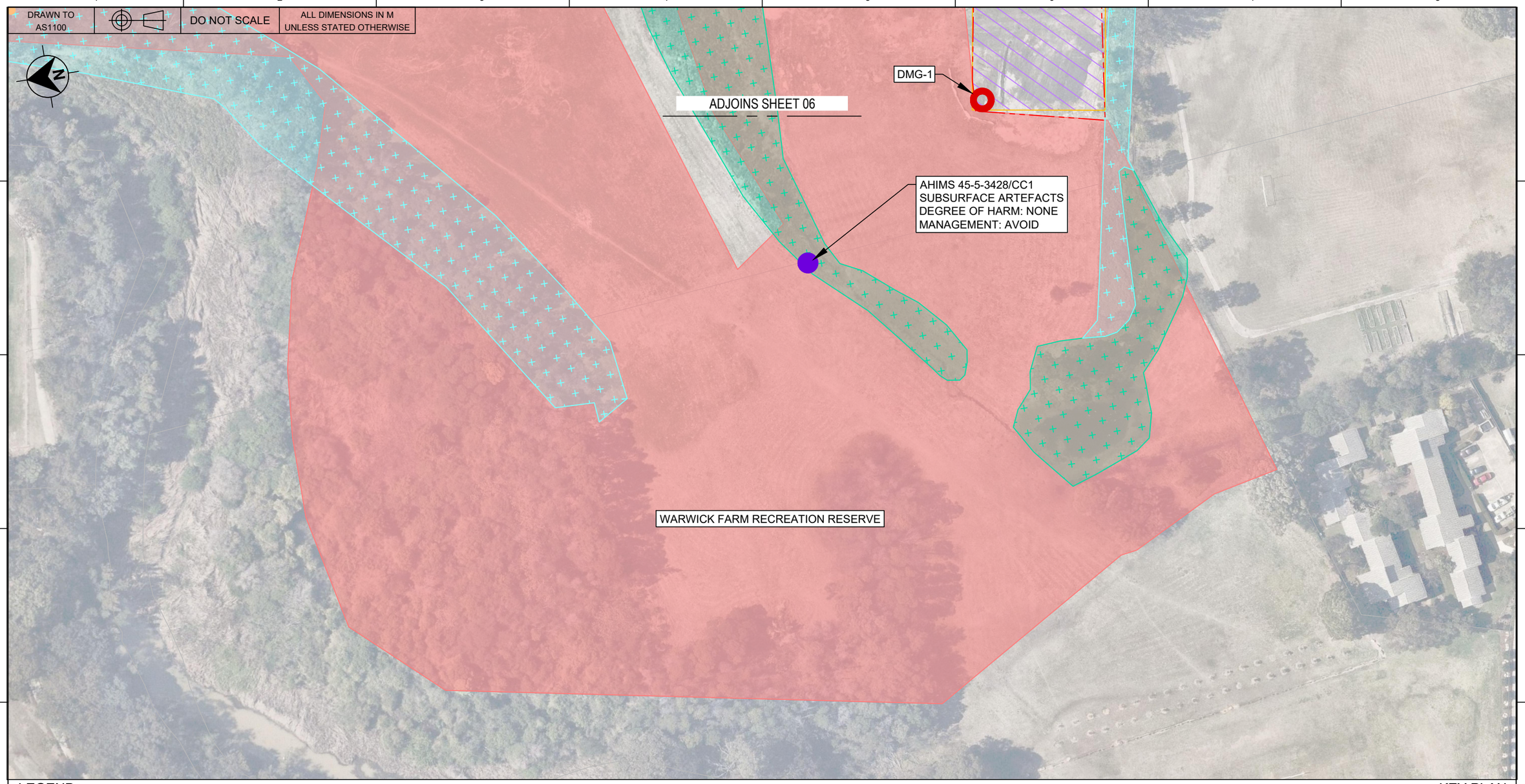

LEGEND

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  (BC ACT: VULNERABLE; EPBC: NOT LISTED)
- GREY-HEADED FLYING FOX ROOST CAMP

KEY PLAN

NOT FOR CONSTRUCTION

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Filename: EN-1008.dwg

Alternate DMS number:

Rev	Date	Revision Description	Designed	Checked	Ind. Rev.	Approv.
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ARTC

A | EN-1008 | Sheet No. 8 of 9 | Scale 1:1000 | SHEET SIZE A3

ARTC INITIAL DESIGN - CABRAMATTA LOOP 32.150km - 33.937km ON SSFL

CABRAMATTA LOOP

ENVIRONMENTAL - SENSITIVE AREA PLANS

Plot Date: 12 July 2021 - 9:13 AM | Plotted by: HARRISON, Courtney | Cad File No: P:\OLD PROJECTS\PD06366 Cabramatta Loop\02 CAD\Sensitive Area Plans\SHEETS\EN-1008.dwg

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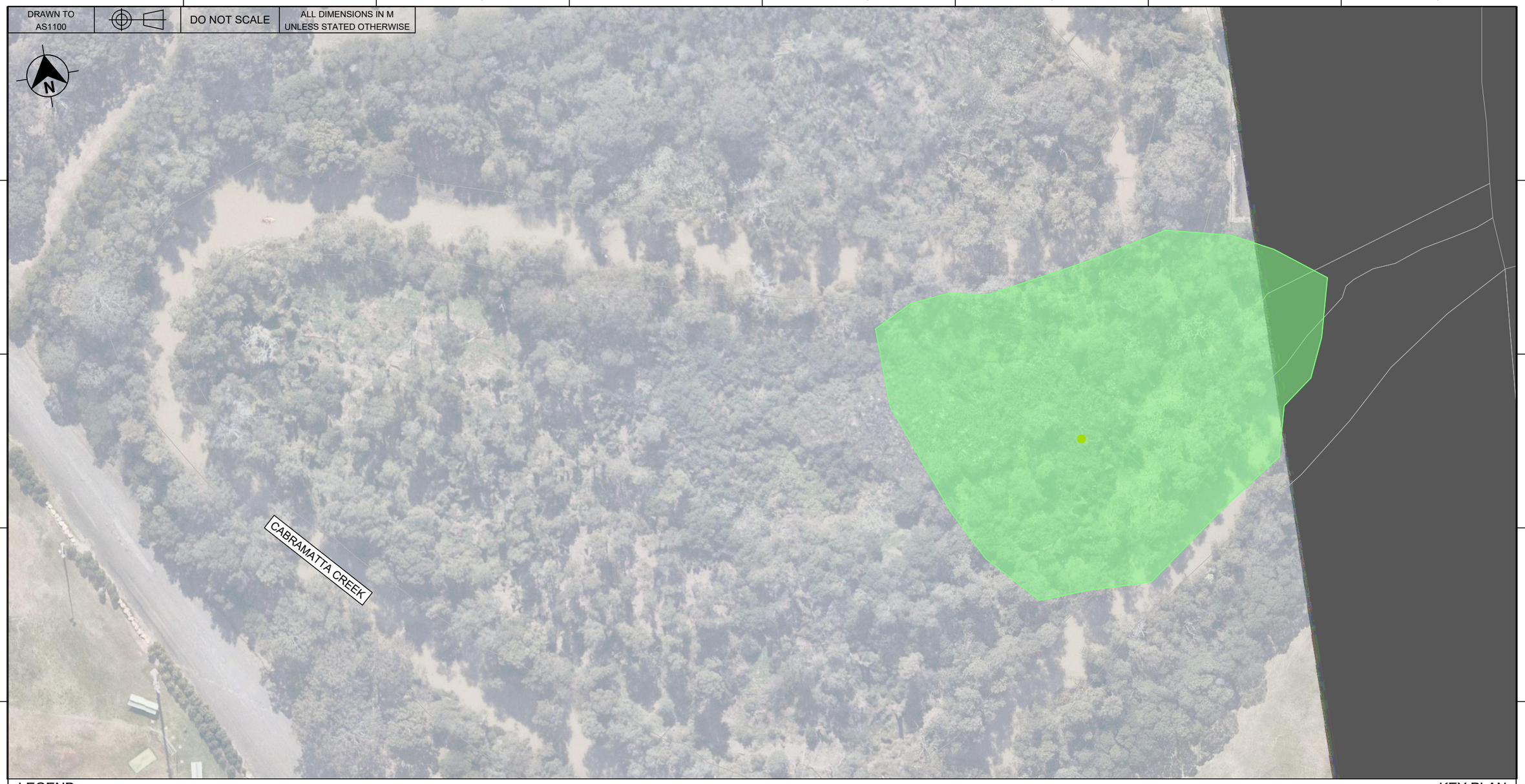

LEGEND

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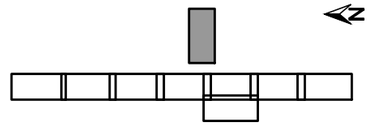
KEY PLAN



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Alternate DMS number:

Rev	Date	Revision Description	Designed	Checked	Ind. Rev.	Approv.
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ARTC

A EN-1009

Sheet No. 9 of 9 | SHEET SIZE A3 | Scale 1:1000

ARTC INITIAL DESIGN - CABRAMATTA LOOP 32.150km - 33.937km ON SSFL

CABRAMATTA LOOP

ENVIRONMENTAL - SENSITIVE AREA PLANS

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