Construction Environment Management Plan

Sydney Metro Western Sydney Airport Station Boxes and Tunnelling Works

Project number	
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Document approval

Rev	Date	Prepared by	Reviewed by	Approved by	Remarks
00	4/05/2022	D. Corish	M. Billings	T. Burns	For review. Update from approved PCEMP to final CEMP
01	15/092022	D. Corish	E. Kline	E. Kline	Revised in response to Sydney Metro and ER comments
02	29/092022	D. Corish	E. Kline	E. Kline	Revised in response to ER comments
Signature:				EKline	

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Compliance

No.	Requirement	Reference
SSI 10051 Planning Approval*		
A11	The Staging Report must: (a) set out how construction of the whole of the CSSI will be staged, including details of work and other activities to be carried out in each stage and the general timing of when construction of each stage will commence and finish; (b) if staged operation is proposed, set out how the operation of the whole of the CSSI will be staged, including details of each stage and the general timing of when operation of each stage will commence; (c) specify conditions that apply to each stage of construction and operation including how compliance with conditions will be achieved across and between each of the stages of the CSSI; (d) set out mechanisms for managing any cumulative impacts arising from the proposed staging; and (e) for the purposes of informing Conditions C2, C7 and C17, include an assessment of the predicted level of environmental risk and potential level of community concern posed by the construction activities required to construct each stage of the CSSI. With respect to (e) above, the risk assessment must use an appropriate process consistent with AS/NZS ISO 31000: 2018; Risk Management - Guidelines and must be endorsed by the ER. Note: 1. A Staging Report may reflect the staged construction and operation of the project through geographical activities, temporal activities or activity-based staging. 2. The risk matrix must reflect the stages of construction identified in the Staging Report.	Section 2.3
A16	The Proponent may submit any strategies, plans or programs required by this approval on a progressive basis, within each stage of the CSSI. Notes: 1. While any strategy, plan or program may be submitted on a progressive basis, the Proponent will need to ensure that the existing activities on site are covered by suitable strategies, plans or programs at all times; and 2. If the submission of any strategy, plan or program is to be submitted on a progressive basis, then the relevant strategy, plan or program must clearly describe the activities to which the strategy, plan or program applies, the relationship of this activity to any future activities within the stage, and the trigger for updating the strategy, plan or program. 3. The staged submission of strategies, plans or programs may reflect the construction and operation of the project through geographical activities, temporal activities or activity-based staging.	Section 2.3
A21	The use of ancillary facility for construction must not commence until the CEMP required by Condition C1 relevant CEMP Sub-plans required by Condition C5 and relevant Construction Monitoring Programs required by	Section 1.4

No.	Requirement	Reference
	Condition C13 have been approved by the Planning Secretary or endorsed by the ER (whichever is applicable). Note: This condition does not apply to Condition A22 or where the use of an ancillary facility is Low Impact Work or for Low Impact Work.	
C1	Construction Environmental Management Plans (CEMPs) and CEMP Sub-plans must be prepared in accordance with the Construction Environmental Management Framework (CEMF) included in the documents listed in Condition A1 to detail how the performance outcomes, commitments and mitigation measures specified in the documents listed in Condition A1 will be implemented and achieved during construction.	This Plan
C2	With the exception of any CEMPs expressly nominated by the Planning Secretary to be endorsed by the ER, all CEMPs must be submitted to the Planning Secretary for approval. Note: The Planning Secretary will consider the assessment of the predicted level of environmental risk and potential level of community concern required under Condition A11(e) when deciding whether any CEMP's may be endorsed by the ER.	Section 1.4
C3	The CEMP(s) not requiring the Planning Secretary's approval must be submitted to the ER for endorsement 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. That CEMP must obtain the endorsement of the ER as being consistent with the conditions of this approval and all undertakings made in the documents listed in Condition A1.	Section 1.4
C4	Any CEMP to be approved by the Planning Secretary must be endorsed by the ER and then submitted to the Planning Secretary for approval no later than one (1) month before the commencement of construction or where construction is staged no later than one (1) month before the commencement of that stage.	Section 1.4 Not Applicable
Sydney Metro Construction Environmental Management Framework (CEMF)		
3.1(a)	Principal Contractors are required to have a corporate Environmental Management System certified under AS/NZS ISO 14001:2016.	Section 7
3.1(b)	Principal Contractors are required to develop a project based Environment and Sustainability Management System (E&SMS). The E&SMS will: i. Be consistent with the Principal Contractors corporate Environmental Management System and AS/NZS ISO 14001:2016;	Section 7.1
3.1(b) ii	Be supported by a process for identifying and responding to changing legislative or other requirements;	Section 3.2
3.1(b) iii	Include processes for assessing design or construction methodology changes for consistency against the planning approvals;	Section 7.6
3.1(b) iv	Include processes for tracking and reporting performance against sustainability and compliance targets;	Section 7.4.1
3.1(b) v	Include a procedure for the identification and management of project specific environmental risks and appropriate control measures; and	Section 5.1 Section 7.5

No.	Requirement	Reference
3.1(b) vi	Be consistent with the Sydney Metro – Western Sydney Airport Sustainability Plan and the Sydney Metro Environment and Sustainability Statement of Commitment.	Section 7.1
3.1 (c)	All sub-contractors engaged by the Principal Contractor will be required to work under the Principal Contractor's Environment and Sustainability Management System.	Section 7.1
3.4 (c)	Principal Contractors are required to prepare and implement a Construction Environmental Management Plan (CEMP) relevant to the scale and nature of their off-airport scope of works. The CEMP shall comprise of a main CEMP document, issue specific sub plans, activity specific procedures and site based control maps. The CEMP shall illustrate the relationship between other plans required by the contract, in particular those that relate to design management. The CEMP will address the specific requirements of scope of works and address the off-airport environmental requirements.	This Plan Section 1
3.4 (d)	Depending on the scope and scale of the works, Sydney Metro may decide to streamline the CEMP and sub-plan requirements for off-airport works. For example, depending on the risk associated with particular environmental issues it may be appropriate to remove the need for a sub plan, or replace with a procedure as part of the CEMP. The CEMP and sub-plan requirements from this CEMF for each construction stage / contract will be detailed in the Staging Report / Construction (Rail) Plan for the project.	This Plan Section 1
3.4(e)	Environmental documentation prepared for works within the on-airport site will be in accordance with the approved SMWSA on-airport CEMPs.	On-airport works are outside of the scope of this CEMP.
3.4 (f)	The Principal Contractor CEMP will cover the requirements of the relevant planning approval documentation, the conditions of all other permits and licences, the Principal Contractor's corporate EMS, the environmental provisions of the contract documentation and this Construction Environmental Management Framework.	This Plan
3.4 (g)	As a minimum the Principal Contractor CEMP will: i. Include a contract specific environmental policy;	Annexure A
3.4 (g)	ii. Include a description of activities to be undertaken during construction;	Section 2.4
3.4 (g)	iii. For each plan under the CEMP include a matrix of the relevant SSI Conditions of Approval referencing where each requirement is addressed;	This Table and Annexure G
3.4 (g)	iv. For each plan under the CEMP, set objectives and targets, and identify measurable key performance indicators in relation to these;	Section 1.3
3.4 (g)	v. For each role that has environmental accountabilities or responsibilities, including key personnel, provide a tabulated description of the authority and roles of key personnel, lines of responsibility and communication, minimum skill level requirements and their interface with the overall project organisation structure;	Section 4
3.4 (g)	vi. Assign the responsibility for the implementation of the CEMP to the Environment Manager, who will have appropriate experience. The Principal Contractor's Project Director will be accountable for the implementation of the CEMP;	Section 4

No.	Requirement	Reference
3.4 (g)	vii. Identify communication requirements, including liaison with stakeholders and the community;	Section 4 Section 7.7
3.4 (g)	viii. Include induction and training requirements and a summary of the Training Needs Analysis required in Section 3.11(b);	Section 7.8
3.4 (g)	ix. Management strategies for environmental compliance and review of the performance of environmental controls;	Section 7.4 Section 7.13
3.4 (g)	x. Procedures for environmental inspections and monitoring, auditing and review, and reporting on environmental performance including environmental compliance tracking;	Section 5.6 Section 7.4.1 Section 7.4.2 Section 7.13
3.4 (g)	xi. Include an annual schedule for auditing the CEMP and Sub-Plans that is updated at least monthly;	Section 7.13.1
3.4 (g)	xii. Include procedures for emergency and incident management, non-compliance management, and corrective and preventative action; and	Section 7.4.3 Section 7.10 Section 7.11 Annexure B
3.4 (g)	xii. Include procedures for the control of environmental records.	Section 7.12.1
3.4(h)	The Principal Contractor CEMP and associated sub-plans will be reviewed by Sydney Metro prior to any construction works commencing. For off-airport works approved under the CSSI, the independent environmental representative (see Section 3.13) will also review the CEMP.	Section 1.4
3.4 (i)	Where a corresponding systems document exists within the Sydney Metro Integrated Management System, the Principal Contractor's procedures will be required to be consistent with any requirements in those documents.	Annexure B Sub-Plans
3.5(a)	Subject to Section 3.4(b) the Principal Contractors will prepare issue-specific environmental sub plans to the CEMP which address each of the relevant environmental impacts at a particular site or stage of the project. Issue specific sub plans will include as a minimum: i. Spoil management; ii. Groundwater management; iii. Traffic and transport management; iv. Noise and vibration management; v. Heritage management; vi. Flora and fauna management; vii. Visual amenity management; viii. Soil and water management; ix. Air quality management; and x. Waste management.	Section 6 Annexure B

No.	Requirement	Reference
	Some of these sub plans may also be informed by other environmental management documents included in the planning approval, for example the Construction Traffic Management Framework or Construction Noise and Vibration Standard.	
3.5 (b)	Additional detail on the minimum requirements for these sub plans is provided in Sections 6 to14 of this CEMF.	Noted.
3.6 (a)	The Principal Contractor will prepare and implement activity specific environmental procedures. These procedures should supplement environmental management sub plans, but may substitute for sub plans in agreement with Sydney Metro if a reasonable risk based justification can be made and the sub plan is not a requirement of any approval.	Annexure B
3.6 (b)	The procedures will include: i. A breakdown of the work tasks relevant to the specific activity and indicate responsibility for each task; ii. Potential impacts associated with each task; iii. A risk rating for each of the identified potential impacts; iv. Mitigation measures relevant to each of the work tasks; and v. Responsibility to ensure the implementation of the mitigation measures.	Section 6.6.2 Annexure B Annexure E
3.6 (c)	The Principal Contractor will prepare and implement site based, progressive Environmental Control Maps (ECMs) which as a minimum: i. Depicting the current representation of the site; ii. Indicate which environmental procedures, environmental approvals, or licences are applicable; iii. Illustrate the site, showing significant structures, work areas and boundaries; iv. Illustrate the environmental control measures and environmentally sensitive receivers; v. Is endorsed by the Principal Contractors Environmental Manager or delegate; vi. Include all the training and competency requirements for relevant workers; and. vii. Be communicated to relevant workers, including sign off the appropriate procedures prior to commencing works on the specific site and / or activity.	Section 5.2 It is noted that ECMs are referred to as Site Environmental Plans (SEPs) in this CEMP.
3.7 (a)	Where the requirement for an additional environmental assessment is identified, this will be undertaken prior to undertaking any construction activities. The environmental assessment will include: i. A description of the existing surrounding environment; ii. Details of the ancillary works and construction activities required to be carried out including the hours of works; iii. An assessment of the environmental impacts of the works, including, but not necessarily limited to, traffic, noise and vibration, air quality, soil and water, ecology and heritage;	Section 7.12.3

<table>
<tr><th>No.</th><th>Requirement</th><th>Reference</th></tr>
<tr><td></td><td>iv. Details of mitigation measures and monitoring specific to the works that would be implemented to minimise environmental impacts; and

v. Identification of the timing for completion of the construction works, and how the sites would be reinstated (including any necessary rehabilitation).</td><td></td></tr>
<tr><td>3.8 (a)</td><td>A cumulative construction impacts management plan would be developed. The plan would detail co-ordination and consultation requirements with the following stakeholders (as relevant) would occur where required to manage the interface of projects under construction at the same time:

i. Western Sydney Airport

ii. Transport for NSW

iii. Department of Planning, Industry and Environment

iv. Western Parkland City Authority (and their contractors)

v. Emergency service providers

vi. Utility providers</td><td>Sydney Metro Cumulative Construction Impacts Management Plan

Section 6.11</td></tr>
<tr><td>3.8 (b)</td><td>Co-ordination and consultation requirements with these stakeholders would be detailed in the plan to include:

i. provision of regular updates to the detailed construction program, construction sites and haul routes

ii. identification of key interfaces with other construction projects

iii. Development of mitigation strategies to manage cumulative impacts associated with these interfaces.</td><td>Sydney Metro Cumulative Construction Impacts Management Plan

Section 6.11</td></tr>
<tr><td>3.9 (a)</td><td>Prior to the commencement of construction the Principal Contractors are to offer Pre-construction Building Condition Surveys, in writing, to the owners of buildings where there is a potential for construction activities to cause any damage (regardless of severity). If accepted, the Principal Contractor will produce a comprehensive written and photographic condition report produced by an appropriate professional prior to relevant works commencing.</td><td>Section 6.10</td></tr>
<tr><td>3.9 (b)</td><td>Prior to the commencement of construction the Principal Contractor will prepare a Road Dilapidation Report for all local public roads proposed to be used by heavy vehicles. Dilapidation reports are to include other road infrastructure such as signs, curbs, applicable driveways and pedestrian paths.</td><td>Section 6.10</td></tr>
<tr><td>3.10 (a)</td><td>Principal Contractors will identify hold points, beyond which approval is required to proceed with a certain activity. Example activities include vegetation removal and water discharge. Hold points will be documented in relevant CEMPs.</td><td>Section 5.4</td></tr>
<tr><td>3.10 (b)</td><td>Table 1.4 provides the structure for the register of hold points as well as a preliminary list of hold points which will be implemented.

<table><tr><th>Hold Point</th><th>Release of Hold Point</th><th>By Who</th></tr><tr><td>Prior to Vegetation Clearing / Ground Disturbance</td><td>Pre-clearing inspection</td><td>Qualified Ecologist</td></tr></table></td><td>Section 5.4</td></tr>
</table>

No.	Requirement			Reference
		Erosion and sediment control plan	Contractor's Environmental Manager or delegate	
	Discharge of water	Water tested to verify compliance and approval to discharge	Contractor's Environment Manager or delegate	
	Out of hours works	Noise Assessment	Contractor's Environment Manager	
	Use of local roads by heavy vehicles	Road Dilapidation Report	Appropriate Professional nominated by Principal Contractor	
	Construction identified as affecting buildings	Building Condition Survey	Appropriate Professional nominated by Principal Contractor	
3.11 (a)	Principal Contractors are responsible for determining the training needs of their personnel. As a minimum this will include site induction, regular toolbox talks and topic specific environmental training as follows: i. The site induction will be provided to all site personnel and will include, as a minimum: • Training purpose, objectives and key issues; • Contractor's environmental and sustainability policy(s) and key performance indicators; • Due diligence, duty of care and responsibilities; • Relevant conditions of any environmental licence and/or the relevant conditions of approval; • Site specific issues and controls including those described in the environmental procedures; • Reporting procedure(s) for environmental hazards and incidents; and • Communication protocols for interactions with community and stakeholders. ii. Toolbox talks will be held on a regular basis in order to provide a project or site wide update, including any key or recurring environmental issues; and iii. Topic specific environmental training should be based upon, but is not limited to, issue specific sub-plans required under Section 3.5 (a).			Section 7.8
3.11 (b)	Principal Contractors will conduct a Training Needs Analysis which: i. Identifies that all staff are to receive an environmental training; ii. Identifies the competency requirements of staff that hold environmental roles and responsibilities documented within the Construction Environmental Management Plan and sub-plans; iii. Identifies appropriate training courses/events and the frequency of training to achieve and/or maintain these competency requirements; and			Section 7.8

No.	Requirement	Reference
	iv. Implements and document as part of the CEMP a training schedule that plans attendance at environmental training events, provides mechanisms to notify staff of their training requirements, and identifies staff who do not attend scheduled training events or who have overdue training requirements.	
3.12 (a)	Principal Contractors undertaking off-airport work in accordance with an EPL must develop and implement a Pollution Incident Response Management Plan, in accordance with the requirements of the POEO Act. Contractor's emergency and incident response procedures will also be consistent with any relevant Sydney Metro procedures and, for on-airport works, consistent with the environmental incident and emergency management requirements identified in the Western Sydney Airport Site Environmental Management Framework, and will include: i. Categories for environmental emergencies and incidents; ii. Notification protocols for each category of environmental emergency or incident, including notification to Sydney Metro, WSA (where required for on-airport works) and notification to owners / occupiers in the vicinity of the incident. This is to include relevant contact details; iii. Identification of personnel who have the authority to take immediate action to shut down any activity, or to affect any environmental control measure (including as directed by an authorised officer of any regulator or government department); iv. A process for undertaking appropriate levels of investigation for all incidents and the identification, implementation and assessment of corrective and preventative actions; and v. Notification protocols of incidents to relevant regulators and stakeholders including (but not limited to) the EPA, DPIE, the AEO, WSA and DITRDC for incidents that are made by the Contractor or Sydney Metro.	Section 7.10.2.2 Emergency Response Plan (SMWSASBT-CPG-1NL-NL000-SF-PLN-00004) (incorporates Pollution Incident Response Management Plan)
3.12 (b)	The Contractor will make all personnel aware of the plan and their responsibilities.	Section 7.10.2.2 Emergency Response Plan (SMWSASBT-CPG-1NL-NL000-SF-PLN-00004) (incorporates Pollution Incident Response Management Plan)
3.13 (a)	Sydney Metro will engage Independent Environmental Representatives (ERs) as required under the SSI approval for off-airport works to undertake the following, along with any additional roles as required: i. Review, provide comment on and endorse (where required) any relevant environmental documentation to verify it is prepared in accordance with relevant environmental legislation, planning approval conditions, Environment Protection Licences, relevant standards and this CEMF; ii. Monitor and report on the implementation and performance of the above mentioned documentation and other relevant documentation; iii. Provide independent guidance and advice to Sydney Metro and the Contractors in relation to environmental compliance issues and the interpretation of planning approval conditions;	Section 4.4

No.	Requirement	Reference
	iv. Be the principal point of advice for the DPIE in relation to all questions and complaints concerning the environmental performance of the project; v. Ensure that environmental auditing is undertaken in accordance with all relevant project requirements; and vi. Recommend reasonable steps, including 'stop works', to be taken to avoid or minimise adverse environmental impacts.	
3.14 (a)	An Airport Environment Officer (AEO) is responsible for the day to day regulatory oversight of compliance with the Airports (Environment Protection) Regulations 1997 (AEPRs) at Western Sydney International and will have a role in relation to the on-airport works for SWMG. The responsibilities of the AEO in relation to on-airport works of SMWSA include: i. Monitoring compliance with the AEPRs ii. Facilitate an understanding of the obligations of the AEPRs iii. Ensure the best possible outcomes are achieved iv. Complete site inspections to review monitoring requirements and completion of works v. Review and comment on incidents and remedial activities vi. Issue an environment protection order in accordance with Part 7 of the AEPR vii. Issue an infringement notice in response to an offence against the AEPR.	On-airport works are outside of the scope of this CEMP.
3.15 (a)	In relation to Roles and Responsibilities the Principal Contractor CEMP will: i. Describe the relationship between the Principal Contractor, Sydney Metro, key regulatory stakeholders, the independent environmental representative and the independent certifier; ii. For each role that has environmental accountabilities or responsibilities, including key personnel, provide a tabulated description of the authority and roles of key personnel, lines of responsibility and communication, minimum skill level requirements and their interface with the overall project organisation structure; iii. Provide details of each specialist environment, sustainability or planning consultant who is employed by the Principal Contractor including the scope of their work; and iv. Provide an overview of the role and responsibilities of the Independent Environmental Representative, the Independent Certifier and other regulatory stakeholders.	Section 4
3.15 (b)	All sub-contractors engaged by the Principal Contractor will be required to operate within the EMS documentation of that Principal Contractor.	Section 5.6
3.16 (a)	Issue specific environmental monitoring will be undertaken as required or as additionally required by any approval, permit or licence conditions	Section 5.5
3.16 (b)	The results of any monitoring undertaken as a requirement of a license or permit that is required to be published will be published on the Principal	Section 7.13.2

No.	Requirement	Reference
	Contractor's, or a project specific, website within 14 days of obtaining the results.	
3.16 (c)	Environmental inspections will include: i. Surveillance of environmental mitigation measures by the Site Foreman; and ii. Periodic inspections by the Principal Contractor's Environmental Manager (or delegate) to verify the adequacy of all environmental mitigation measures. This will be documented in a formal inspection record.	Section 7.4.2
3.16 (d)	The results of any monitoring undertaken as a requirement of a license or permit that is required to be published will be published on the Principal Contractor's, or a project specific, website within 14 days of obtaining the results.	Section 5.5
3.16 (e)	Principal Contractors must undertake internal environmental audits. The scope will include: i. Compliance with any approval, permit or licence conditions; ii. Compliance with the E&SMS, CEMP, SMP, sub-plans and procedures; iii. Community consultation and complaint response; iv. Environmental training records; and v. Environmental monitoring and inspection results.	Section 7.13.1
3.16 (f)	Sydney Metro will also undertake periodic audits of the Principal Contractor's E&SMS and compliance with the environmental aspects of contract documentation, including this CEMF. These audits would cover both on- and off-airport works.	Section 7.13.1
3.16 (g)	Off-airport works approved under the SSI approval will be subjected to audits undertaken by the independent environmental auditor. Independent environmental audits will focus on compliance with the planning approval and the conditions of approval. The independent auditor is approved by DPE and an audit schedule will be developed in consultation with the Principal Contractor and Sydney Metro.	Section 7.13.1
3.16 (h)	On-airport works approved under the Airport Plan, as varied, will be subject to environmental audits and compliance audits, noting unscheduled audits may also be undertaken. The environmental audits would audit the environmental systems and on-site performance of the on-airport works of SMWSA and be undertaken on a 6 monthly basis.	On-airport works are outside of the scope of this CEMP.
3.17 (a)	Principal Contractors will document and detail any non-compliances arising out of the above monitoring, inspections and audits. Sydney Metro will be made aware of all non-compliances in a timely manner.	Section 7.4.3
3.17 (b)	Principal Contractors will develop and implement corrective actions to rectify the non-compliances and preventative actions in order to prevent a re-occurrence of the non-compliance. Contractors will also maintain a register of non-compliances, corrective actions and preventative actions.	Section 7.4.3
3.17 (c)	Sydney Metro may raise non-compliances against environmental requirements. The Environmental Representative and Airport	Section 7.13.1

No.	Requirement	Reference
	Environmental Officer also have the authority to raise a non-compliance for their respective areas of work.	
3.18 (a)	Principal Contractors will maintain appropriate records of the following: i. Site inspections, audits, monitoring, reviews or remedial actions; ii. Documentation as required by performance conditions, approvals, licences and legislation; iii. Modifications to site environmental documentation (e.g. CEMP, sub-plans and procedures); and iv. Other records as required by this Construction Environmental Management Framework.	Section 7.12.1
3.18 (b)	Records must be accessible onsite for the duration of works.	Section 7.12.1
3.18 (c)	Records will be retained by the Principal Contractor for a period of no less than 7 years. Records will be made available in a timely manner to Sydney Metro (or their representative) upon request.	Section 7.12.1
3.18 (d)	Compliance reports detailing the outcome of any environmental surveillance activity including internal and external audits (refer to Section 3.14) will be produced by the Principal Contractors Environmental Manager or delegate. These reports will be submitted to Sydney Metro at an agreed frequency.	Section 7.13.2
3.19 (a)	Principal Contractors will ensure the continual review and improvement of the management systems. This will generally occur in response to: i. Issues raised during environmental surveillance and monitoring; ii. Expanded scope of works; iii. Environmental incidents; and iv. Environmental non-conformances.	Section 7.13
3.19 (b)	A formal review of the management systems by the Principal Contractor's Senior Management Team will also occur on an annual basis, as a minimum. This review shall generate actions for the continual improvement of the systems and supporting management plans.	Section 7.13.3

* Other relevant SSI 10051 Planning Approval Conditions, CEMF requirements and the Revised Environmental Mitigation Measures (REMMs) from Section 7 of the Submissions Report are addressed in Annexure G.

Emergency Contacts

Contact	Phone Number
CPBG	
Construction Director	0400 170 322
General Superintendent	TBA
Environment Manager	0428 781 599
External Stakeholders	
EPA Environment Line	131 555
Liverpool City Council	1300 362 170
Penrith City Council	4732 7777
Ministry of Health	1300 066 055
SafeWork NSW	131 050
Fire and Rescue NSW	1300 729 579
Fire Brigade Service/HAZMAT	000
Sydney Water	13 20 90
Jemena	13 19 09
Endeavour Energy	13 10 03
Sydney Metro	
Sydney Metro Environment Manager	0439 903 906

Definitions

Abbreviation	Expanded text
ACHMP	Approved/updated Aboriginal Cultural Heritage Management Plan
ASS	Acid Sulfate Soils
CAP	Construction Area Plan
CCM	Community Complaints Mediator
CEMF	Sydney Metro Construction Environmental Management Framework
CEMP	Construction Environmental Management Plan
CJM	Customer Journey Management
Condition	Planning Minister's Conditions of Approval
CPBG	CPB Contractors, Ghella Joint Venture
CSSI	Critical State Significant Infrastructure
CTMF	Construction Traffic Management Framework
CTMP	Construction Traffic Management Plan
DNVIS	Detailed Noise and Vibration Impact Statement
DSI	Detailed Site Investigation
DPE	NSW Department of Planning and Environment
ECM	Environmental Control Maps
EIS	Environmental Impact Statement
EMS	Environmental Management System
Environmental aspect	Defined by AS/NZS ISO 14001:2015 as an element of an organisation's activities, products or services that can interact with the environment.
Environmental impact	Defined by AS/NZS ISO 14001:2015 as any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organisation's environmental aspects.
Environmental incident	An occurrence or set of circumstances that causes or threatens to cause material harm and which may or may not be or cause a non-compliance with the terms of the SSI 10051 Planning Approval.
Environmental objective	Defined by AS/NZS ISO 14001:2015 as an overall environmental goal, consistent with the environmental policy, that an organisation sets itself to achieve.
Environmental policy	Statement by an organisation of its intention and principles for environmental performance
Environmental target	Defined by AS/NZS ISO 14001:2015 as a detailed performance requirement, applicable to the organisation or parts thereof, that arises from the environmental objectives and that needs to be set and met in order to achieve those objectives.
EP&A Act	Environmental Planning and Assessment Act 1979 (NSW)
EPA	NSW Environment Protection Authority

Abbreviation	Expanded text
EPL	Environment Protection Licence
ER	Environmental Representative. Suitably qualified and experienced person independent of project design and construction personnel employed for the duration of construction. The principal point of advice in relation to all questions and complaints concerning environmental performance.
ESCP	Erosion and Sediment Control Plan
EWMP	Environmental Work Method Statement
Hold point	Is a verification point that prevents work from commencing prior to approval from Transport for New South Wales Services
IC	Independent Certifier
ICNG	Interim Construction Noise Guideline (NSW (2009))
Minister	Minister of the NSW Department for Planning and Public Spaces
NML	Noise Management Level
Non-compliance	Failure to comply with the requirements of the Infrastructure Approval or any applicable licence, permit or legal requirement
Off-airport	Land not within the boundary of the Western Sydney Airport.
On-airport	Land within the boundary of the Western Sydney Airport
PIRMP	Pollution Incident Response Management Plan
POEO Act	Protection of the Environment Operations Act 1997 (NSW)
Principal, the	Sydney Metro
Project, the	Sydney Metro Western Sydney Airport (including Station Boxes and Tunnelling)
RAP	Remedial Action Plan
REMM	Revised Environmental Mitigation Measure
ROL	Road Occupancy Licence
SBT	Station Boxes and Tunnelling
SEP	Site Environmental Plan
SSI	State Significant Infrastructure
SWMS	Safe Work Method Statement
TBM	Tunnel Boring Machine
TfNSW	Transport for NSW
UST	Underground Storage Tank
WSI	Western Sydney International

1. Introduction

1.1. Purpose and application

This NSW (off-airport) Construction Environmental Management Plan (CEMP, this Plan) is applicable to the Station Boxes and Tunnelling Works (SBT Works) Package of the Sydney Metro Western Sydney Airport (the Project). This Plan describes how the CPB Contractors Ghella Joint Venture (CPBG) will minimise and manage the environmental impacts of the SBT Works in NSW.

This Plan has been prepared to address the requirements of the:

- State Significant Infrastructure (SSI) 10051 Planning Approval (dated 23 July 2021)
- Sydney Metro Western Sydney Airport – CSSI Staging Report (Revision 5.0) (Staging Report)
- *AS/NZS ISO 14001:2016 Environmental Management Systems – Requirements with guidance for use*
- Sydney Metro Construction Environmental Management Framework (CEMF)
- Environmental Impact Statement (EIS) and the Submissions Report, including the Revised Environmental Mitigation Measures (REMMs)
- Contractual requirements, including the SBT Design and Construction Deed and General and Particular Specifications
- Applicable legislation (NSW and Commonwealth).

1.2. CEMP context

To achieve the intended environmental performance outcomes of the Project, CPBG have an established Environmental Management System (EMS) in accordance with the requirements of ISO 14001:2016. Guided by the Environment and Sustainability Policy (Annexure A), the EMS consists of this CEMP, aspect-specific procedures and Sub-Plans as illustrated in (Figure 1). Implementation of the EMS is achieved through tools, checklists and forms as detailed in Section 5.2 of this CEMP.

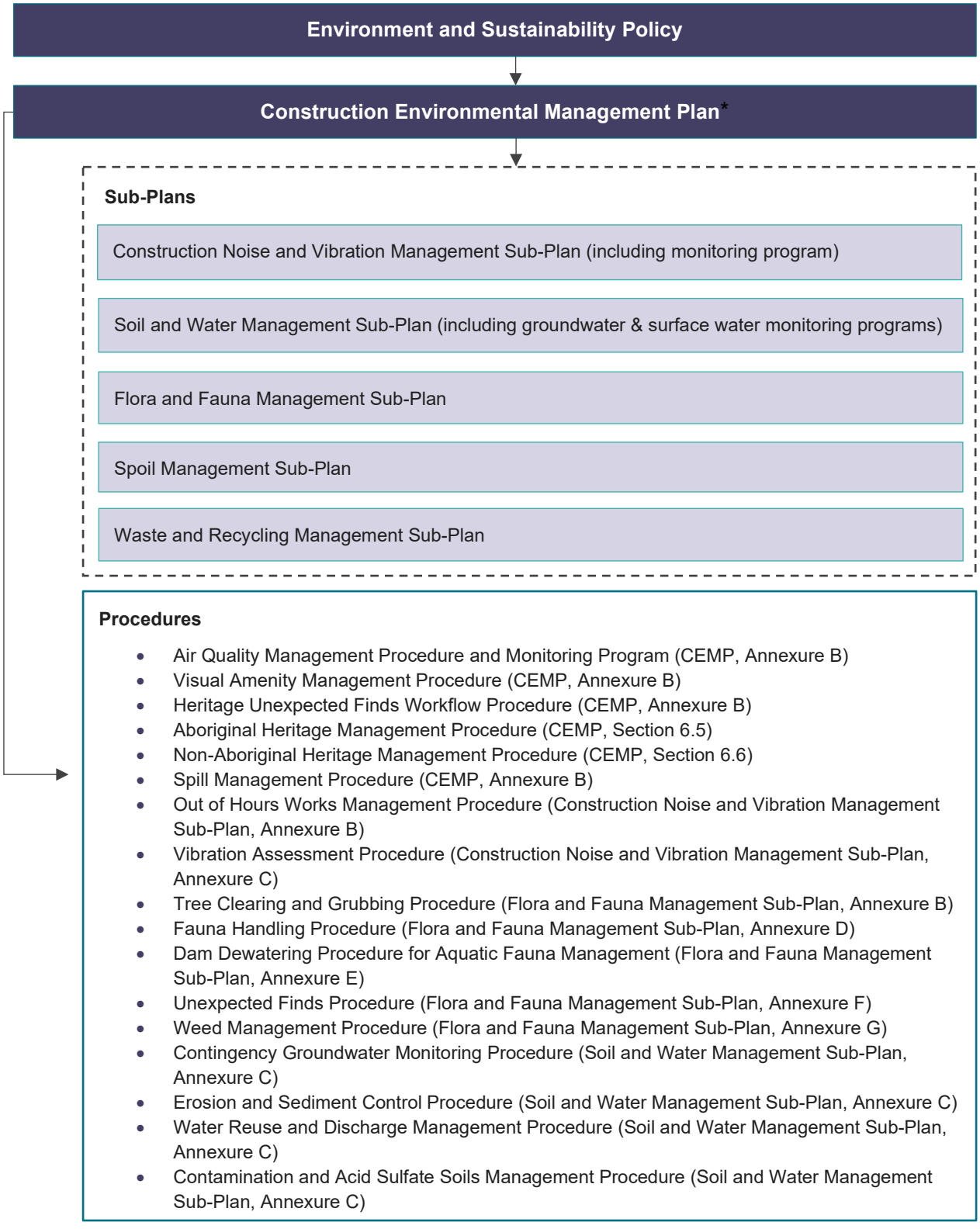


Figure 1: EMS Overview

1.3. Environmental objectives and targets

The key objective of this Plan is to set in place an Environmental Management System (EMS) for the SBT Works which addresses all relevant environmental and planning requirements. Key environmental targets for the SBT Works are:

- Compliance with the SSI 10051 Planning Approval
- Compliance with all permits and licences
- Implementation of the performance outcomes, commitments and mitigation measures specified in Section 7 of the Submissions Report
- Continual improvement through collaboration with Sydney Metro, regulatory agencies and other key stakeholders.

Environmental performance during delivery of the SBT Works will be monitored against the objectives and targets in Table 1.

Table 1: Environmental objectives and targets

Key Performance Indicator	Target	When	How measured
Leading Indicators			
Environmental training	100% of scheduled training completed on time	Prior to relevant activities	Based on environmental risks and the qualifications and experience of the workforce
Completion of environmental inspections	100%	Each month	Inspections of environmental controls are scheduled and completed
Lagging Indicators			
Environmental incidents resulting in a Penalty Infringement Notice or prosecution	Zero	Ongoing	Incident reporting
Number of formal notices (advisory letter, formal warning, show cause)	Zero	At all times	Implementation of the CEMP
Number of deviations from high noise impact management process	Zero	At all times	Implementation of the Noise and Vibration Management Sub-Plan
Area of land cleared or disturbed without authorisation	Zero m^2	At all times	Implementation of the Flora and Fauna Management Sub-Plan
Number of unauthorised discharges	Zero	At all times	Implementation of the Soil and Water Management Sub-Plan

1.4. Consultation and endorsement

Consultation and approval requirements for the CEMP and Sub-Plans are defined within the SSI 10051 Planning Approval and the Staging Report and summarised in Table 2. A detailed consultation report for the Air Quality Management Procedure and Monitoring Program, including matters raised by stakeholders and CPBG responses is provided in Annexure H. The Air Quality Management Procedure and Monitoring Program was updated to address any relevant comments prior to submission to the ER for endorsement.

Each revision of the CEMP and Sub-Plans will also be issued to stakeholders for review, comment, approval and/or information in accordance with Planning Approval Conditions or Staging Report requirements. Where the Staging Report prescribes a procedure in place of a Sub-Plan, the stakeholder consultation requirements detailed in the SSI 10051 Planning Approval are not triggered.

As detailed in Table 2, this Plan will be provided to Sydney Metro, the Environmental Representative (ER) and the Independent Certifier (IC) for review and comment. Upon receipt of any comments, CPBG will either amend the document or provide the justification as to why no change is required.

In accordance with Conditions C2 and C3, this Plan will be submitted to the ER for endorsement. The submission of this Plan to the ER will occur no later than one month before the commencement of the Bulk Excavation and Tunnelling Works. The Bulk Excavation and Tunnelling Works will not commence until this Plan has been endorsed by the ER.

At least seven days before the commencement of the Bulk Excavation and Tunnelling Works, written notification will be provided to the Department of Planning and Environment (DPE) and relevant Councils.

In accordance with Condition B11, a current copy of this CEMP and all Sub-Plans will be accessible via the Project website and compliant with the Web Content Accessibility Guidelines. This CEMP will be implemented for the duration of the SBT Works.

Table 2: CEMP and Sub-Plan consultation and approval requirements

Document	CPBG Internal Review	Sydney Metro Review	Agency/Stakeholder Consultation	ER Review and Endorsement	Planning Secretary Approval	ER Approval of Minor Amendments
CEMP	X	X		X		X
Noise and Vibration Management Sub-Plan (including noise and vibration monitoring program)	X	X	X	X	X	X
Soil and Water Management Sub-Plan	X	X	X	X		X
Groundwater Monitoring Program (Annexure A of the Soil and Water Management Sub-Plan)	X	X	X	X	X	X
Surface Water Quality Monitoring Program (Annexure B of the Soil and Water Management Sub-Plan)	X	X	X	X		X
Flora and Fauna Management Sub-Plan	X	X	X	X		X
Spoil Management Sub-Plan	X	X		X		X
Waste and Recycling Management Sub-Plan	X	X		X		X
Air Quality Management Procedure and Monitoring Program (Annexure B)	X	X	X	X		X

1.5. Plan structure

The structure of this Plan is set out in Table 3.

Table 3: CEMP Structure

Plan Structure	Details
Section 1	Overview of the Project, the SBT Works, staging and approvals process.
Section 2	Scope of the SBT Works and construction methodology.
Section 3	Summary of legislative and approval requirements.
Section 4	Roles and responsibilities of CPBG and our collaborative approach to working with Sydney Metro, the ER, the Independent Certifier and other key stakeholders.
Section 5	Structure of environmental approvals and management documentation.
Section 6	Environmental management strategies and procedures for the SBT Works.
Section 7	Requirements of ISO 14001:2016 to be addressed during the SBT Works.
Annexures	A – Environment Policy B – Environment Procedures C – Indicative Site Layout Plans D - Sensitive Area Plans E – Aspects and Impacts Risk Register F – AMBS St Marys Archaeological Method Statement G – Compliance Tracking H – Consultation Report - Air Quality Management Procedure and Monitoring Program I – Environmental Representative Endorsement

2. Project overview

2.1. Background

The Sydney Metro Western Sydney Airport will become the transport spine for Greater Western Sydney, connecting communities and travellers with the new Western Sydney International (Nancy-Bird Walton) Airport (referred to as Western Sydney International) and the growing region.

The Sydney Metro Western Sydney Airport EIS was prepared in October 2020 to assess the impacts of construction and operation of the Project and was placed on public exhibition between 21 October 2020 and 2 December 2020. The Project was declared a Critical State Significant Infrastructure (CSSI) Project and is listed in Schedule 5 of *State Environmental Planning Policy (State and Regional Development)*.

The Sydney Metro Western Sydney Airport was approved by the Minister for Planning and Public Spaces on 23 July 2021 (SSI 10051) under section 5.19 of the *Environmental Planning and Assessment Act 1997* (EP&A Act).

2.2. Project description

The Project forms part of the broader Sydney Metro network. It involves the construction and operation of a 23km new metro rail line that extends from the existing Sydney Trains suburban T1 Western Line (at St Marys) in the north and the Aerotropolis (at Bringelly) in the south. The alignment includes a combination of tunnels and civil structures, including viaduct, bridges, surface and open-cut troughs between the two tunnel sections (Figure 2).

Figure 2: Project Overview

2.3. Project Staging

2.3.1. Overview

As detailed in the Staging Report, the Project will be delivered through the following stages:

- Advanced and Enabling Works – Site investigations, modification of the existing transport network, power and water supply for construction sites, utility and stormwater diversions and some demolition works.
- SBT Works – delivered through the following sub-stages:
  - Preparatory Works – Including NSW (off-airport) demolition works, site levelling/grading, site access and parking, utility and temporary services works, erection of demountable buildings and noise barriers, tunnelling preparatory works and use of ancillary facilities including onsite parking.
  - Bulk Excavation and Tunnelling Works (the subject of this Plan) – Preparatory Works (works not completed prior to approval of this CEMP), bulk excavation, acoustic shed installation, tunnelling and cross passage installation.
- Surface and Civil Alignment Works – Construction of bridges and viaducts to cross floodplains, watercourses and existing and proposed permanent infrastructure.
- Stations, Systems, Trains, Operations and Maintenance – Station design and fit-out, testing and commissioning, and operation of the Western Sydney Airport metro service
- Finalisation Auxiliary Works.

2.4. unSBT Works Scope

2.4.1. Station Boxes and Tunnelling Works

The SBT Works include the design and construction of:

- Two sections of twin tunnels with a total combined length of approximately 9.8km, including associated portal structures; Orchard Hills to St Marys (off-airport) and Western Sydney International (WSI) airport to the new Aerotropolis Station (off-airport)
- Excavations at either end to enable trains to turn back and stub tunnels to enable future extensions
- Station box excavations with temporary ground support for four stations at St Marys (off-airport), Orchard Hills (off-airport), Airport Terminal (on-airport) and Aerotropolis (off-airport)
- Excavations for two intermediate service facilities, one in each of the tunnel sections at Claremont and Bringelly (both off-airport).

An overview of the SBT Works at each worksite is provided in Table 4 and indicative site layout plans are provided in Annexure C.

Table 4: SBT Works overview

Jurisdiction	Worksite	Indicative scope of works
NSW	St Marys	• Preparatory CEMP scope (not completed prior to approval of this CEMP) • Demolition of existing industrial premises • Offices, amenities, car parking and access roads • Piling and station box excavation using rippers and rock hammers • Stub tunnel excavation using roadheaders • TBM retrieval • Operation of water treatment plant and discharge of water

Jurisdiction	Worksite	Indicative scope of works
NSW	Claremont Meadows	• Preparatory CEMP scope (not completed prior to approval of this CEMP) • Offices, amenities, car parking, and access roads • Piling and services facility shaft excavation using ripper and rock hammers • Construction of part of the cast-in-situ permanent shaft • Cross passage construction support • Invert construction support (pouring of an invert concrete slab in the tunnel) (subject to Sydney Metro approval) • Operation and discharge of tunnel ventilation system • Operation of water treatment plant and discharge of water
NSW	Orchard Hills	• Preparatory CEMP scope (not completed prior to approval of this CEMP) • Demolition of existing buildings and removal of septic tanks • Offices, amenities, car parking, and access roads • Lansdowne Road temporary diversion and construction of the permanent road bridge • Piling and portal, station box and dive excavation using rippers and rock hammers • Construction of cast-in-situ permanent portal structure • TBM assembly, launch and tunnelling support works • Cross passage construction support • Precast segment storage • Operation and discharge of tunnel and acoustic enclosure ventilation system • Operation of water treatment plant and discharge of water
On-Airport	Airport Portal Dive Structure	• Offices, amenities, car parking and access roads • Piling and portal excavation using rippers and rock hammers • Open cut dive excavation using rippers and rock hammers • Construction of cast-in-situ permanent dive structure • TBM assembly, launch and tunnelling support works • Cross passage construction support • Operation of water treatment plant and discharge of water
On-Airport	Airport Terminal and TBM shaft	• Offices, amenities, car parking and access roads • Piling and station box and shaft excavation using rippers and rock hammers • TBM re-launch and tunnelling support works • Cross passage construction support • Operation of water treatment plant and discharge of water
On-Airport	Primary Spoil Receival	• Access road • TBM spoil conveyor set up • Earthworks in accordance with Sydney Metro Specifications
NSW	Bringelly	• Preparatory CEMP scope (not completed prior to approval of this CEMP) • Offices, amenities, car parking and access roads • Piling and services facility shaft using rippers and rock hammers • Construction of part of the cast-in-situ permanent shaft • Cross passage construction support • Invert construction support (pouring of an invert concrete slab in the tunnel) (subject to Sydney Metro approval) • Operation and discharge of tunnel ventilation system • Operation of water treatment plant and discharge of water
NSW	Aerotropolis	• Preparatory CEMP scope (not completed prior to approval of this CEMP) • Offices, amenities, car parking and access roads • Piling and Station box excavation using rippers and rock hammers • Stub tunnel excavation using roadheaders

Jurisdiction	Worksite	Indicative scope of works
		• TBM retrieval • Operation and discharge of tunnel ventilation system • Operation of water treatment plant and discharge of water

Note: Worksites shown in grey are within the boundary of the Western Sydney International (On-Airport), are regulated under the *Commonwealth Airports Act 1996* and are outside the scope of this Plan.

2.4.2. Construction methodology

The construction methodology for the SBT Works entails:

- Utility works including removal, diversion, protection and connection to SBT worksites
- Local area works including provision of site accesses and some road upgrades
- Site establishment works including:
  - Fencing
  - Installation of environmental mitigation including erosion and sediment controls, noise barriers, and acoustic enclosures
  - Clearing and grubbing of existing vegetation
  - Demolition of existing buildings and structures
  - Site levelling and drainage works
  - Establishment of internal access roads, hardstand areas and onsite parking
  - Erection of demountable buildings including offices and amenities
  - Other ancillary facility works including the erection of sheds, establishment of materials laydown and stockpiling areas and Tunnel Boring Machines (TBMs) support works including spoil conveyors.
- Construction of station, shaft and dive excavations predominately completed by piling and excavators with rippers and hammers. A roadheader will also be used at St Marys and Aerotropolis to complete the stub tunnels
- Four TBMs will be used to construct the mainline tunnels as follows:
  - Two earth pressure balance TBMs will be launched from Orchard Hills tunnel approximately 4.3 km north to St Marys, including traversing the Claremont Shaft, and be retrieved from the St Marys Station Box.
  - Two double shield TBMs will be launched from the Airport Dive and tunnel south, traverse the Airport Terminal Station Box and Shaft, whereupon tunnelling will cease, and the conveyor and backend equipment will be demobilised from the Airport Dive and re-established at Airport Terminal Shaft. The TBMs will recommence tunnelling including traversing the Bringelly Shaft and be retrieved from the Aerotropolis Station Box (a distance of 5.5 km from the Airport Dive, with 2.5 km of the southern tunnels located off-airport within NSW).
  - Cross passages will be constructed using concrete saws and excavators with hammers.

It is anticipated that the shaft and station excavations will be completed in advance of TBM tunnel construction. The TBMs will be delivered via oversize heavy vehicles to Orchard Hills and the Airport Dive site and retrieved from St Marys and Aerotropolis, subject to relevant approvals.

The SBT Works do not include any surface works between the northern and southern tunnel sections, which are to be undertaken by another contractor as part of the Surface and Civil Alignment Works stage.

Tunnelling, including station box, shaft and dive excavation, and associated support activities, will be undertaken 24 hours a day, seven days per week. Utility and local area works which cannot be

completed during standard daytime hours due to Road Occupancy Licence (ROL) requirements or utility authority requirements will also be undertaken outside of standard hours.

Completed sections of the SBT Works, including established construction worksites, will be progressively handed over to Sydney Metro to enable follow-on contractors to commence works.

Changes to the SBT Works scope may be required to facilitate constructability, amenity and staging. This may include but is not limited to refinement of site layouts based on detailed construction planning and safety assessment. For example:

- Relocation of internal access roads to allow for refinements in heavy vehicle/light vehicle movements
- Separation of people and plant
- Alteration to car parking/container and laydown areas to allow for safe working distances
- Movement of portable site offices, workshops and containers for construction staging.

As detailed in Section 7.12.2, any changes to SBT Work scope in Table 4 and/or the site establishment layout plans provided in Annexure C will be provided to the ER for endorsement in accordance with Condition A32(j).

2.5. Minor Ancillary Facilities

During the implementation of this CEMP, there may be circumstances where Minor Ancillary Facilities are required to be installed and operated. Under Condition A22, additional minor ancillary facilities (e.g. lunch sheds, office sheds and portable toilet facilities) can be established where they:

- Are located within or adjacent to the construction boundary
- Have been assessed by the ER to have:

– Minimal amenity impacts to surrounding residences and businesses, after consideration of matters such as compliance with the Interim Construction Noise Guideline (Department of Environment and Climate Change, July 2009) (ICNG), traffic and access impacts, dust and odour impacts, and visual (including light spill) impacts
– Minimal environmental impact with respect to waste management and flooding
– No impacts on biodiversity, soil and water, and heritage items beyond those already approved under other terms of the SSI 10051 Planning Approval.

The ER will review the proposed minor ancillary facilities against the above criteria and make an approval determination.

A separate form may be used for assessment and endorsement of minor ancillary facilities if this requirement is triggered.

2.6. Ancillary Facilities not identified in EIS

Where ancillary facilities are required to facilitate SBT Works, but they have not been identified by description and location in the EIS, the ancillary facilities must be assessed against Condition A17. Specifically:

a. They are located within or immediately adjacent to the construction boundary of the approved project
b. They are not located next to a sensitive receiver (including where an access road is between the facility and the receiver), unless the sensitive receiver landowner and occupier have given written acceptance to the carrying out of the relevant facility in the proposed location
c. They have no impacts on heritage items (including areas of archaeological sensitivity), threatened species, populations or ecological communities beyond the impacts approved under the terms of this approval

d. The establishment and use of the facility can be carried out and managed within the performance outcomes set out in the terms of the SSI 10051 Planning Approval, including in relation to environmental impacts.

Where the proposed ancillary facility complies with Condition A17, this CEMP will be updated to include the ancillary facility. In accordance with Condition C3, the revised CEMP will be submitted to the ER for review and endorsement prior to establishment of the respective ancillary facility.

The current scope of the SBT Works does not include additional ancillary facilities.

2.7. Hours of work

Construction hours are set out in Conditions E38 to E41 and are summarised in Table 5.

Table 5: Construction hours

SSI 10051 Condition	Construction activity	Monday to Friday	Saturday	Sunday and public holidays
E38	Standard construction hours	7.00am to 6.00pm	8.00am to 1.00pm	No work
E39	Highly noise intensive works (+ respite)[1]	8.00am to 6.00pm	8.00am to 1.00pm	No work
E41(a)	Safety and emergency works[2]	During standard hours and outside standard hours		Outside standard hours
E41(b)	Low impact works[3]	During standard hours and outside standard hours		Outside standard hours
E41(c)	Works approved under and EPL or Out-of-Hours Work Protocol	During standard hours and outside standard hours		Outside standard hours
E41(d)	By Prescribed activity including:			
	(i) tunnelling and ancillary support activities (excluding cut and cover tunnelling and surface works not directly supporting tunnelling) are permitted 24 hours a day, seven days a week; or	24 hours 7 days a week		
	(ii) grout batching at the Orchard Hills construction site is permitted 24 hours per day, seven days per week; or	24 hours 7 days a week		
	(iii) delivery of material that is required to be delivered outside of standard construction hours in Condition E38 to directly support tunnelling activities, except between the hours 10:00 pm and 7:00 am to / from the Orchard Hills ancillary facility; or	24 hours 7 days a week. except between the hours 10:00 pm and 7:00 am to / from the Orchard Hills ancillary facility; or		
	(iv) haulage of spoil generated through tunnelling is permitted 24 hours per day, seven days per week except between the hours of 10:00 pm and 7:00 am to / from the Orchard Hills construction site; or	24 hours 7 days a week. except between the hours 10:00 pm and 7:00 am to / from the Orchard Hills ancillary facility; or		
	(v) works within an acoustic enclosure are permitted 24 hours a day, seven days a week where there is no exceedance of noise levels or intermittent vibration levels under Low impact circumstances identified in Condition E41(b), unless otherwise agreed with the Planning Secretary; or	24 hours 7 days a week		
	(vi) tunnel and underground station box fit out works are permitted 24 hours per day, seven days per week.	24 hours 7 days a week		

NOTES:

1. Where highly noise intensive works exceed the applicable Noise Management Level (NML) at the same receiver, they must be undertaken in continuous blocks not exceeding three hours, each with a minimum respite from those works of not less than one hour between each block. The applicable NML for residential receivers is the highly noise affected level of 75dB(A).
2. For the delivery of materials required by the NSW Police Force or other authority for safety reasons or where it is required in an emergency to avoid injury or the loss of life, to avoid damage or loss of property, or to prevent environmental harm.
3. Construction that causes LAeq(15 minute) noise levels no more than 5dB(A) above the Rating Background Level (RBL) at any residence; and/or no more than the 'noise affected' NMLs specified in Table 3 of the ICNG at other sensitive land user(s). Construction that causes continuous/impulsive/intermittent vibration values at the most affected residence, no more than the preferred values for human exposure to vibration, specified in Table 2.2 and Table 2.4 of the AVTG.

Approval from the EPA via the Environment Protection Licence (EPL) will be obtained for out of hours works (OOHW) in accordance with Condition E41(c). Key examples include essential local area and utility works which cannot be performed during standard hours and require a road occupancy licence and/or disruption to services that is minimised by undertaking night works.

OOHW that are not subject to an EPL will be conducted in accordance with the Sydney Metro OOHW Protocol.

3. Key legislative and approval requirements

3.1. Approvals and licences

The approvals and licences as relevant to the SBT Works are detailed in Table 6. In accordance with Condition A2, all necessary licences, permits and approvals required for the SBT Works will be obtained and maintained. No condition of the SSI 10051 Planning Approval removes the obligation to obtain, renew or comply with such necessary licences, permits or approvals except as provided under Section 5.23 of the EP&A Act.

Table 6: Key approval and licencing requirements

Regulatory Authority	Approval/licence required for the SBT Works
DPE	As detailed in Section 2.1, the Sydney Metro Western Sydney Airport was declared a CSSI Project and is listed in Schedule 5 of *State Environmental Planning Policy (State and Regional Development)*. On 23 July 2021, the Project was approved by the Minister for Planning and Public Spaces under section 5.19 of the EP&A Act. The relevant requirements of the SSI 10051 Planning Approval have been incorporated into this Plan.
NSW Environment Protection Authority (EPA)	As the CPBG JV is not incorporated, CPB Contractors Pty Ltd has been nominated by the JV to obtain an EPL for Railway Activities – Railway Infrastructure Construction as defined under Schedule 1 of *the Protection of the Environment Operations Act 1997* (POEO Act). In accordance with Section 5.24 of the EP&A Act, the EPL must be substantially consistent with SSI 10051 Planning Approval. Part 5.7A of the POEO Act requires a Licensee to prepare a Pollution Incident Response Management Plan (PIRMP). The Licensee must also ensure that the PIRMP is kept at the premises to which it relates, is tested in accordance with the regulations and implemented when a pollution incident causes or threatens material harm to the environment. These requirements are integrated into the Emergency Response Plan (SMWSASBT-CPG-1NL-NL000-SF-PLN-00004).
Customer Journey Management (CJM) and other road authorities	In accordance with the *Roads Act 1993*, CPBG will obtain the consent of the appropriate roads authority to erect a structure, carry out work in, on or over a public road, or dig up or disturb the surface of a public road. If the applicant is a public authority, the roads authority must consult with the applicant before deciding whether or not to grant consent or concurrence. Consent requirements as applicable to the SBT Works are detailed in relevant Construction Traffic Management Plans (CTMP).

3.2. Relevant legislation

A register of legal and other requirements that are applicable to the SBT Works is provided in Table 7. This register will be reviewed at regular intervals, such as during management reviews, compliance reviews and audits. Where necessary, changes to the legal requirements register will be communicated to the wider project team, including subcontractors, through toolbox talks, specific training and other methods detailed in Section 7.8 of this Plan.

Throughout the SBT Works, the Environment team will have access to the current versions of legislation, standards and codes through an EnviroLaw subscription or similar.

Table 7: Relevant legislation

Legislation	Key requirements and relevance to the SBT Works
Biosecurity Act 2015	Noxious and priority weeds are to be managed in a way to restrict their dispersal and establishment. Noxious weeds will be managed in accordance with the Flora and Fauna Management Sub-Plan.
Biodiversity Conservation Act 2016	Under the provisions of section 5.23(3) of the EP&A Act, directions, Orders or Notices that could otherwise be issued under Part 11 of the *Biodiversity Conservation Act 2016* cannot be issued for approved CSSI projects. A biodiversity assessment, in the form of a Biodiversity Development Assessment Report (BDAR), was prepared as part of the EIS. Management and mitigation measures as relevant to the SBT Works are detailed in the Flora and Fauna Management Sub-Plan.
Contaminated Land Management Act 1997 (CLM Act)	Contaminated land impacted by the SBT Works must be assessed and managed in accordance with the CLM Act. Relevant requirements and mitigation measures, including reporting obligations, are detailed in the Soil and Water Management Sub-Plan.
Dangerous Goods (Road and Rail Transport) Act 2008	The *Dangerous Goods (Road and Rail Transport) Act 2008* ensures that dangerous goods are transported in a safe manner. Relevant requirements and mitigation measures are detailed in the CTMPs.
Environmental Planning and Assessment Act 1997 (EP&A Act)	The EP&A Act is the primary land use planning statute in NSW. It governs matters such as planning administration, planning instruments, development assessments, building certification, infrastructure finance, appeals and enforcement. The Sydney Metro Western Sydney Airport was approved by the Minister for Planning and Public Spaces on 23 July 2021 (SSI 10051) under section 5.19 of the EP&A Act. Relevant Conditions of SSI 10051 Planning Approval are detailed in Annexure G.
Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)	The EPBC Act provides a legal framework for the protection and management of nationally and internationally important flora, fauna, ecological communities, heritage places and matters of national environmental significance. Relevant assessments against the provisions of the EPBC Act were undertaken as part of the EIS and permit requirements are captured in the Flora and Fauna Management Sub-Plan.
Fisheries Management Act 1994	Under the provisions of section 5.23(1) of the EP&A Act, permits that would otherwise be required under sections 201, 205 and 219 of the *Fisheries Management Act 1994* are not required for approved CSSI projects. Similarly, under the provisions of section 5.23(3) of the EP&A Act, directions, orders or notices that could otherwise be issued under Division 7 of Part 7A of the *Fisheries Management Act 1994* cannot be issued for approved CSSI projects.
Heritage Act 1977	Under the provisions of sections 5.23(1) and 5.23(2) of the EP&A Act, an approval under Part 4, or an excavation permit under section 139 of the *Heritage Act 1997* do not apply to approved CSSI projects. In addition, Division 8 of Part 6 of the *Heritage Act 1977* does not apply to prevent or interfere with the carrying out of approved CSSI projects. Risks to heritage during the SBT Works will be managed in accordance with the Heritage Unexpected Finds Workflow Procedure (Annexure B), Aboriginal Heritage Management Procedure (Section 6.5) and Non-Aboriginal Heritage Management Procedure (Section 6.6).
National Greenhouse and Energy Reporting (NGER) Act 2007 (Cth)	The NGER Act provides data and accounting obligations in relation to greenhouse gas emissions, energy consumption, and energy production. CPB, on behalf of CPBG, will undertake reporting of the SBT Works greenhouse gas emission and energy production and consumption under the NGER Act, inclusive of 'material' subcontractors.

Legislation	Key requirements and relevance to the SBT Works
National Parks and Wildlife Act 1974	Under the provisions of sections 5.23(1) and 5.23(3) of the EP&A Act, permits under section 90 of the *National Parks and Wildlife Act 1974* and orders and directions pursuant to Part 6A are not applicable to approved CSSI projects. In response to identified Aboriginal heritage impacts, management and mitigation measures are detailed in the Heritage Unexpected Finds Workflow Procedure (Annexure B), the Sydney Metro CSSI Aboriginal Cultural Heritage Management Plan (ACHMP) and the Aboriginal Heritage Management Procedure (Section 6.5).
Protection of the Environment Operations Act 1997	The POEO Act is a key piece of environmental protection legislation in NSW. In addition to defining licencing requirements (refer to Table 6), the POEO Act establishes the environmental protection framework for pollution (air, water and land), noise emissions, and waste management. POEO Act obligations and management measures are captured in the Noise and Vibration Management Sub-Plan, the Soil and Water Management Sub-Plan and the Air Quality Management Procedure and Monitoring Program (Section 6.3 and Annexure B). Pollution event notification requirements are detailed in Section 7.10 and 7.11.
Roads Act 1983	The *Roads Act 1983* requires consent to be obtained from the appropriate road authority for the erection of a structure or the carrying out of works in, on or over a public road, or the digging up or the disturbance of the surface of a public road. The requirements of this Act are detailed in relevant CTMPs.
Waste Avoidance and Resource Recovery Act 2001	This Act aims to encourage the most efficient use of resources to reduce environmental harm in accordance with the principles of ecologically sustainable development. Waste avoidance and resource recovery measures are detailed in the Waste and Recycling Management Sub-Plan.
Water Management Act 2000	The objective of this Act is to provide for the sustainable and integrated management of the water sources of the State for the benefit of both present and future generations. Under the provisions of section 5.23(1) of the EP&A Act, relevant requirements of the *Water Management Act 2000* do not apply to approved CSSI projects, including a water use approval (section 89), a work approval (section 90) and an activity approval (section 91). The requirement for an aquifer interference approval is considered in the Soil and Water Management Sub-Plan.

4. People and collaboration

4.1. Collaboration with Sydney Metro, the ER and the CPBG team

Under the leadership of the Approvals, Environment and Sustainability Manager, CPBG will work collaboratively with environmental stakeholders to ensure opportunities to minimise impacts are explored and implemented where reasonable and feasible. CPBG's relationships with Sydney Metro, key regulatory stakeholders, the ER, the Community Complaints Mediator (CCM), and the IC, are shown in Figure 3.

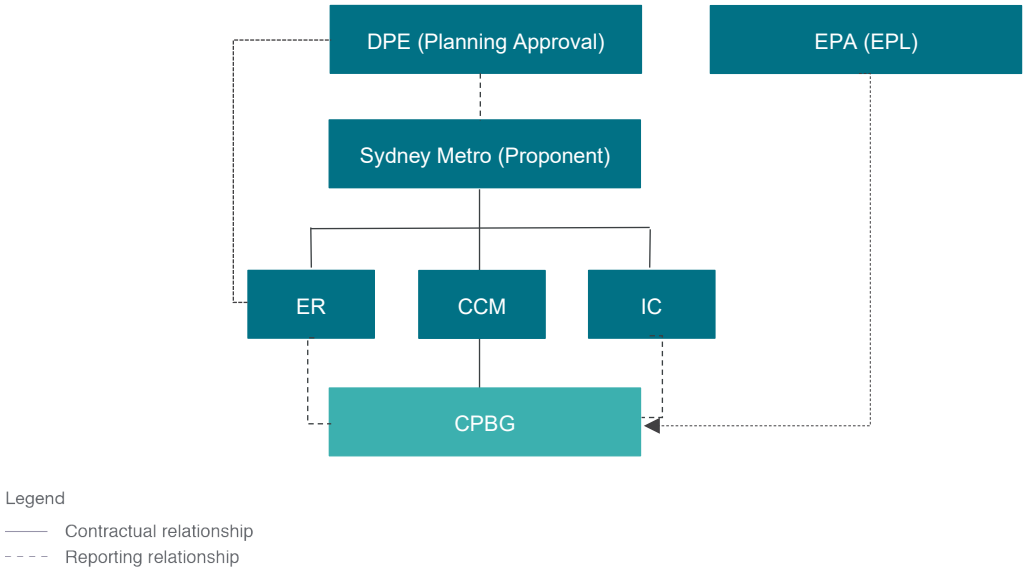


Figure 3: CPBG's relationships with key stakeholders

4.2. CPBG personnel and specialist consultants

4.2.1. CPBG personnel

The authorities and responsibilities of CPBG personnel with respect to approvals and environmental management are shown in Table 8. Minimum skill level requirements of each CPBG role are documented in position descriptions.

Table 8: Role, authority and responsibility of CPBG JV personnel – approvals and environmental management

CPBG role	Authority and responsibility
Project Director	• Manage the delivery of the SBT Works including overseeing the SSI 10051 Planning Approval and environmental management • Hold the authority to direct personnel and/or subcontractors to carry out actions to avoid or minimise unintended environmental impacts • Act as the Contractor's Representative
Support Services Director	• Report to the Project Director • Develop and implement the Project Construction Management Systems, including the EMS • Oversee delivery of SSI 10051 and EPL • Represent the environment and sustainability functions on the Senior Leadership Team • Minimum of five years of experience in similar role on a similar project

CPBG role	Authority and responsibility
Approvals, Environment & Sustainability Manager (Environment Manager)	• Implementation of the requirements of the CEMF • Report to the Support Services Director • Lead the creation of a consultative and proactive culture that ensures environmental compliance as a driver of work behaviours • Be accountable for approvals, environmental and sustainability performance • Effectively lead and manage the development and implementation of a risk-based Environment and Sustainability Management System • Provide specialist environment, planning and sustainability advice to the Project Director and other functional managers to facilitate design and construction • Oversee the environmental management and sustainability induction and training program • Minimum of five years of experience in similar role on a similar project
Commercial Director	• Report to the Project Director • Ensure relevant environment requirements are considered in procuring materials and services
Design Manager	• Report to the Project Director • Ensure relevant environmental and planning requirements are addressed in design development • Provide input to and review consistency of assessments on design changes
Work Health and Safety Director	• Report to the Project Director • Ensure environmental and planning requirements are addressed in relevant safety documents • Ensure collaborative incident management and reporting in the event of safety incidents with a potential to cause environmental impact
HR/IR Manager	• Report to the Project Director • Ensure the provision of appropriate training in environment and sustainability for relevant project personnel in consultation with the Environment Manager
Stakeholder and Community Engagement Manager and delegates	• Report to the Project Director • Assist the Environment Manager in consulting with regulatory agencies • Communicate sustainability initiatives and potential environmental impacts to the surrounding community • Work collaboratively with the Environment Manager to resolve environmental complaints
Construction Directors	• Report to the Project Director • Lead and manage the delivery of the SBT Works in compliance with this Plan • Direct personnel and/or subcontractors to carry out actions to avoid or minimise unintended environmental impacts • Review and approve key environmental management documents relevant to construction of the SBT Works • Ensure sufficient resources are allocated to environmental and sustainability management
Construction Managers and delegates	• Report to the Construction Director • Manage environmental aspects of construction in conjunction with the Environment Manager and Environment Coordinators • Ensure compliance with this Plan and procedures
General Superintendent	• Report to the Construction Managers • Manage environmental aspects of construction in conjunction with the Environment Manager and Environment Coordinators • Direct personnel and/or subcontractors to carry out actions to avoid or minimise unintended environmental impacts

CPBG role	Authority and responsibility
	• Minimum of five years' experience in similar role on a similar project
Site Supervisors	• Report to General Superintendent • Manage environmental aspects of construction in conjunction with the Site Superintendents and Environment Coordinators • Direct personnel and/or subcontractors to carry out actions to avoid or minimise unintended environmental impacts • Stop works and execute Hold Points in accordance with environmental procedures (Annexure B) to prevent environmental harm • Minimum of two years' experience in similar role on a similar project
Project managers, project engineers, site engineers, supervisors	• Report to the Construction Manager • Implement and monitor onsite environmental management and compliance measures across all sites in conjunction with Environment Coordinators • Conduct daily site inspections
Environment Advisor/Coordinator	• Report to the Environment Manager • Assist staff with environmental inquires • Assist in the implementation of site environmental controls • Undertake environmental monitoring, audits, investigations and inspections • Minimum of two years' experience in similar role on a similar project

4.2.2. Specialist consultants

The CPBG team will be supported by the specialist environmental consultants detailed in Table 9.

Table 9: SBT Works specialist environmental consultants

Aspect	Consultant	Scope of works
Noise & Vibration	Renzo Tonin	Preparation of DNVISs
Contamination	Coffey	Preparation of Detailed Site Investigations, Remediation Action Plans (if required) and Site Validation reports (if required), including field sampling, analysis and reporting
Water Discharge Assessment	Epic Environmental	Expert advice in relation to water discharge impact assessment
Soil and Water	Strategic Environmental and Engineering Consulting (SEEC)	Expert advice in planning and implementing site water management strategies and provision of training on soil and water management measures specific to the SBT Works
Heritage, Flora & Fauna	AMBS Ecology and Heritage	Expert advice in ecology and heritage, including archival recording, archaeological investigations and excavations, pre-clearing surveys and management of any unexpected finds
NSW Environmental Approvals Services	Treo Environment	Preparation of the CEMP and provision of support to the CPBG environment team

4.3. Sydney Metro

Sydney Metro is the Proponent under the EP&A Act with ultimate responsibility to DPE for compliance against the SSI 10051 Planning Approval. Personnel from the Sydney Metro project delivery team will:

- Ensure compliance with the SSI 10051 Planning Approval and REMMs held by Sydney Metro, as set out in Schedule D4 of the Contract
- Determine consistency assessments for the SBT Works under section 5.25 of the EP&A Act
- Release land in accordance with contractual access schedules.

CPBG will report to Sydney Metro as required to comply with regulatory approvals, statutory obligations and contractual requirements.

4.4. Environment Representative

The Environmental Representative (ER) is an independent environmental professional engaged by Sydney Metro and approved by DPE in accordance with SSI 10051 Planning Approval. Reflecting the requirements of Condition A32, the roles and responsibilities of the ER include but are not limited to the following:

- 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 this approval
- Consider and recommend to Sydney Metro and CPBG any improvements that may be made to work practices to avoid or minimise adverse impact to the environment and to the community
- Review documents identified in Conditions A10, A18, A20, C1, C5 and C13 and any other documents that are identified by the Planning Secretary, to ensure they are consistent with requirements in or under the SSI 10051 Planning Approval and if so:

  – endorse the documents before submission of such documents to the Planning Secretary (if those documents are required to be approved by the Planning Secretary); or
  – endorse the documents before the implementation of such documents (if those documents are only required to be submitted to the Planning Secretary / DPE for information or are not required to be submitted to the Planning Secretary / DPE);
  – provide a written statement to the Planning Secretary advising the documents have been endorsed.

- For documents that are required to be submitted to the Planning Secretary / DPE for information (as identified in Conditions A10, A18, A20, C1, C5 and C13), the documents must be submitted as soon as practicable to the Planning Secretary / Department after endorsement by the ER, unless otherwise agreed by the Planning Secretary
- Regularly monitor the implementation of the documents listed in Conditions A10, A18, A20, C1, C5 and C13 to ensure implementation is being carried out in accordance with the document and the terms of this approval
- As may be requested by the Planning Secretary, help plan or attend audits of the development commissioned by DPE including scoping audits, programming audits, briefings and site visits, but not independent environmental audits required under Condition A36
- As may be requested by the Planning Secretary, assist DPE in the resolution of community complaints received directly by DPE
- Consider or assess the impacts of minor ancillary facilities as required by Condition A22
- Consider any minor amendments to be made to the Site Establishment Management Plan, CEMP, CEMP Sub-plans and construction monitoring programs without increasing impacts

to nearby sensitive land use(s) and are consistent with the terms of this approval and the Site Establishment Management Plan, CEMP, CEMP Sub-plans and construction monitoring programs approved by the Planning Secretary and, if satisfied such amendment is necessary, approve the amendment. This does not include any modifications to the terms of the SSI 10051 Planning Approval

- Prepare and submit to the Planning Secretary and other relevant regulatory agencies, for information, an ER Monthly Report providing the information set out in the ER Protocol under the heading “Environmental Representative Monthly Reports”. The ER 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 or as otherwise agreed by the Planning Secretary
- Assess the impacts of activities as required by the Low Impact Work definition.

CPBG will:

- Facilitate ER inspections
- Notify the ER of any environmental incidents or non-compliances
- Provide the ER with relevant information, documents, and access to the premises as necessary, or reasonably required by the ER, to allow the ER to perform its functions under the SSI 10051 Planning Approval
- Update this Plan to address any relevant requirements and recommendations of the ER
- Review and analyse the cause of any environmental non-compliance raised by the ER and develop a plan of corrective action to minimise the likelihood of recurrence
- Close out corrective actions in accordance with timeframes agreed with the ER.

4.5. Independent Certifier

The role of the Independent Certifier (IC) with respect to the environmental management of the SBT Works is set out in the Independent Certifier Deed. The IC will oversee implementation of environmental controls in accordance with this Plan and relevant aspect-specific procedures. The IC will provide input to CPBG as required.

5. Environmental Management and Approvals Documentation

5.1. Environmental risk management

Risk management processes are a key focus in developing and implementing EMS documentation. The objectives of risk assessments are to:

- Identify environmental aspects and impacts that have the potential to adversely affect the local environment, human health or property
- Qualitatively evaluate and categorise each impact
- Assess whether impacts can be managed by environmental protection measures
- Qualitatively evaluate residual risk with implementation of measures.

5.1.1. Initial Environmental Risk Assessment

To inform the development of this Plan, an assessment of potentially significant environmental aspects and impacts was undertaken to determine the controls required for the SBT Works (Annexure E). Informed by the EIS, Submissions Report, and the SSI 10051 Planning Approval, the risk assessment included the identification of mitigation measures and primary controls for each environmental management category.

The risk assessment determined that the residual risk level (after mitigation and management measures have been applied) of each environmental management category is predominately 'Low' or 'Medium' with isolated aspects rated as 'High' (Annexure E). In accordance with the Staging Report, environmental management categories assessed as:

- Residual risk of 'High' (noise and vibration, and groundwater) will be addressed in a stand-alone Sub-Plan
- Residual risk level of 'Medium' will be addressed in the main CEMP document in the form of a procedure
- Residual risk level of 'Low' will be addressed in the main CEMP document only.

5.1.2. Ongoing Environmental Risk Identification and Management in Construction

Environmental risk assessments are completed at each stage of project planning and during delivery of the SBT Works. As detailed in the Risk Management Plan (SMCSWLWC-SYC-1NL-PM-PLN-000021), environmental risks and opportunities will be identified through:

- The Risk Assessment conducted at tender stage
- The Principal Project Risk Register
- Construction Area Plan (CAP) Risk Assessments
- Work Pack Risk Assessments
- Safe Work Method Statements (SWMS), which also address environmental risks
- Investigations of environmental incidents, complaints and non-compliances
- Pre-start Meetings.

The Environment Manager or delegate has approval authority for all risk assessment types (except SWMS and Pre-start Meetings) to ensure environmental risks and opportunities are adequately identified and addressed.

Environmental risks, controls and accountabilities will be communicated to all relevant personnel through induction, procedures, Site Environmental Plans (SEPs), Work Packs, SWMS, toolbox talks, and prestart meetings. Where relevant, material changes in the risk profile will also be communicated to the Principal and ER.

Additional information on the process used to manage environmental risks and opportunities is detailed in Section 7.5.

5.2. Environmental management documents

Reflecting the outcomes of the environmental risk assessment, the following key documentation, procedures and tools have been developed to mitigate significant risks and achieve continual improvement:

- **Environment and Sustainability Policy Statement** (Annexure A) – Articulates the environmental and sustainability commitments to be achieved during the SBT Works.
- **Management Plans** – This CEMP and associated Sub-Plans detail the processes and procedures to be implemented during the SBT Works.
- **Aspect Specific Procedures** (Annexure B) – Document processes, roles and responsibilities and relevant checklists and forms, including internal hold points. These documents are a key management tool for the Construction Team.
- **Environmental Checklists and Forms** – Support procedure implementation and provide assurance of environmental compliance. Checklists and forms are referenced in relevant aspect specific procedures.
- **Site Environmental Plans (SEPs)** – Provide a practical translation of environmental risks and controls for workers, including training and competency requirements. SEPs are specific to a site or activity and incorporate an illustration of the site (including significant structures, work areas, disturbance areas, areas of preservation and boundaries), identify environmentally sensitive receivers and detail control measures as derived from relevant procedures. SEPs will be prepared progressively for each stage of development, endorsed by the Environment Manager or delegate, and communicated to relevant workers prior to commencing works. SEPs will be informed by the Sensitive Area Plans in Annexure D.

The interrelationship of the above environmental management documents with other project plans and documents is depicted in Figure 4.

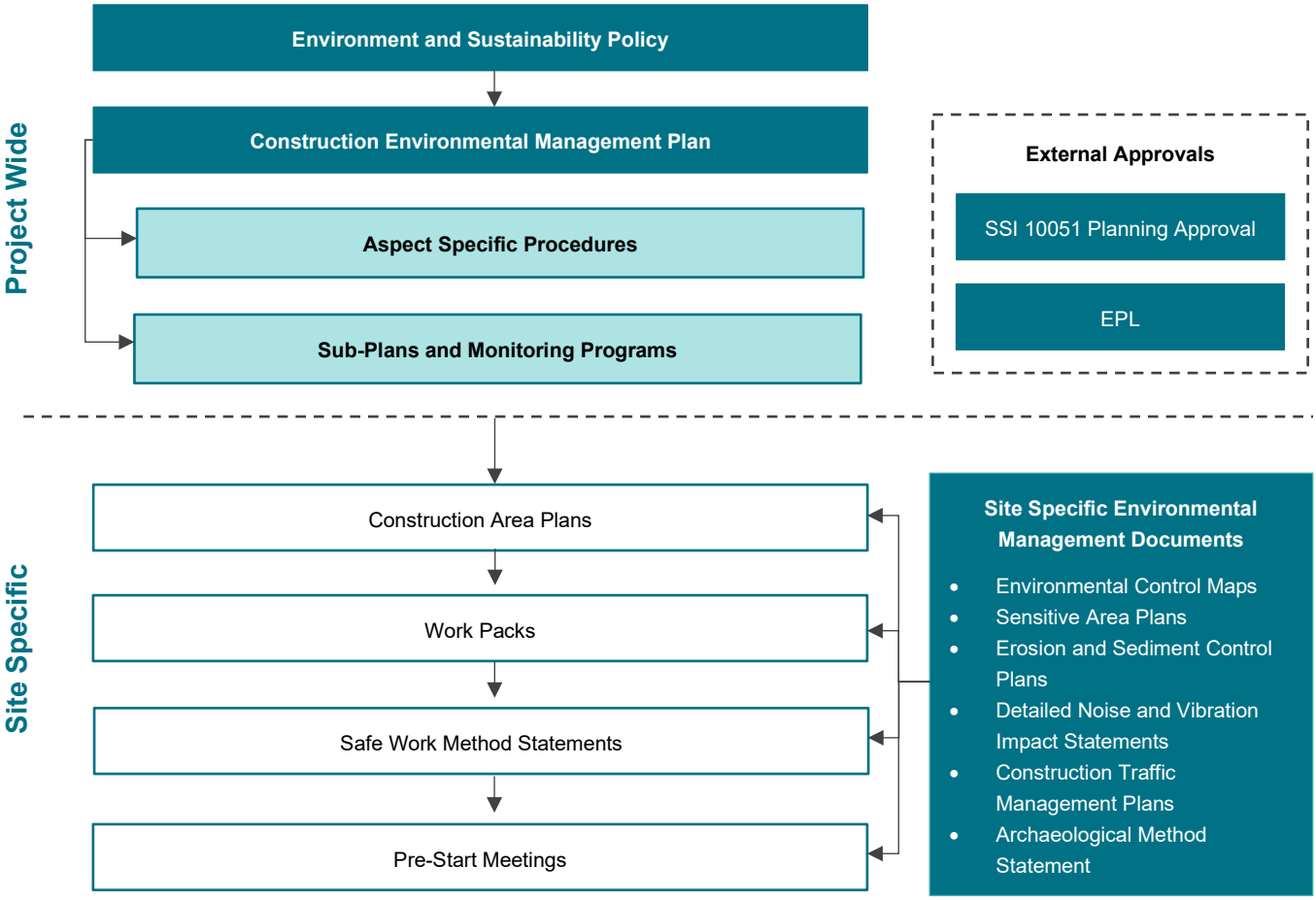


Figure 4 Overview of environmental management system documents

5.3. Construction planning

To ensure the SBT Works are constructed safely, while minimising environmental impacts and achieving compliance with approvals, licences and contractual obligations, CPBG will prepare and implement the planning documents detailed in Table 10. This robust process will include a cross-functional review and sign-off at key stages.

Table 10: Key construction planning documents

Key planning document	Description
Construction Area Plan (CAP)	The CAP is the planning document for each construction area. The CAP includes the overall construction approach and methodology, risk assessment, constructability reviews and associated Work Pack listing. The CAPs will be approved by the Environment Manager or delegate prior to commencement of works described in their scope.
Work Pack	A Work Pack contains all the information required to manage an activity. There will be multiple Work Packs referenced in each CAP. Each Work Pack will include a step-by-step breakdown of the activity to be undertaken, work method statement, sequencing, inspection and test plans (ITPs), Safe Work Method Statements (SWMSs), relevant drawings, and environmental controls. Work Packs provide an integrated approach to the management of safety, quality and environmental risks. During construction planning for each work area, work methods will be

Key planning document	Description
	reviewed, the risks identified during the design phase will be re-assessed, and new risks will be recorded for communication to field staff. All controls necessary to ensure compliance will be included in the Work Packs, including reference to relevant SEPs, procedures, checklists and forms. Work Packs will be approved by the Environment Manager or delegate prior to commencement of works described in their scope. Relevance and adequacy of environmental controls identified in Work Packs will be reviewed and where required, updated.
Safe Work Method Statement (SWMS)	SWMS provide a prescriptive sequence of tasks to complete an activity. Each SWMS includes work steps (in sequence) with work step precautions, associated safety and environmental hazard(s) and hazard control(s), specific personal protective equipment, equipment available onsite, responsibilities, competencies and where applicable, permit conditions. Prior to commencement of works, field staff will review and sign the SWMS as part of a pre-start meeting.
Pre-start meeting	A pre-start meeting is a review of work progress and planned activities for the incoming shift. The meeting is focused on creating a positive safety, environmental and quality culture through workforce engagement. The pre-start meeting will: • Identify any changes that are to be made to the work or work environment, including impacts of nearby or interfacing work • Discuss any safety or environmental hazards reported on previous shifts • Discuss any safety or environmental incidents that were reported on previous shifts. Construction Directors and Project Managers will ensure that Site Supervisors conduct daily pre-start meetings with all members of the work team prior to commencing each shift. These meetings will typically be conducted by a Supervisor or their nominated delegate. Attendance at the pre-start meeting will be mandatory. The content of the pre-start meeting will be recorded, including any issues raised and attendance. Pre-start meetings will be used in conjunction with the SWMS to ensure changes in conditions (e.g. new workers, weather, changed materials, etc.) are adequately documented.

5.4. Hold points

The activities detailed in Table 11 are recognised as hold points and will not to proceed without objective review and approval by the nominated authority.

Table 11 - Environmental hold points

Hold Point Details	EMS Document	Responsibility	Timing
Air Quality management			
Stop work immediately if visible dust has the potential to leave the site. Dust must be minimised to the greatest extent practicable.	Air Quality Management Procedure and Monitoring Program	Site Supervisor Environmental Coordinator	During works
Heritage management			
Stop work immediately if unexpected heritage finds, including human remains, are discovered.	Heritage Unexpected Finds	Site Supervisor	During works

Hold Point Details	EMS Document	Responsibility	Timing
Establish an exclusion zone and immediately contact the Supervisor.	Workflow Procedure	Environmental Coordinator	
Noise and Vibration management			
Any work to be undertaken outside of standard construction hours will require an approved OOHW Application Form which references a DNVIS in accordance with Condition E47 and community consultation in accordance with Condition E57.	Noise and Vibration Management Sub-Plan	Project Engineer Environmental Coordinator	Prior to and during works
Adequate mitigation measures will be implemented prior to commencement of works that are predicted to exceed the highly noise affected criteria within sensitive land uses. Mitigation measures must be implemented in accordance with the DNVIS (Condition E47) and community consultation must be undertaken in accordance with Condition E57.	Noise and Vibration Management Sub-Plan	Site Supervisor Environmental Coordinator	Prior to works
Owners and occupiers of properties at risk of exceeding the screening criteria for cosmetic damage (as determined by the DNVIS prepared in accordance with Condition E47) will be notified prior to commencement of works (in accordance with Condition E57). If the potential exceedance is to occur more than once or extend over a period of 24 hours, owners and occupiers are to be provided a schedule of potential exceedances on a monthly basis for the duration of the works.	Noise and Vibration Management Sub-Plan	Site Supervisor Community Liaison Officer	Prior to works
Spoil and Waste management			
Materials brought onto site require certificates/testing results to be provided to the Environment Team to determine whether material meets EPA requirements. Wastes that are unable to be reused or recycled will be exported to a site licenced by the EPA to accept the waste, or in accordance with a valid Resource Recovery Exemption or Order, or to any other site that can lawfully accept such waste.	Waste and Recycling Management Sub-Plan	Project Engineer Environmental Coordinator	During works
Spill management			
Spills must be immediately contained and cleaned-up. All spills must be reported to the Environment Team regardless of quantity or location.	Soil and Water Management Sub-Plan	Site Supervisor Environmental Coordinator	During works
Soil and Water management			
An Erosion and Sediment Control Plan (ESCP) must be developed and implemented prior to commencement of ground disturbance.	Soil and Water Management Sub-Plan	Environmental Coordinator Site Supervisor	Prior to and during works

Hold Point Details	EMS Document	Responsibility	Timing
No water will be discharged from the site without written approval of the Environment Manager (or delegate). All water will be tested (and treated if required) prior to discharge from the site to ensure compliance. A Water Pollution Impact Assessment (referred to as a Discharge Impact Assessment) must be prepared to meet Condition E130 prior to discharges.	Soil and Water Management Sub-Plan	Environment Manager or delegate Site supervisor	Prior to water discharge
Stop work if potential contamination is identified. Notify the Site Supervisor and Environmental Coordinator and establish an exclusion zone.	Soil and Water Management Sub-Plan	Site Supervisor Environmental Coordinator	During works
Prior to ground disturbance in high probability salinity areas, testing will be carried out to determine the presence of saline soils. If salinity is encountered, excavated soils will not be reused or will be managed in accordance with Book 4 Dryland Salinity: Productive Use of Saline Land and Water (NSW DECC 2008).	Soil and Water Management Sub-Plan	Environmental Coordinator Site Supervisor	Prior to works
Flora and Fauna Management			
A pre-clearing inspection must be conducted by a qualified ecologist and the clearance area delineated. Permit to clear land or vegetation approved by Environment Manager or delegate.	Flora and Fauna Management Sub-Plan	Environmental Coordinator Site Supervisor	Prior to works
Prior to disturbance, conduct a targeted microbat survey of dwellings and structures proposed for demolition, removal, or modification. Other human-made structures such as culverts and other under-road structures within the construction footprint will also be surveyed for threatened microbats.	Flora and Fauna Management Sub-Plan	Environmental Coordinator Site Supervisor	Prior to works
Stop work if an unexpected threatened flora or fauna species is identified.	Flora and Fauna Management Sub-Plan	Environmental Coordinator Site Supervisor	Prior and during works
Ancillary Facilities			
Minor ancillary facilities and new ancillary facilities that were not identified in the EIS must be assessed against the requirements of the SSI 10051 Planning Approval and approved by the ER prior to establishment.	Section 2.5 Section 2.6	Environment Manager ER Construction Manager	Prior to establishment of ancillary facilities
Traffic and Access			
A road dilapidation report must be prepared prior to the use of any local road by a heavy vehicle for the purposes of the SBT Works.	Section 6.10	Suitably qualified and experienced person	Prior to works
Construction Affecting Buildings			

Hold Point Details	EMS Document	Responsibility	Timing
A condition survey must be prepared for all buildings, structures, utilities identified in the EIS and Submissions Report as being at risk of damage. The condition survey must be prepared before commencement of any work that could impact on the subject surface / subsurface structure. Refer to Section 6.10 for further details.	Section 6.10	Appropriate professional nominated by Construction Manager	Prior and during works

5.5. Environmental monitoring

Environmental monitoring will be undertaken to validate predicted impacts, assess the effectiveness of environmental controls, and to address the conditions of SSI 10051 Planning Approval. An indicative summary of the environmental monitoring that will be carried out as part of the SBT Works is provided in Table 12. Monitoring programs and requirements are described, in full, in relevant aspect specific Sub-Plans and Procedures.

Where a non-compliance is detected or monitoring results are outside of the expected range, the process described in Section 7.4.3 will be implemented.

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

Table 12: Indicative summary of environmental monitoring

Aspect	Monitoring Activity	Responsibility	Timing
General	Environmental Inspections	Environment Manager Environmental Coordinators	Weekly
General	ER Inspections	Site Supervisors Environment Manager Environmental Coordinators ER	Fortnightly (unless otherwise agreed)
General	Complaints reporting	Stakeholder and Community Relations Manager Environment Manager	Daily
Noise and vibration	Noise and vibration monitoring	Environment Manager Environmental Co-ordinators	Refer to the monitoring program detailed in the Noise and Vibration Management Sub-Plan
Heritage	Vibration monitoring and settlement monitoring (in relation to the Goods Shed)	Environment Manager Environmental Co-ordinators	Refer to the monitoring program detailed in the Noise and Vibration Management Sub-Plan
Soil and water	Refer to the surface water and groundwater monitoring programs detailed in the Soil and Water Management Sub-Plan	Environmental Coordinators Site Supervisors	Refer to the surface water and groundwater monitoring programs detailed in the Soil and Water Management Sub-Plan
Air quality	Refer to the Air Quality Management Procedure and Monitoring Program	Environmental Coordinators Site Supervisors	Refer to the Air Quality Management Procedure and Monitoring Program
Waste	Waste (materials) tracking and reporting	Environment Manager Environmental Coordinators Project Engineers	Waste tracked and reported in accordance with the EPL (refer to the Waste and Resource Management Sub-Plan)

Aspect	Monitoring Activity	Responsibility	Timing
Flora and fauna	Refer to the Flora and Fauna Management Sub-Plan	Environment Manager Environmental Coordinators	Refer to the Flora and Fauna Management Sub-Plan

5.6. Environment and sustainability in design

As part of the tender process, workshops were undertaken with the design and construction teams to ensure that environmental and sustainability requirements were identified, considered and fully integrated into the tender design and construction methodology. Initiatives will be incorporated into the design where practicable. Any additional initiatives and compliance with environment and sustainability requirements will be documented within Design Reports.

Additional details on sustainability during the SBT Works are provided in the Sustainability Management Plan (SMWSASBT-CPG-1NL-NL000-EV-PLN-000001) which was prepared in accordance with the Sydney Metro Sustainability Plan (Condition E100).

5.7. Environment and sustainability in procurement

CPBG will be responsible for the environmental performance of sub-contractors and will specify environmental obligations in the contract documentation. The Environment Manager, or delegate, will participate in the sub-contractor tender assessment and selection process where it is deemed necessary due to associated environmental and sustainability risks. As part of the selection process, consideration will also be given to the past environmental and sustainability performance of preferred sub-contractors.

Prior to commencement of works, all sub-contractor environmental and sustainability documentation will be subject to review and approval by CPBG to ensure compliance with Sydney Metro contract requirements, the SSI 10051 Planning Approval and the EPL.

All sub-contractors are required to work in accordance with this CEMP. All sub-contractors are required to attend a site induction where the requirements of this Plan will be communicated. A record of all sub-contractors inducted will be maintained as part of the induction and training register.

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

- Sub-contractors' general work practices
- Adequacy and effectiveness of the sub-contractor's environmental protection measures
- Sub-contractor's compliance with the requirements of this Plan.

6. Environmental Aspect and Impact Management

6.1. Overview

This Section has been developed to ensure that environmental risks and opportunities are adequately addressed throughout the SBT Works. Appropriate management measures have been identified through a review of compliance documentation including the SSI 10051 Planning Approval, the Staging Report, contractual documents, legal compliance obligations, and the Aspects and Impacts register.

Table 13 summarises the key environmental aspects associated with the SBT Works, details the compliance obligations and links the primary EMS documents which outline how CPBG will manage each aspect. As identified in Table 13, environmental aspects are addressed either directly in this section of the CEMP or in aspect specific Sub-Plans and Procedures.

Table 13: Environmental aspects and associated environmental management requirements

Environmental Aspect	SSI 10051 Planning Approval	Staging Report	SBT Works EMS Document
Spoil	Spoil Management Sub-Plan (CEMF clause 3.5 as referenced in Condition C1)	CEMP Sub-Plan	Spoil Management Sub-Plan
Groundwater	Groundwater Management Sub-Plan (CEMF clause 3.5 as referenced in Condition C1 and REMM GW6)	CEMP Sub-Plan and monitoring program	Soil and Water Management Sub-Plan (including groundwater and surface water monitoring programs)
Noise and Vibration	Noise and Vibration Management Sub-Plan (CEMF clause 3.5 as referenced in Condition C1)	CEMP Sub-Plan and monitoring program	Noise and Vibration Management Sub-Plan
Non-Aboriginal Heritage	Heritage Management Sub-plan (CEMF clause 3.5 as referenced in Condition C1)	CEMP procedure	Non-Aboriginal Heritage Management Procedure (Section 6.6) and Heritage Unexpected Finds Workflow Procedure (Annexure B)
Aboriginal Cultural Heritage	Aboriginal Cultural Heritage Management Plan (ACHMP) (Condition E30)	Implement approved / updated ACHMP	Aboriginal Heritage Management Procedure (Section 6.5) and Heritage Unexpected Finds Workflow Procedure (Annexure B)
Flora and Fauna / Biodiversity	Flora and Fauna Management Sub-Plan (CEMF clause 3.5 as referenced in Condition C1 and Condition C11)	CEMP procedure	Flora and Fauna Management Sub-Plan
Visual Amenity	Visual Amenity Management Sub-Plan (CEMF clause 3.5 as referenced in Condition C1)	CEMP procedure	Visual Amenity Management Procedure (Section 6.7 and Annexure B)
Soil and Water	Soil and Water Management Sub-Plan (CEMF clause 3.5 as referenced in Condition C1,	CEMP procedure and surface water monitoring program	Soil and Water Management Sub-Plan (including groundwater and

Environmental Aspect	SSI 10051 Planning Approval	Staging Report	SBT Works EMS Document
	Condition C12 and REMMs SC1 to SC5)		surface water monitoring programs)
Air Quality	Air Quality Management Sub-Plan (CEMF clause 3.5 as referenced in Condition C1 and REMM AQ1)	CEMP procedure and monitoring program	Air Quality Management Procedure and Monitoring Program (Section 6.3 and Annexure B)
Waste and Recycling	Waste Management Sub-Plan (CEMF clause 3.5 as referenced in Condition C1)	CEMP Sub-Plan	Waste and Recycling Management Sub-Plan
Bushfire Management Plan	N/A	Emergency Response Plan	Emergency Response Plan
Cumulative Construction Impacts Plan	Cumulative Construction Impacts Management Plan (REMM CL1)	CEMP procedure	Cumulative Construction Impacts Procedure (Section 6.11)
Traffic and Transport Management	Construction Traffic Management Plans (Condition E103)	Construction Traffic Management Plans	Construction Traffic Management Plans and Section 6.2
Workforce Development and Industry Participation	N/A	Workforce Development and Industry Participation Plan	Workforce Development and Industry Participation Plan

6.2. Traffic and transport

In the absence of controls, the SBT Works have potential to cause temporary traffic, transport and parking impacts on the surrounding community. To mitigate potential impacts, traffic will be managed in accordance with the Sydney Metro Construction Traffic Management Framework (CTMF) and traffic mitigation requirements set out in the SSI 10051 Planning Approval.

Specific management measures and requirements that will be implemented throughout the SBT Works are detailed in the sections that follow.

6.2.1. Traffic and Transport Liaison Group

The Traffic and Transport Liaison Group (TTLG) has been established to provide a forum for discussing traffic, transport and road safety matters associated with the SBT Works, including:

- Construction Traffic Management Plans (CTMPs) (Section 6.2.2)
- Construction staging and traffic operations
- Public transport impacts
- Pedestrian and cyclist impacts
- Community feedback and communication strategies
- Potential cumulative construction traffic impacts with M12 Motorway and Elizabeth Drive.

The TTLG membership will include representatives from Western Sydney Airport, Transport for NSW (TfNSW/Sydney Metro), Customer Journey Management (CJM), local Councils, Emergency Services, public transport operators and pedestrian/cyclist groups.

6.2.2. Construction Traffic Management Plans

Site-specific CTMPs will be developed for ancillary facilities, intersections and construction sites which will result in long-term changes to the road network. CTMPs will specify the road safety and

traffic management measures to be applied during the SBT Works to ensure pedestrian, cyclist and motorist safety. CTMPs will establish adequate and appropriate measures to:

- Minimise parking on public roads,
- Minimise idling and queueing on state and regional roads
- Prevent marshalling of construction vehicles near sensitive uses
- Prevent the blocking or disruption of access across pedestrian or shared user paths at any time unless alternate access is provided
- Ensure spoil haulage vehicles adhere to the nominated haulage routes identified in the CTMP.

Each CTMP will reflect the requirements of the CTMF and be prepared in consultation with the TTLG. CTMPs will be submitted to the Planning Secretary for information prior to commencement of construction in the area identified and managed within the relevant CTMP.

It is noted that the CTMP for St Marys will specifically address the effective operation of the existing transport interchange during the SBT Works.

6.2.3. Haulage routes

Local roads to be used by heavy vehicles to directly access ancillary facilities / construction sites will be limited to those identified in the EIS or Submissions Report. Where an alternative local road is proposed for use during the SBT Works, a request will be submitted to the Planning Secretary for approval, including:

- A swept path analysis
- Demonstration that the use of local roads by heavy vehicles will not compromise the safety of pedestrians and cyclists or the safety of two-way traffic flow on two-way roadways
- Details as to the date of completion of the road dilapidation surveys for the subject local roads
- Measures that will be implemented to avoid, where practicable, the use of local roads past schools, aged care facilities and child care facilities during their peak operation times
- Written advice from an appropriately qualified professional on the suitability of the proposed heavy vehicle route which takes into consideration the swept path analysis and measures to avoid sensitive land uses.

The locations of all heavy vehicles used for spoil haulage will be monitored in real time and the records of monitoring be made available electronically to the Planning Secretary and the EPA on request for a period of no less than one year following the completion of the SBT Works.

6.2.4. Pedestrian and access management

CPBG will maintain access to all utilities and properties during the SBT Works, unless otherwise agreed in writing with the relevant utility owner, landowner or occupier. All reasonably practicable measures will be implemented to maintain pedestrian, cyclist and vehicular access to, and parking in the vicinity of, businesses and affected properties.

Where disruption cannot be minimised, alternative pedestrian, cyclist and vehicular access, and parking arrangements, will be developed in consultation with affected businesses and landowners and implemented before the disruption. Adequate signage and directions to businesses will be provided before, and for the duration of, any disruption.

Any property access physically affected by the SBT Works will be reinstated to at least an equivalent standard, unless otherwise agreed by the landowner or occupier. Property access will be reinstated within one month of completion of the work that physically affected the access or in any other timeframe agreed with the landowner or occupier.

Reflecting the requirements of the CTMF, safe pedestrian and cyclist access will be maintained around all construction sites during the SBT Works. Appropriate signage and line marking will be provided to guide pedestrians and cyclists past construction sites and on the surrounding network

to allow access to be maintained. In circumstances where pedestrian and cyclist access are restricted or removed due to construction activities, a proximate alternate route which complies with the relevant standards, will be provided and signposted before the restriction or removal of the impacted access.

6.2.5. St Marys parking management

A construction worker car-parking strategy for St Marys was prepared in consultation with Penrith City Council and TfNSW prior to the commencement of the Preparatory Works and will implemented for the duration of the SBT Works. The strategy, incorporated into the St Marys Site Establishment Construction Traffic Management Plan (SMWSASBT-CPG-STM-SN100-TF-PLN-000001), seeks to:

- Minimise overall demand for construction worker car-parking through initiatives such as use of other project construction worksites, shuttle buses, car-pooling and encouraging the use of public transport
- Minimise potential use of on-street car-parking by construction workers.

Daily monitoring of the site will be undertaken by the Site Supervisor. Preventive and/or corrective actions will be undertaken in response to monitoring activities and engagement with stakeholders.

6.2.6. Modelling, analysis and design

Supplementary analysis and modelling as required by TfNSW and / or the TTLG will be undertaken to demonstrate that construction and operational traffic can be managed to minimise disruption to traffic network operations, including changes to and the management of:

- pedestrian, bicycle and public transport networks
- public transport services
- pedestrian and cyclist movements.

Revised traffic management measures arising from the modelling will be incorporated into the relevant CTMP.

The design, construction and operation of permanent road works will be integrated with existing and proposed transport networks and minimise adverse changes to the safety, efficiency and accessibility of the network. Design and assessment of related traffic, parking, pedestrian and cycle accessibility impacts and changes will be undertaken:

- In consultation with, and to the reasonable requirements of the TTLG
- In consideration of existing and future demand, connectivity (in relation to permanent changes), performance and safety requirements
- To minimise and manage local area traffic impacts
- To, where possible and appropriate, retain or reinstate parking in St Marys
- To ensure access is maintained to property and infrastructure
- To address relevant design, engineering and safety guidelines, including Austroads, Australian Standards and TfNSW requirements.

Civil, structural and traffic signal design plans will be submitted to the relevant road authority for consultation during design development and before completion of construction works.

6.2.7. Road safety audits

Road Safety Audits will be carried out to assess temporary and permanent road works, including vehicular access, signalised intersection works, and works relating to pedestrians, cyclists, and public transport users during the following stages:

- Detailed design
- Pre-opening of temporary or permanent road works
- CTMP preparation.

Road Safety Audits will be undertaken in accordance with:

- Guidelines for Road Safety Audit Practices (RMS, 2011)
- Guide to Road Safety Part 6
- Road Safety Audit (Austroads, 2009)
- Sydney Metro Principal Contractor Health and Safety Standard
- CTMF.

Road safety audits will be prepared in consultation with the TTLG before the completion and use of the subject infrastructure and will be made available to the Planning Secretary upon request.

6.3. Air quality management procedure and monitoring program

6.3.1. Air quality aspects and impacts

The SBT Works are predominately tunnelling activities with excavations to accommodate concrete portal structures, station boxes and intermediate service facilities. Works are mostly underground, with material loading largely occurring either underground, or in tunnel portals. As such, there will be limited opportunity for airborne dust particles to directly affect surface and ambient air quality. However, air quality risks remain relevant to the SBT Works and specifically with respect to the following activities:

- Demolition of existing commercial premises
- Establishment/demobilisation of work site
- Excavation and earthworks associated with local area works and utilities relocations
- Stub tunnel excavation using roadheaders
- Spoil handling, storage and transport
- Construction of above ground structures
- Lansdowne Road construction of the permanent road bridge
- Piling and services facility shaft using rippers and rock hammers
- Operation and discharge of tunnel ventilation systems.

Potential impacts arising from the above activities include:

- Dust and vehicle emissions can impact human health, fauna and flora
- Dust can impact personal and public property resulting in community complaints and additional cleaning requirements
- Dust and vehicle emissions can result in odours that can impact human health.

Appropriate mitigation measures and monitoring strategies are discussed in the sections that follow and the Air Quality Management Program and Monitoring Program (Annexure B). The Air Quality Management Procedure and Monitoring Program has been prepared in accordance with Managing Urban Stormwater: Soils and Construction (Volume 1 of the Blue Book) (Landcom, 2004).

6.3.2. Tunnel construction and surface works

While tunnelling works will not directly affect air quality, air vented from the tunnel has potential to impact ambient surface air quality. To mitigate this risk, the atmosphere within the excavations during tunnel construction will be ventilated through filter units such that discharged air meets the requirements of the *Protection of the Environment Operations (Clean Air) Regulation 2010* (as amended).

The tunnels will be ventilated at seven locations, including the three TBM launch sites (Orchard Hills, Airport Dive and the Airport Terminal shaft), the two intermediate service facilities (Bringelly and Claremont Meadows) and two stub tunnel and TBM retrieval sites (St Marys and Aerotropolis Core) during different phases of construction. The tunnel ventilation systems will be fitted with dust extractors or filtration systems. A similar ventilation system is also to be used to manage work health and safety requirements within acoustic enclosures. All ventilation systems will be designed by a suitably qualified ventilation engineer under the direction of the Design Manager such that

exhausts do not discharge directly to sensitive receivers through the use of louvers, baffles and, where required, filtration systems. Designs will be approved by the IC as required.

Exposed surface areas will be managed to reduce dust emissions using mitigation measures including water sprays, adhesive polymers and covering/protecting exposed surfaces. Wheels of all vehicles leaving site will be checked/cleaned and sealed roads around construction sites will be swept where necessary to remove any deposited material with the potential to generate dust.

Water will be used to suppress dust particles potentially generated during construction. Earthworks will be kept damp, as required, especially during dry weather and spoil stockpiles will be covered and/or damped as necessary. Long-term stockpiles (>20 days) will be stabilised with grasses or appropriate soil binding material where there is the potential for dust generation (refer to the Blue Book for guidance on preferred soil binding materials). Where a minimum groundcover of 60% has not been achieved within 10 working days of completion of formation, review works and implement additional soil binding measures.

Water lines will be supplied to cutting and grinding equipment to minimise dust emissions. TBM spoil will have a high moisture content due to dust suppression at the cutting face and groundwater which will assist in minimising dust during spoil handling on the surface.

Water carts and sweepers will also be utilised to manage sites and roads where required. Where practicable and safe, water on site will be reused for this purpose. Potentially dusty materials will be handled as little as possible, and during handling, the height from which dust generating material is unloaded will be minimised. Conveyors used for transporting material will be covered with scrapers to remove build-up of material and drop chutes will be fitted on stackers and screens when required.

6.3.3. Plant and equipment maintenance

The main impacts from plant and vehicle emissions include an increase in greenhouse gases and a general reduction in air quality. The potential reduction of air quality from plant and vehicle emissions associated with the SBT Works is not considered significant in isolation, however, the cumulative impact with other adjacent sources (i.e. motor vehicle emissions, commercial businesses and domestic sources) has the potential to diminish air quality in the immediate vicinity and region of the SBT worksites.

To minimise the impacts on local and regional air quality, the exhausts of all major plant shall be fitted with suitable exhaust emission cleaners, such as catalytic converters, and maintained in accordance with the manufacturers' recommendations. Mechanical inspections and servicing of plant, equipment and vehicles will also be undertaken to ensure all have appropriate emission control devices and are in good working order.

In addition to emission control devices and mechanical inspections, regular site inspections will be undertaken by Site Supervisors and Environmental Coordinators to monitor and reduce any unnecessary running of plant and vehicles. These inspections will also be used to detect any plant or vehicles emitting excessive fumes or smoke.

6.4. Water Reuse Strategy

A Water Reuse Strategy (SMWSASBT-CPG-1NL-NL000-WA-RPT-000001) has been prepared, which sets out options for the reuse of collected stormwater and groundwater during construction. The Water Reuse Strategy includes:

- Evaluation of reuse options
- Details of the preferred reuse option(s), including volumes of water to be reused, proposed reuse locations and/or activities, proposed treatment (if required), and any additional licences or approvals that may be required
- Measures to avoid misuse of recycled water as potable water
- Consideration of the public health risks from water recycling

- Time frame for the implementation of the preferred reuse option(s).

The Water Reuse Strategy was prepared based on best practice and advice was sought from relevant agencies, as required. The Strategy was prepared prior to commencement of the Preparatory Works, submitted to the Planning Secretary for information and is publicly available on the Project website. The Strategy will be reviewed, updated (as required) and implemented during the SBT Works.

6.5. Aboriginal heritage management procedure

6.5.1. ACHMP

Sydney Metro has prepared an Aboriginal Cultural Heritage Management Plan (ACHMP) in accordance with Condition E30. Reflecting the requirements of the ACHMP, Sydney Metro will undertake an archaeological survey and if required, test excavation and salvage activities prior to the commencement of the SBT Works.

During the SBT Works, CPBG will implement the requirements of the ACHMP and undertake all reasonable steps so as not to harm, modify or otherwise impact Aboriginal objects or places of cultural significance except as authorised by SSI 10051 Planning Approval. This will be achieved through the implementation of the ACHMP, Sydney Metro Unexpected Heritage Finds Procedure (SM-18-001105232) and the Exhumation Management Procedure (SM ES-PW-315/5.0) (refer to Section 6.6.6).

6.5.2. Previously unidentified Aboriginal objects or places

Where previously unidentified Aboriginal objects or places of cultural significance are discovered, CPBG will:

- Provide Registered Aboriginal Parties (RAPs) with opportunities to participate in the assessment of the object or place
- Secure recovered Aboriginal objects and place under the care of the archaeological consultant while options for their long-term management (as determined through consultation with RAPs) are investigated
- Produce Aboriginal Heritage Information System site cards and submit to the Aboriginal Heritage Information Management System Registrar within one month of being identified
- Submit Aboriginal Site Impact Recording forms for sites subject to archaeological salvage to the Aboriginal Heritage Information Management System Registrar within one month of the completion of salvage works.
- Develop measures to manage and protect the identified cultural values in collaboration with knowledge holders to inform construction planning and design development.

Works undertaken on Defence Establishment Orchard Hills (Commonwealth land) will be undertaken in accordance with the Defence Establishment Orchard Hills Heritage Management Plan. In the event that previously unidentified Aboriginal objects or places of cultural significance are discovered within the boundaries of the Defence Establishment Orchard Hills, these will be reported to the Department of Defence and managed in accordance with the relevant provisions of the Defence Establishment Orchard Hills Heritage Management Plan.

SBT Works within the bounds of existing Aboriginal Heritage Impact Permit (AHIP) areas will be undertaken in accordance with the conditions of those permits and with permission from the relevant AHIP holder.

Aboriginal sites located outside of the construction footprint, but within 100m of it, will be clearly demarcated or sign posted to avoid potential impact.

In the event that archaeological salvage works are undertaken as part of the SBT Works, the following reports will be prepared:

- Interim Aboriginal archaeological salvage report – Prepared for each salvage site, summarising the salvage works, including the results of any post-excavation analyses completed. Interim results may be used to inform consistency assessments and Aboriginal heritage interpretation initiatives (undertaken by Sydney Metro).
- Archaeological Salvage Report – Prepared within one year of the completion of the fieldwork component and detailing the results of the archaeological salvage program (including the results of any post-excavation analyses). The Archaeological Salvage Report will be consistent with the best practice guidelines suggested by the Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW (DECCW 2010b) and the Aboriginal Cultural Heritage Standards & Guidelines Kit (NSW NPWS 1997).

6.6. Non-Aboriginal heritage management procedure

6.6.1. Historic heritage values

Existing heritage values of relevance to the SBT Works are shown in Table 14.

Table 14: Summary of Heritage Listings

Item	SBT Works site	Listing	Significance
St Marys Railway Station Group	St Marys	State Heritage Register (SHR) 01249, RailCorp s170 SHI 4801036, Penrith Local Environmental Plan (LEP) 2010 I282	State
Queen Street Post-War Commercial Building	St Marys	Not listed	Local
St Marys Munitions Workers Housing	St Marys	Not listed	Local
Milestone	Claremont Meadows services facility	Penrith LEP 2010 I859	Local
Four winds	Claremont Meadows services facility	Penrith LEP 2010	Local
Brick house	Claremont Meadows services facility	Penrith LEP 2010	Local
Former OTC Site Group	Aerotropolis Core	Liverpool LEP 2008 I5, Register of the National Estate (ID 100263)	Local
Two Water Tanks	Aerotropolis Core	Liverpool LEP 2008 I4	Local
Kelvin Park Group	Aerotropolis Core	SHR 00046, Liverpool LEP 2008 I8, Register of the National Estate (ID 3298)	State
Bringelly RAAF Base	Aerotropolis Core	Not listed	Local

6.6.2. Historic heritage potential impacts

As required by Section 3.6 of the CEMF, Table 15 provides a breakdown of the work tasks relevant to the SBT Works, including responsibility for each task, potential Non-Aboriginal heritage impacts, mitigation measures and residual risk ratings.

Table 15: Work Tasks and Responsibilities

Work Tasks	Responsibility	Potential Non-Aboriginal Heritage Impacts	Mitigation Measures	Mitigation Measure Responsibility	Residual Risk Rating
Demolition of existing buildings and structures	Project Manager Project Engineer Site Supervisor	Damage or destruction of heritage items (arising from direct impact or vibration)	Archival Recording (undertaken by the Advanced and Enabling Works) Archaeological Method Statement (Section 6.6.4) Vibration Monitoring (if triggered) and Settlement Monitoring (Section 6.6.5) Jib Crane Removal (if required) (Section 6.6.2.1) Unexpected Finds Protocol (Section 6.6.6) Jib Crane mitigation measures (Section 6.6.7)	Site Engineer/Supervisor Environmental Coordinator	Minor
Establishment and demobilisation of work sites (offices, amenities, car parking and access roads)	Project Engineer Site Supervisor	Damage or destruction of heritage items (arising from direct impact or vibration)		Site Engineer/Supervisor Environmental Coordinator	Moderate
Excavation and earthworks associated with local area works and utility relocations	Project Manager Project Engineer Site Supervisor	Damage or destruction of heritage items (arising from direct impact or vibration)		Site Engineer/Supervisor Environmental Coordinator	Minor to negligible
Piling and station box / dive excavation using rippers and rock hammers	Project Manager Project Engineer Site Supervisor	Damage or destruction of heritage items (arising from settlement or vibration)	Earth Pressure Balance TBM (Section 6.6.7) Vibration Monitoring (if triggered) and Settlement Monitoring (Section 6.6.5) Jib Crane Removal (if required) (Section 6.6.2.1) Jib Crane mitigation measures (Section 6.6.7)	Site Engineer/Supervisor Environmental Coordinator	Minor to negligible
Stub tunnel excavation using road headers	Project Manager Project Engineer Site Supervisor	Damage or destruction of heritage items (arising from settlement or vibration)		Site Engineer/Supervisor Environmental Coordinator	Minor to negligible
Spoil handing, storage and transport	Project Manager Project Engineer Site Supervisor	Damage or destruction of heritage items (arising from direct impact or vibration)	Archival Recording (undertaken by the Advanced and Enabling Works)	Site Engineer/Supervisor Environmental Coordinator	Minor to negligible

Work Tasks	Responsibility	Potential Non-Aboriginal Heritage Impacts	Mitigation Measures	Mitigation Measure Responsibility	Residual Risk Rating
Construction of above ground structures	Project Manager Project Engineer Site Supervisor	Damage or destruction of heritage items (arising from direct impact or vibration)	Archaeological Method Statement (Section 6.6.4) Vibration Monitoring (if triggered) and Settlement Monitoring (Section 6.6.5) Jib Crane Removal (if required) (Section 6.6.2.1) Unexpected Finds Protocol (Section 6.6.6) Jib Crane mitigation measures (Section 6.6.7)	Site Engineer/Supervisor Environmental Coordinator	Moderate
Lansdowne Road construction of the permanent road bridge	Project Manager Project Engineer Site Supervisor	Damage or destruction of heritage items (arising from direct impact or vibration)		Site Engineer/Supervisor Environmental Coordinator	Minor to negligible

A summary of known potential impacts to heritage items arising from the SBT Works is provided in Table 16 with additional details on the St Marys Railway Station Group in Section 6.6.2.1. Relevant mitigation measures are summarised in Table 16 and detailed in the sections that follow.

6.6.2.1. St Marys Railway Station Group

The SBT Works will be taking place within the curtilage of the St Marys Railway Station Group, listed on the SHR (01249), TAHE S170 Heritage and Conservation Register (4801036), and Penrith LEP 2010 (I282). The SBT Works will include extensive excavation within the LEP curtilage of the item but will not involve physical impacts within the SHR curtilage (Figure 5).

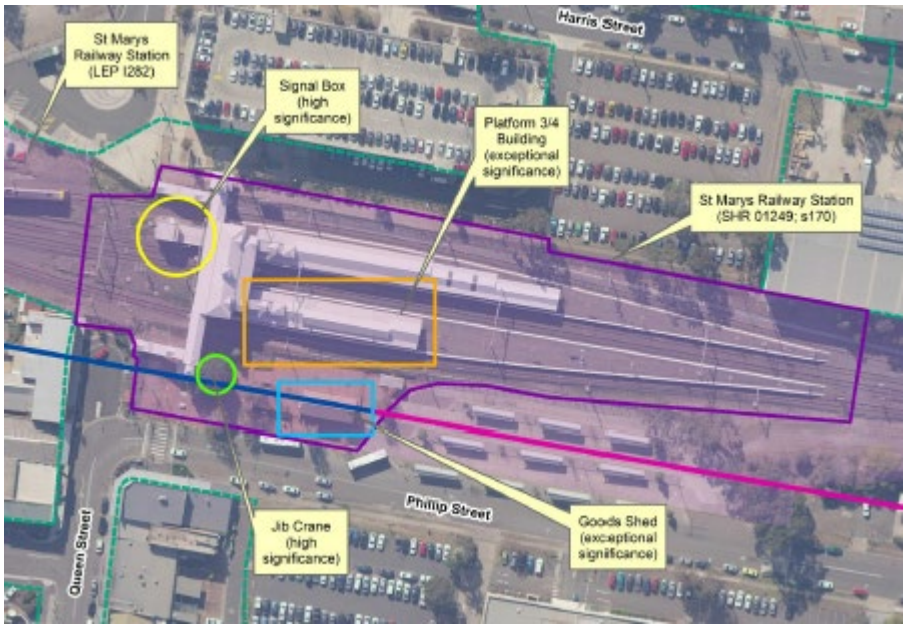


Figure 5 St Marys Railway Station Group heritage curtilages (Artefact, 2020)

Although no direct impacts within the SHR curtilage are proposed, the SBT Works will be in close proximity to the Goods Shed and Jib Crane, including tunnelling directly beneath these items (Figure 5).

The St Marys Goods Shed is listed on the SHR as a component of the St Marys Railway Station Group. The above ground SBT Works will not directly impact the Goods Shed. Indirectly, site establishment and excavation works will have a temporary visual impact on the Goods Shed for the duration of the SBT Works. The EIS assessed the potential for minor impacts to the Goods Shed due to vibration from tunnelling works, which could lead to cosmetic structural damage, and a maximum predicted ground movement of up to 54 millimetres, which could lead to minor impacts from settlement. Condition E21 permits these impacts subject to further investigation into settlement. Mitigation measures outlined in Section 6.6.7 are designed to minimise the potential for impacts to occur to the St Marys Goods Shed through vibration and settlement.

Further investigations were conducted by CPBG and documented in the Settlement and Predicted Effects Report (SMWSASBT-CPG-SWD-SW000-GE-RPT-040601-A.01) and the Building Effects Report (SMWSASBT-CPG-SWD-Sw000-GE-RPT-030201). The latter predicted a differential settlement in the order of 5mm which may result in masonry cracks and slight sticking of doors and windows.

The Jib Crane is listed on the SHR as a component of the St Marys Railway Station Group and is located within the SHR curtilage (Figure 5). The EIS does not assess the potential for impacts

through vibration and settlement to the Jib Crane, as it assumed that the item would be removed before construction. The Submissions Report and REMM NAH7 clarifies that the item will only be removed if necessary. CPBG do not currently propose to remove the Jib Crane as a part of the SBT works. However, where there is uncertainty regarding the potential for works to impact the Jib Crane, an appropriately qualified heritage consultant will be engaged to provide advice to CPBG. Refer to Section 6.6.7 for mitigation measures to minimise the potential for impacts to the Jib Crane.

Table 16: Overview of impacts to heritage items relating to SBT Works

Heritage item	Summary of Impact Assessment (Artefact 2021)	Impacts	Summary of SBT Works impacts	Mitigation measures
St Marys Railway Station Group	**Direct impact – slight alteration of heritage elements** The proposed excavation for the cut-and-cover station box would occur within the LEP listing curtilage but would not impact significant fabric associated with the existing St Marys Railway Station. The construction of the aerial concourse, lifts and connections to the existing St Marys Railway Station would occur within the LEP, SHR and s170 curtilage and would result in modifications to Platform 3/4 (moderate significance) and Platform 1/2 (little significance). No direct impact is proposed to the Platform 3/4 building (moderate significance), Goods Shed (exceptional significance), and signal box (high significance). The jib crane would be temporarily relocated during construction and then reinstated in consultation with a heritage advisor.	Minor	The SBT Works do not include construction of the new aerial concourse, which will have a moderate impact on the St Marys Railway Station Group. The SBT Works include above ground works associated with tunnelling which will have a moderate temporary visual impact on the item and may result in a minor impact to the Goods Shed from vibration and settling. The 'minor to negligible" vibration and settlement impact (as determined by the EIS) is supported by further investigations conducted by CPBG and documented in the Settlement and Predicted Effects Report (SMWSASBT-CPG-SWD-SW000-GE-RPT-040601-A.01) and the Building Effects Report (SMWSASBT-CPG-SWD-Sw000-GE-RPT-030201). The latter predicted a differential settlement in the order of 5mm which may result in masonry cracks and slight sticking of doors and windows.	Earth Pressure Balance TBM (Section 6.6.7) Archival Recording (undertaken by the Advanced and Enabling Works) Archaeological Method Statement (Section 6.6.4) Vibration Monitoring (if triggered) and Settlement Monitoring (Section 6.6.5) Jib Crane Removal (if required) (Section 6.6.2.1) Unexpected Finds Protocol (Section 6.6.6) Jib Crane mitigation measures (Section 6.6.7)
	Permanent indirect impact – alteration of heritage setting The aerial concourse is a large structure and would not be sympathetic in material and scale with the Victorian-era architecture and character of the existing St Marys Platform 3/4 building and Goods Shed.	Moderate		
	Temporary indirect impact – alteration of heritage setting (construction phase) During construction, elements including a site compound, laydown areas, storage facilities and tunnel boring machine retrieval sites would be visible in the vicinity of the station. An acoustic shed and crane may also be required. These elements, along with the station box excavation and construction of the new aerial concourse, would result in significant alteration to the setting of the station.	Moderate		

Heritage item	Summary of Impact Assessment (Artefact 2021)	Impacts	Summary of SBT Works impacts	Mitigation measures
	Vibration impact Vibration may have the potential to result in cosmetic structural damage to the Goods Shed which would be retained in-situ. Potential vibration impact on other heritage significant structures of the station would be negligible. The jib crane would be temporarily relocated during construction and therefore vibration impacts on this item would not occur	Minor to negligible		
	Settlement impact Potential settlement impacts on the Goods Shed would be minor while potential settlement impacts on the station platforms and Platform 3/4 building would be negligible.	Minor to negligible		
	Overall impact on significance	**Moderate**		
Queen Street Post-War Commercial Building	**Direct impact – demolition** This item is located outside the construction footprint and would not be directly affected.	Nil	The SBT Works include tunnelling, which may result in a negligible impact from vibration and settlement.	Vibration Monitoring (if triggered) (Section 6.6.5)
	Permanent indirect impact Project works in the vicinity of this item would not alter significant views to the St Marys Post-War Commercial Building.	Negligible		
	Temporary indirect impact (construction phase) Elements including a construction site would be visible, although partially obscured, resulting in a minor impact on this item.	Minor		
	Vibration impact Potential construction vibration impacts on this item are expected to be negligible.	Negligible		
	Settlement impact Potential settlement impacts on this item are expected to be negligible.	Negligible		

Heritage item	Summary of Impact Assessment (Artefact 2021)	Impacts	Summary of SBT Works impacts	Mitigation measures
	Overall impact on significance	**Negligible**		
St Marys Munitions Workers Housing	**Direct impact** Proposed works in this area are limited to adjacent roads and car park areas and there would be no direct impact on the housing fabric itself.	Nil	The SBT Works include site levelling and tunnelling, however the impact of these works on the St Marys Munitions Workers Housing has been assessed as negligible.	Vibration Monitoring (Section 6.6.5)
	Permanent indirect impact Project works in the vicinity of this item would not alter the visual setting of the former worker's housing area.	Negligible		
	Temporary indirect impact (construction phase) Elements including a construction site would be visible. However, these works would not intrude within the boundary nor alter the setting of this item.	Negligible		
	Vibration impact Potential construction vibration impacts on this item are expected to be negligible.	Negligible		
	Settlement impact Potential settlement impacts on this item are expected to be negligible.	Negligible		
	Overall impact on significance	**Negligible**		
Great Western Highway Milestone	The proposed works see temporary visual impacts resulting from the Claremont Meadows Intermediate Services Facility and would overall result in nil impacts to the significance of the Great Western Highway Milestone.	Nil	No impact anticipated.	No mitigation required
Four winds	The project would result in nil impacts to the significance of Four Winds – Dwelling on account of the temporary visual impacts associated with the Claremont Meadows Intermediate Services Facility.	Nil	No impact anticipated.	No mitigation required

Heritage item	Summary of Impact Assessment (Artefact 2021)	Impacts	Summary of SBT Works impacts	Mitigation measures
Brick house	The project would result in nil impacts to the significance of Brick House on account of the temporary visual impacts associated with the Claremont Meadows Intermediate Services Facility.	Nil	No impact anticipated.	No mitigation required
Former OTC Site Group	As no significant fabric associated with the former OTC Site Group (Former) remains (removed by a separate package of works), the proposed SBT Works in the area would result in nil impacts to the significance of the item	Nil	No impact anticipated.	No mitigation required
Two Water Tanks	The proposed works would occur within the curtilage of the Former Water Tanks, however as there is no significant remnant fabric (removed by a separate package of works), the project would result in nil impacts to the significance of the item.	Nil	No impact anticipated.	No mitigation required
Kelvin Park Group	**Direct impact** The project alignment would be in tunnel below the former driveway to Badgerys Creek Road (part of the LEP curtilage). No works would occur within the SHR curtilage.	Nil	The SBT Works do not include the construction of the Aerotropolis Station (only the station box). Site establishment and any other temporary above-ground works within the Bringelly RAAF Base area will have a temporary visual impact.	Archival Recording (undertaken by the Advanced and Enabling Works)
	Permanent indirect impact – alteration of heritage setting Aerotropolis Core Station would be visible from this item from a distance of around 650 m away and would not affect views to this item.	Minor		
	Temporary indirect impact – alteration of heritage setting (construction phase) Aerotropolis Core Station construction site would be temporarily visible from this item but from some distance away	Minor		
	Vibration and settlement impact No potential vibration and/or settlement impacts are expected.	Nil		
	Overall impact on significance	**Minor**		
	Direct impact – partial demolition	Major		

Heritage item	Summary of Impact Assessment (Artefact 2021)	Impacts	Summary of SBT Works impacts	Mitigation measures
Bringelly RAAF Base	Construction for Aerotropolis Core Station would require the demolition of several buildings within the former RAAF Base site (the main receiving building and tower, fire hose shed, and dangerous goods store). Only three ancillary buildings of moderate and little significance would remain.		Site levelling and demolition of the Bringelly RAAF Base was undertaken during the Advanced and Enabling Works stage. As such, the SBT Works will not impact the Bringelly RAAF Base.	Archival Recording (undertaken by the Advanced and Enabling Works)
	Overall impact on significance	**Major**		

6.6.3. Archival recording

Reflecting the requirements of Conditions E24 and E25 and REMM NAH3, archival photographic digital recording will be undertaken for all listed heritage items which will be affected by the SBT Works.

Archival recordings, where triggered, will be undertaken prior to the commencement of relevant works and documented in an Archival Recording Report. The recordings will include buildings, structures and landscape features and detailed maps showing the location of features. The archival recording will be prepared in accordance with How to Prepare Archival Records of Heritage Items (NSW Heritage Office, 1998) and Photographic Recording of Heritage Items Using Film or Digital Capture (NSW Heritage Office, 2006).

Within 12 months of completion of works on heritage items, the archival recording report for St Marys Railway Station (if triggered) will be submitted to the Planning Secretary, Penrith City Council, Heritage NSW, St Marys & District Historical Society.

6.6.4. Archaeological Method Statement

The Sydney Metro – Western Sydney Airport Archaeological Research Design (Artefact 2021) (ARD) identifies that, should construction works impact nominated areas of low-moderate archaeological potential, impacts should be managed in accordance with an Archaeological Method Statement (AMS). To this end, an AMS has been prepared for the St Marys Station which is listed on the State Heritage Register as an item of State Significance (SHR 01249) (Annexure F). The AMS identifies the historic archaeological potential and significance associated with the study area to ensure the protection of its archaeological values. The AMS will be implemented for the duration of the SBT Works.

Prior to commencement of archaeological excavation works detailed in the AMS, a suitably qualified Excavation Director was nominated by CPBG (in consultation with Heritage NSW) and approved by the Planning Secretary. The nominated Excavation Director will comply with Heritage Council of NSW's Criteria for Assessment of Excavation Director (September 2019) undertake the following roles and responsibilities:

- Oversee and advise on matters associated with historical archaeology
- Be present to oversee archaeological excavation
- Advise on archaeological issues
- Advise on the duration and extent of oversight required during archaeological excavations consistent with the ARD.

On completion of the archaeological investigation program, a non-Aboriginal Archaeological Excavation Report will be prepared detailing the results of the fieldwork and post-excavation analysis. Addressing the research design, the Report will provide details of further historical research either undertaken or to be carried out and archaeological excavations undertaken (with artefact analysis and identification of a final repository for finds). The Report will be prepared in accordance with current heritage best practice, guidelines and standards required by the Heritage Council of NSW and Heritage NSW, and the requirements of a standard excavation permit.

The non-Aboriginal Archaeological Excavation Report will be submitted to the Planning Secretary, relevant councils and Heritage NSW for information within 12 months of completing the SBT Works in relation to heritage items. Copies of the Report will also be provided to relevant local historical societies and local libraries.

6.6.5. Vibration monitoring

In accordance with REMM NAH2 and NAH6, vibration monitoring will be undertaken of the following heritage items during SBT Works:

- St Mays Railway Station Group (including the Goods Shed)
- Queens Street Post-War Commercial Building

- St Marys Munitions Workers Housing.

As per Condition E54, vibration monitoring will be undertaken in accordance with the Construction Noise and Vibration Management Sub-Plan (SMWSASBT-CPG-1NL-NL000-NV-PLN-000001), relevant Detailed Noise and Vibration Impact Assessments, and in response to specialist heritage advice. Where the preferred values for vibration are likely to be exceeded, the construction methodology will be reviewed in consultation with heritage advisors and additional mitigation measures implemented where necessary.

In accordance with Condition E55, CPBG will engage a suitably qualified heritage consultant for specialist advice on methods and locations for installing equipment used for vibration, movement and noise monitoring at the St Marys Railway Station Group, Queen Street Post-War Commercial Building, and St Marys Munitions Workers Housing. In accordance with NAH2, heritage advice will be sought to develop solutions to managed potential ground movement impacts to the St Marys Goods Shed (refer to Section 6.6.7).

6.6.6. Unexpected Heritage Finds Protocol

Sydney Metro has prepared the following procedures which will be utilised (as required) in the delivery of the SBT Works:

- Unexpected Heritage Finds Procedure (SM-18-001105232) version 4.1 dated May 2021
- Exhumation Management Procedure (SM ES-PW-315/5.0) version 5.1 dated May 2021.

These Procedures have been submitted to the Planning Secretary of DPE in accordance with Condition E35 as acknowledged in DPE's letter of 30 September 2021. The requirements of the Sydney Metro procedures are summarised in the Aboriginal and Historic Heritage Unexpected Finds Workflow (Annexure B).

6.6.7. Heritage protection

St Marys Goods Shed mitigation measures

- Prior to commencement of Bulk Excavation and Tunnelling Works, install protective fencing around the Goods Shed and install New Jersey barriers in front of the fence on the eastern side to ensure the shed is not destroyed, modified or otherwise adversely affected except as detailed in the EIS
- Prior to commencement of Bulk Excavation and Tunnelling Works, prepare a pre-construction dilapidation survey in addition to an archival recording to identify areas of existing cracking to be monitored during SBT Works
- Specific instrumentation for settlement monitoring has been installed at St Marys. Prior to commencement of Bulk Excavation and Tunnelling works, assessments of potential ground movement impacts will be finalised in consultation with a suitably qualified heritage architect (refer to Section 6.12 for further details on this process)
- Prior to commencement of Bulk Excavation and Tunnelling Works, establish acceptable ground movement criteria in consultation with a suitably qualified heritage architect and, if required, identify and implement feasible measures in consultation with a suitably qualified heritage architect to reduce or mitigate the effects of ground movement on the Goods Shed
- Monitor ground movement during Bulk Excavation and Tunnelling Works
- Utilise Earth Pressure Balance (EPB) TBMs to minimise the risk of settlement during tunnelling operations
- Utilise temporary pile casings as required to prevent ground loss during piling
- Install ground support (consisting of stressed anchors and shotcrete) prior to excavation of deeper flitches.

On completion of construction, should there be any damage to the Goods Shed which is attributed to the SBT Works, the building will be repaired in consultation with a suitably qualified heritage architect.

Jib Crane mitigation measures

Where the Jib Crane is retained in its current location for the duration of the SBT Works, the following mitigation measures will be implemented:

- Prepare a pre-construction dilapidation survey in addition to an archival recording
- Utilise EPB TBMs to minimise risk of settlement during tunnelling operations
- Undertake monitoring for vibration impacts in accordance with REMM NAH6.

If relocation of the Jib Crane is required, the mitigation measures outlined in Condition E20 and REMM NAH7 will be implemented. This will include the preparation of a detailed methodology for the removal and reinstatement of the Jib Crane in consultation with an appropriately qualified heritage consultant and Heritage NSW. The methodology will include:

- Determination of whether crane is operational, to ensure that it is restored to its existing condition at the completion of works
- Provision for detailed documentation of the Jib Crane, including as built drawings (architectural, structural etc), assessment of fabric and condition of individual elements
- A methodology for dismantling and reassembly of the Jib Crane
- A methodology and requirements for storage to ensure the item is not damaged after disassembly
- Provision for a detailed index that indicates the size of each element and its exact location for storage.

Dismantling and reassembly, if required, will be completed under the supervision of a heritage consultant experienced in the conservation of heritage machinery, and prior to the issue of an Occupation Certificate.

6.6.8. Moveable heritage and salvage of significant fabric

REMM NAH1 makes provision for the salvage of significant fabric from items in the St Marys Railway Station Group and Bringelly RAAF Group. The SBT Works will not occur within the SHR curtilage of the St Marys Railway Station Group and are not anticipated to impact any significant fabric associated with the item. As such, no salvage of significant fabric will occur at St Marys Railway Station Group as a part of the SBT Works.

The Bringelly RAAF Base group is a relatively recent item, with all structures associated with the item constructed in the 1950s and 1960s. Site levelling and demolition of the Bringelly RAAF Base was undertaken during the Advanced and Enabling Works stage and as such, salvage requirements are not triggered by the SBT Works.

6.6.9. Built heritage

The architectural design for the SBT Works will take account of the local heritage context and be sympathetic to local heritage character. This will include using sympathetic building materials, colours and finishes, and ensuring that significant elements are not obstructed or overshadowed. By adhering to the Sydney Metro – Western Sydney Airport Design Guidelines, the design will aim to minimise adverse impacts to heritage buildings, elements, fabric, and heritage significant settings and view lines that contribute to the overall significance of heritage items.

The Design Review Panel and Heritage Working Group will be consulted in regard to the design, form and material of new built structures that may impact heritage items. In addition, consultation will be undertaken with the Heritage Council and relevant stakeholders during the design of works that have the potential to impact State significant items including St Marys Railway Station.

Refer to Section 6.6.3 for details on archival recording.

6.7. Visual amenity management procedure

The visual impacts of the SBT Works will be minimised through effective screening, protection of landscape values, housekeeping and management of light spill. Wherever practicable, the design of ancillary facilities will incorporate architectural treatment and finishes that reflect the context within which the sites are located.

The process for managing visual impacts, including environmental mitigation measures, is detailed in the Visual Amenity Management Procedure (Annexure B).

6.8. Flooding

The mitigation of climate change impacts and flood related risks during construction of the SBT Works will be achieved through:

- Staging of works to reduce the duration of activities within the floodplain
- Daily and continuous monitoring of weather forecasts and storm events, rainfall levels and water levels in key watercourses to identify potential flooding events and related flood emergency response
- Consultation with NSW State Emergency Services and relevant local councils to ensure consistent approaches to the management of flood events
- Provision of flood-proofing to excavations at risk of flooding during construction, where reasonable and feasible, such as raised entry into shafts and/or pump-out facilities to minimise ingress of floodwaters into shafts and the dive structure
- Development of localised stormwater and flooding management plans at St Marys Station and Aerotropolis Core Station to ensure these stations are protected from localised flooding. The plans will include procedures to ensure that threats to human safety and damage to infrastructure are not exacerbated during the construction period
- Design stage review of site layout and staging of construction works to avoid or minimise obstruction of overland flow paths and limit the extent of flow diversion required (Annexure C).

In addition to the above measures, the Emergency Response Plan (SMWSASBT-CPG-1NL-NL000-SF-PLN-00004) will specifically address flooding, flash flooding and evacuation procedures.

6.9. Hazardous substances

A hazardous material survey will be undertaken prior to stripping and demolition of structures and buildings that are suspected of containing hazardous materials (particularly asbestos and lead paint). As detailed in the Waste and Recycling Management Sub-Plan, hazardous materials and special waste (such as asbestos) will be removed and disposed of in accordance with the relevant legislation, codes of practice and Australian Standards, including:

- Work Health and Safety and Regulation 2017 (NSW)
- How to Safely Remove Asbestos (Safe Work Australia, 2019)
- AS-4361.2-2017- Guide to hazardous paint management, Part 2: Lead paint in residential, public and commercial buildings.

All hazardous substances that may be required for the SBT Works will be stored and managed in accordance with the:

- Storage and Handling of Dangerous Goods Code of Practice (WorkCover NSW, 2005)
- Hazardous and Offensive Development Application Guidelines: Applying SEPP 33 (DPIE, 2011)
- *Work Health and Safety Act 2011* (Commonwealth and NSW)
- *Environmentally Hazardous Chemicals Act 1985* (NSW).

Hazardous materials management and mitigation measures will be reflected in relevant SEPs and assessed through environmental inspections.

6.10. Third Party Property

The SBT Works will be undertaken with the objective of protecting infrastructure and property and minimising impacts/interference to third party property. This will be achieved through the implementation of Sub-Plans, SEPs (Section 5.2), and inspection and monitoring activities (Section 7.4.2 and Section 5.5, respectively).

Assurance will be provided to third party property owners through the preparation of Pre- and Post-Construction Condition Survey Reports for all buildings, structures and utilities identified in the EIS and Submissions Report as being at risk of damage (Table 17).

Table 17: Condition reports

Condition	Report	Requirement	Timing	Responsibility
E84	Pre-Construction Condition Survey Report	Prepared for all buildings, structures and utilities identified in the EIS and Submissions Report as being at risk of damage.	Pre-construction Condition Survey Reports to be provided to the relevant owners of the items no later than one month before the commencement of any work that could impact on the subject surface / subsurface structure.	Suitably qualified and experienced person
E85	Post-Construction Condition Survey Report	Prepared for all buildings, structures and utilities where a Pre-Construction Condition Survey Report was prepared.	Post-construction Condition Survey Reports to be provided to the landowner of each item surveyed, no later than three months following the completion of the work that could impact on the subject surface / subsurface structure.	
E107	Road Dilapidation Report	Prepared for any local road to be used by a heavy vehicle for the purpose of the SBT Works.	Road Dilapidation Reports to be provided to the relevant road authority within three weeks of completing the survey and no later than one month before the road is used by heavy vehicles.	

Utilities, services and other infrastructure potentially affected by the SBT Works will be identified through the Dial Before You Dig and Permit to Excavate process prior to commencement of surface disturbance works. Alterations to services, including diversion, protection or support, will be determined through negotiation with service providers and disruption will be avoided where possible. Where service disruptions are not avoidable, customers will be provided adequate notification.

In the event of property damage, directly or indirectly arising from the SBT Works, CPBG will rectify the damage at no cost to the owner. Alternatively, CPBG may pay compensation for the property damage as agreed with the property owner. Rectification or compensation will be undertaken within 12 months of completion of the work identified in Condition E84 unless another timeframe is agreed with the owner of the affected surface or sub-surface structure or recommended by the Independent Property Impact Assessment Panel (IPIAP).

If damage to roads occurs as a result of the SBT Works, CPBG will either (at the Relevant Road Authority's discretion):

- Compensate the Relevant Road Authority for the damage so caused; or
- Rectify the damage to restore the road to at least the condition it was in pre-work as identified in the Road Dilapidation Report.

6.11. Cumulative construction impacts procedure

Cumulative impacts of the Project were assessed as part of the EIS and are summarised as follows:

- Transport – Temporary increase in construction vehicles on the road network due to the overlapping construction activities from the M12 Motorway, Elizabeth Drive and Western Sydney International.
- Noise and vibration – Cumulative noise impacts on sensitive receivers at St Marys arising from the St Marys Intermodal and the St Marys Commuter Car Park Extension. Similarly, noise sensitive receivers at Badgerys Creek would be affected by the future M12 Motorway.
- Biodiversity – Potential cumulative biodiversity due the interaction of surrounding projects, including the Western Sydney International, M12 Motorway and The Northern Road.

When considered in isolation, the environmental and community impacts of an individual project or stage of project may not be significant; however, when combined with the effects of other developments, the resultant cumulative effects can potentially result in a greater extent, magnitude or duration of impacts.

The management of cumulative impacts will occur in accordance with the Sydney Metro Cumulative Construction Impacts Management Plan. Reflecting the requirements of the Plan, coordination and consultation with the following stakeholders will occur, as required and as per relevant third party agreements, to coordinate interfacing projects:

- DPE (through Sydney Metro)
- Sydney Metro (with respect to other Sydney Metro packages of works)
- Western Sydney Airport
- TfNSW (via the Traffic and Transport Liaison Group)
- Western Parkland City Authority
- Sydney Water
- Local Councils
- Emergency service providers
- Utility providers.

The procedure for coordination and consultation with these stakeholders will include:

- Provision of regular updates of the detailed construction program, construction sites and haul routes at scheduled interface meetings
- Identification of key potential conflict points with other construction projects and SBT Works
- Development of mitigation strategies to manage the cumulative impacts of the SBT Works and other interfacing projects. Depending on the nature of the conflict, this could involve:
  - Adjustments to the construction program, work activities or haul routes; or adjustments to the program, activities or haul routes of other construction projects
  - Coordination of traffic management arrangements between projects or work zones
  - Coordination of noise generating activities and respite, such as out of hours works and highly noise intensive works.

The level of coordination required to manage cumulative impacts will be dependent on the level of concurrent works in the vicinity of each station. When concurrent works are occurring, regular meetings will be undertaken to develop coordinated community notifications, share out of hours works schedules and share information on stakeholder preferences.

Further details on the management of cumulative impacts across the Project are included in the Sydney Metro Cumulative Construction Impacts Management Plan.

6.12. Ground movement and settlement

6.12.1. Independent Property Impact Assessment Panel

Prior to commencement of tunnelling activities, Sydney Metro will establish an Independent Property Impact Assessment Panel (IPIAP) and inform the Planning Secretary of the membership. All costs incurred in the establishing and implementing of the panel will be borne by Sydney Metro regardless of the party which makes a referral to the IPIAP. The findings and recommendations of the IPIAP are final and binding.

The IPIAP, comprised of geotechnical and engineering experts independent of the design and construction team, will be responsible for:

- Independently verifying condition surveys undertaken under Conditions E84 and E85
- Resolving property damage disputes
- Establishing ongoing settlement monitoring requirements.

6.12.2. Monitoring

Prior to commencement of Bulk Excavation and Tunnelling Works and during design development, CPBG will undertake further assessment to ensure that damage to buildings, structures, road and rail infrastructure and utility assets at risk of ground movement impacts are avoided or managed. Consultation will be undertaken with infrastructure and asset owners to determine appropriate ground movement criteria for the assessment and, if required, to agree management measures to manage potential impacts.

Where building damage risk is rated as slight, moderate or high (as per Rankin 1988), a structural assessment of the affected buildings/structures will be carried out by a structural engineer and specific measures implemented to address the risk of damage. Additional consultation will be undertaken with a suitably qualified heritage architect where the building is heritage listed.

CPBG will monitor settlement for any period beyond construction if directed by the IPIAP and not less than six months after settlement has stabilised. The results of the monitoring will be made available to the Planning Secretary and ER on request.

7. Environmental Management System

7.1. Overview

CPBG will deliver the SBT Works using the CPB EMS which has been developed in accordance with the business and legislative requirements set out in the CPB Management System (CMS). The CPB EMS is certified to comply with AS/NZS ISO 14001:2016 Environmental Management Systems – Requirements with guidance for use and is consistent with the Sydney Metro - Western Sydney Airport Sustainability Plan and Sydney Metro Environment and Sustainability Statement of Commitment. In addition, CPBG is required work under Sydney Metro's Environment and Sustainability Management System.

An overview of the EMS elements is illustrated in Figure 6.

In addition, CPBG is required work under Sydney Metro's Environment and Sustainability Management System. Relevant requirements are addressed throughout this document in accordance with the CEMF (refer to the Compliance Table).

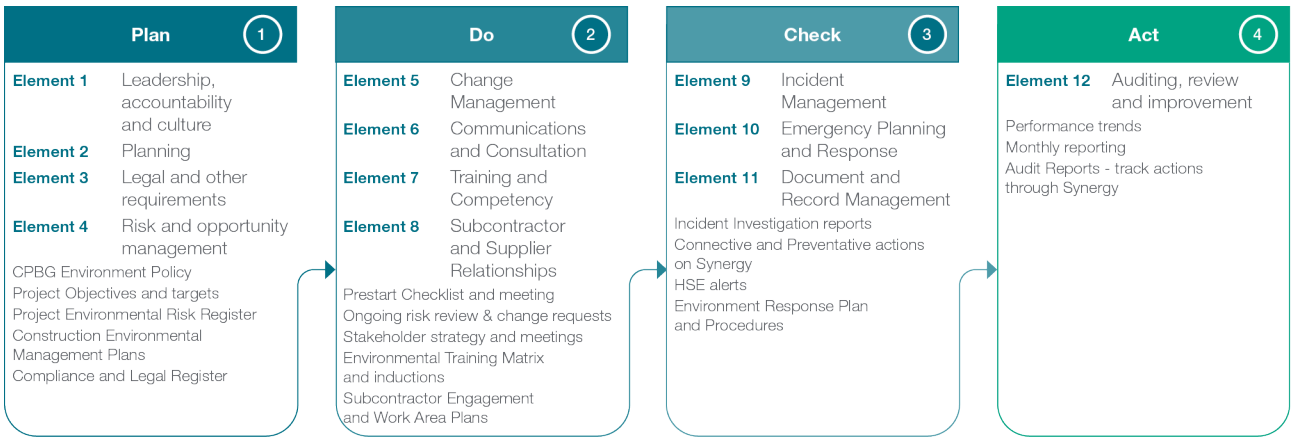


Figure 6: EMS Elements overview

7.2. Element 1 - Leadership, accountability and culture

Guided by the Environment and Sustainability Policy (Annexure A), CPBG will demonstrate environmental leadership and accountability by:

- Leading the creation of a consultative and proactive culture that ensures environmental compliance and 'No Harm' as a driver of work behaviours as set out in the CBPG Environment and Sustainability Policy (Annexure A)
- Communicating approval and environmental expectations, including the objectives and targets set out in Section 1.3 and performance outcomes established in the EIS (Annexure G)
- Using environmental procedures and SEPs as central tools to manage site environmental performance. Any person who fails to follow these documents while undertaking works will be managed in line with CPBG's requirements for counselling, discipline and, if needed, termination
- Requiring all personnel with leadership roles to participate in environmental management activities, including environmental training, toolbox talks, incident response and continual improvement.

This approach will ensure all staff, employees and subcontractors will actively drive continual improvement in the environmental performance of the SBT Works.

7.3. Element 2 – Governance and planning

CPBG will formally and systematically plan and manage environmental performance by:

- Providing comprehensive resources for environmental management, including in-house and expert consultants, as set out in Section 4, and training and IT systems to streamline environmental reporting and record-keeping
- Preparing required environmental planning documents and obtaining approval in a timely and efficient manner
- Implementing approved environmental planning documents for SBT Works
- Attending environment and planning coordination meetings which will include representatives from the CPBG environment team, ER, IC and Sydney Metro. These meetings will provide an opportunity to discuss:
  - Environment planning approval documents and approvals progress
  - Any observations, issues and trends arising from ER inspections
  - Management of any environmental complaints
  - Any non-compliances
  - Upcoming works.

7.4. Element 3 - Legal and other compliance monitoring and tracking

CPBG will identify and comply with contractual requirements and all applicable environmental legislation and standards by:

- Compliance Tracking (Section 7.4.1) – Ensuring relevant legal, contractual and other requirements are identified, embedded in environmental documents, and subject to regular compliance tracking
- Planning and Hold Points (Annexure B) – Ensuring work is planned and executed in accordance with compliance obligations and implementing internal Hold Points in response to material risks
- Environmental Inspections (Section 7.4.2) – Undertaking regular inspections to assess the adequacy of controls
- Non-Compliance (Section 7.4.3) – Raising corrective actions if a non-compliance is detected that cannot be resolved through an inspection or audit-action process.

7.4.1. Compliance tracking

The Conditions and REMMs that apply to the SBT Works are listed in Annexure G, including a reference to where each requirement is addressed by this Plan or other project documentation. Compliance against the Conditions and REMMs will be reviewed by the Environment Manager at least annually as part of the management review (Section 7.13.3).

In addition, the Environment Manager will review updates to legislation, standards and codes of practice received via CPB Contractors subscription services. The relevance of updates will be assessed, and actions undertaken as required.

7.4.2. Environmental inspections

Weekly and rainfall site inspections

The Environment Manager (or delegate) will undertake weekly, pre-rainfall and post-rainfall inspections of work sites to evaluate the adequacy of environmental controls.

Any required maintenance and/or deficiencies in environmental controls will be recorded on an Environmental Inspection Checklist and actions will be closed out in accordance with the identified priority. Evidence of action close-out will be retained on file.

ER and Sydney Metro inspections

The ER and Sydney Metro staff will undertake regular inspections of works sites throughout the SBT Works. Inspections by the ER and Sydney Metro project staff will occur on a weekly basis or as agreed, depending on the complexity and anticipated risks associated with the works. A member of the CPBG environment team will participate in all ER and Sydney Metro inspections.

Deficiencies and required actions will be analysed and prioritised at the completion of the inspection and timeframes for implementation of corrective actions agreed.

Daily inspections

A daily inspection will be carried out by the Supervisor of each work area and will include a check of relevant environmental controls and resources required to ensure effective operation and maintenance.

Shutdown inspections

Shutdown inspections will be undertaken prior to any planned shut down of worksite for more than four days (i.e. Christmas).

7.4.3. Environmental non-compliance

An environmental non-compliance is an occurrence or set of circumstances or development that is a breach of a permit, approval or licence. Potential and actual non-compliances will be classified and reported in accordance with the Sydney Metro Environmental Incident Classification and Reporting Procedure.

7.4.3.1. SSI 10051 Planning Approval non-compliance

Reflecting the requirements of Condition A44 and Appendix A of the SSI 10051 Planning Approval, the Planning Secretary will be notified in writing within seven days after CPBG becomes aware of any non-compliance. CPBG will provide the notification to Sydney Metro who will lodge the notification to the Planning Secretary via the Major Projects Website. The non-compliance notification will identify:

- The CSSI (including the application number for it)
- Set out the Condition that the SBT Works is non-compliant with
- Detail the way in which the SBT Works does not comply and the reasons for the non-compliance (if known)
- Detail what actions have been or will be undertaken to address the non-compliance.

The ER will also be notified of environmental non-compliances within the ER Monthly Report.

For each non-compliance, suitable corrective or preventative action (or actions) will be identified and implemented to rectify the event and prevent reoccurrence. Corrective / preventative actions and improvement opportunities will be entered into the CPBG management system database and 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.

7.4.3.2. EPBC Act Approval non-compliance

A non-compliance against EPBC Act Approval conditions or commitments made in plans will be notified to the Department of Agriculture, Water and the Environment (via the Sydney Metro Environment Manager). The notification will be given in writing as soon as practicable, and no later than two business days after becoming aware of the non-compliance. The notification will specify:

- Any condition which is or may be in breach
- A short description of the non-compliance
- The location (including co-ordinates), date, and time of the non-compliance.

Within 10 business days, CPBG will provide the Department of Agriculture, Water and the Environment (via the Sydney Metro Environment Manager) with additional details of the non-compliance, including:

- Any corrective action or investigation which CPBG has already taken or intends to take in the immediate future
- The potential impacts of the non-compliance
- The method and timing of any remedial action that will be undertaken by CPBG.

7.5. Element 4 – Risk and opportunity management

CPBG will use a risk-based management approach during all stages of the SBT Works to identify, assess, control and review environmental risks and harness opportunities by:

- Holding workshops during design development with the design and construction teams to ensure that environmental requirements are identified, considered and fully integrated into the construction methodology.
- Ensuring environmental controls appropriate to the level of risk are identified, documented and implemented in environment procedures and Work Packs
- Ensuring the accountable person implements controls in accordance with procedural requirements
- Reviewing environmental risks regularly through inspections (Section 7.4.2) and auditing (Section 7.13.1).

7.6. Element 5 – Change management

During delivery, CPBG will identify and manage environmental consequences arising from permanent and temporary changes to the SBT Works by:

- Assessing the consistency of design changes against the SSI 10051 Planning Approval in line with Section 5.25 of the EP&A Act, and in consultation with Sydney Metro and the ER
- Identifying change in construction methodology, and if personnel feel these alternative work practices could adversely affect the environment, they will be altered only after consultation with the approvals, environment and sustainability team.

7.7. Element 6 – Communication and consultation

The CPBG approvals, environment and sustainability team will effectively and openly engage with external and internal stakeholders to create an environment of trust, openness and involvement. This will include:

- Internal Collaboration – Working collaboratively with the commercial, design, construction and communication teams to formulate integrated management strategies. Interdisciplinary meetings will be held on key multidisciplinary issues
- Agency Engagement – Effectively managing relationships with Agency stakeholders by:
  - Considering issues identified in the EIS submissions
  - Holding an agency workshop to provide relevant management plans for comment and updating the plans to address any relevant comments received
  - Holding regular meetings with agencies to provide updates on the construction process and receive any feedback
  - Recording and responding appropriately to all written requirements or directions received from DPE (Section 7.7.1).
- Community Engagement (Section 7.7.2) – Proactively engaging with the community and responding to complaints in accordance with the Community Communication Strategy (CCS) (SMWSASBT-CPG-1NL-NL000-CY-PLN-000002).

7.7.1. Directions from DPE

All written requirements or directions received from DPE will be complied with at all times (Condition A5), including in relation to:

- The environmental performance of the SBT Works
- Any document or correspondence in relation to the SBT Works
- Any independent appointment or dismissal made in relation to the SBT Works
- Any notification given to the Secretary under the terms of the SSI 10051 Planning Approval
- Any audit of the construction of the SBT Works
- The terms of the SSI 10051 Planning Approval and compliance with the terms l (including anything required to be done under the SSI 10051 Planning Approval)
- The carrying out of any additional monitoring or mitigation measures in respect of ongoing monitoring and management obligations, compliance with an updated or revised version of a guideline, protocol, Australian Standard or policy required to be complied with under the SSI 10051 Planning Approval.

7.7.2. Community engagement and/or notification

Sydney Metro has developed an Overarching Community Communication Strategy (OCCS) for the Sydney Metro Western Sydney Airport project. The OCCS incorporates both on and off-airport works, with the on-airport components being developed in consultation with Western Sydney Airport.

In accordance with the OCCS, CPBG have developed the CCS (SMWSASBT-CPG-1NL-NL000-CY-PLN-000002) for the SBT Works. The CCS details on the mechanisms to facilitate communication between project parties, stakeholders and the community in accordance with the Condition B1.

In addition to the CCS, a Small Business Owners Engagement Plan (SMWSASBT-CPG-1NL-NL000-CG-PLN-000001) has been prepared and will be implemented for St Marys to minimise impact on small businesses directly affected by construction activities. The plan was submitted to the Planning Secretary for information before the commencement of construction at St Marys.

Consultation and engagement with the community will occur in accordance with the Communication Strategy, the SSI 10051 Planning Approval, REMMs and SBT EPL Conditions. Regular engagement will occur with the community to discuss environmental performance, upcoming works, and any planned high-risk activities. Community liaison officers will be available at all times that works occur to assist the public with questions and complaints they may have in accordance with the Complaints Management System.

Additional community consultation will be undertaken prior to commencement of works that are scheduled outside of standard hours (Section 7.7.2). Reflecting the requirements of Condition E57, appropriate respite periods will be identified in consultation with the community at each affected location on a regular basis. This consultation will include (but not be limited to) providing the community with:

- A progressive schedule for periods no less than three months, of likely out-of-hours work
- A description of the potential work, location and duration of the OOHW
- The noise characteristics and likely noise levels of the work
- Likely mitigation and management measures which aim to achieve the relevant NMLs under Condition E43 (including the circumstances of when respite or relocation offers will be available and details about how the affected community can access these offers).

The outcomes of the community consultation, the identified respite periods and the scheduling of the likely OOWH will be provided to the ER, EPA and the Planning Secretary prior to the work commencing.

7.7.3. Complaints management

In accordance with Condition B2 to B10, a Complaints Management System has been developed by Sydney Metro. Relevant information that will be captured by CPBG in the Complaints Register includes:

- Number of complaints received
- Date and time of the complaint
- Number of people (in the household) affected in relation to a complaint, if relevant
- Method by which the complaint was made
- Any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect
- Issue of the complaint
- Means by which the complaint was addressed and whether resolution was reached, with or without mediation
- If no action was taken, the reason(s) why no action was taken.

Complainants will be advised of the following Collection Statement before, or as soon as practicable after, providing personal information:

- The Complaints Register may be forwarded to government agencies, including DPE, to allow them to undertake their regulatory duties
- By providing personal information, the complainant authorises CPBG to provide that information to government agencies
- The supply of personal information by the complainant is voluntary
- The complainant has the right to contact government agencies to access personal information held about them and to correct or amend that information.

Sydney Metro will include the Collection Statement on the Project website to make prospective complainants aware of their rights under the *Privacy and Personal Information Protection Act 1998* (NSW). For any complaints made in person, the complainant will be made aware of the Collection Statement.

The Complaints Register will be provided to the Planning Secretary upon request, within the timeframe stated in the request. The Complaints Register will also be provided to the ER on a weekly basis or as requested.

The Environment Manager will ensure that corrective actions arising from community complaints are applied in consultation with the appropriate construction staff and reflected in the CEMP as required. The Environment Manager will also manage compliance with complaint management conditions of the EPL.

Further details on the Complaints Management System, the complaints register, and the Community Complaints Mediator are provided in the Communication Strategy.

7.8. Element 7 – training and competency

To ensure effective implementation of this CEMP during the SBT Works, a Training Needs Analysis has been prepared and summarised in Table 18 which:

- Identifies that all staff are to receive environmental training
- Identifies the competency requirements of staff that hold environmental roles and responsibilities (as documented in this CEMP)
- Identifies appropriate training courses/events and the frequency of training to achieve and/or maintain these competency requirements.

Reflecting the outcomes of the Training Needs Analysis, a training schedule will be prepared that plans attendance at environmental training events, provides mechanisms to notify staff of their training requirements, and identifies staff who do not attend scheduled training events or who have

overdue training requirements. Environmental training events to be included in the training schedule are detailed in the sections that follow.

Table 18: Training Needs Analysis Summary

Role	Site induction	Incident response and notification	Erosion and sedimentation management	Environmental monitoring	Heritage management	Flora and fauna management	Environmental due diligence
Management							
Project Director	X	X			X	X	X
Construction Manager	X	X			X	X	X
Commercial Manager	X						X
Design Manager	X				X	X	X
Health & Safety Manager	X	X					X
Environmental Manager	X	X	X	X	X	X	X
Line Management							
Project Engineers	X	X	X				X
Site Engineers	X	X	X				X
Supervisors	X	X	X				X
Remaining Site Personnel							
Environmental Coordinators/ Advisors	X	X	X	X	X	X	X
Administration Staff	X						X
Leading Hands	X	X	X		X	X	X
Labourers	X	X	X		X	X	X
Subcontractors	X	X	X		X	X	X

7.8.1. Environmental induction

Prior to commencement of on-site work, all personnel (including sub-contractors) are required to attend a compulsory site induction that includes an environmental component. The purpose of the induction is to ensure all personnel are aware of the requirements of the CEMP, SSI 10051 Planning Approval and EPL.

Visitors to site for purposes such as deliveries and undertaking inspections will be required to be accompanied by inducted personnel at all times.

The environmental component of the induction will capture all elements of the CEMP, including:

- Requirements of Environment and Sustainability Policy and key performance indicators
- Due diligence, duty of care and responsibilities
- Environmental and compliance obligations under the terms of the SSI 10051 Planning Approval, EPL and other statutory instruments
- Potential environmental emergencies on site and the emergency response procedures
- Reporting and notification requirements for pollution and other environmental incidents
- Site specific issues and controls, including those described in environmental procedures
- Demarcation of construction boundary
- Requirements of the Driver's Code of Conduct
- Information about the community what to do when approached by a member of the public or media
- Summary of the significance of surrounding vegetation and fauna habitat in a regional context
- Location of mapping of environmentally sensitive areas marked as no-go zones
- Threatened species that may be encountered on site (where applicable)
- Points of contact for personnel if threatened species are encountered
- Descriptions of works where ecologists may be required to supervise or support personnel (where applicable)
- Overview of dam dewatering protocols (where applicable)
- Site weed and pathogen protocols
- Bushfire management procedures.

A record of all environment inductions and attendees will be maintained and provided weekly to Sydney Metro. The Environment Manager may authorise amendments to the induction at any time.

7.8.2. Toolbox talks, role-specific training and awareness

Toolbox talks will be delivered throughout the SBT Works to educate personnel on environmental issues, recurring hazards and procedural requirements. Environmental issues associated with biodiversity management to be considered for toolbox talks may include:

- Ensuring the location of sensitive areas are conveyed and understood by all site personnel, contractors and sub-contractors
- Compliance with designated no-go zones
- Observation of requirements regarding unexpected or anticipated threatened species finds and the action taken to resolve the situation.

Toolbox talk attendance is mandatory; attendees will sign an attendance form and the records will be maintained.

In addition to toolbox talks, targeted environmental awareness training will be provided to personnel with a specific authority or responsibility for environmental management or those undertaking an activity with an increased risk of environmental impact.

Environmental training will be enhanced through posters, booklets, or Alerts in worker crib sheds / break facilities.

7.8.3. Pre-Start Meetings

The Supervisor will conduct a pre-start meeting with the site workforce before the commencement of each shift. The pre-start meeting will be used to inform the workforce of activities to be undertaken during the shift, environmental protection practices, work area restrictions, hazards and other relevant information. All attendees will be required to sign on to the pre-start and acknowledge their understanding of the issues explained.

The environmental component of the pre-start meeting will be determined by relevant Supervisor and environmental personnel. Biodiversity matters that may be included in pre-start meetings include:

- Environmentally sensitive areas and no-go zones
- Threatened specifies that may be encountered on site
- Weed and pathogen management
- Points of contact for personnel if threatened species are encountered
- Introduction of ecologists that may be present to supervise or support personnel and
- Overview of dam dewatering protocols (where relevant).

7.9. Element 8 - Subcontractor and supplier management

CPBG will proactively consider environment and sustainability when procuring all supplier agreements and subcontracts, particularly:

- Specifying environmental and sustainability obligations in tender documentation where relevant
- Using the pre-award tender interview questionnaire to request detailed information on environmental performance, sustainability compliance and workforce details
- Appling environment, sustainability and workforce criteria in selecting subcontractors and suppliers
- Using the Supply Nation network to actively engage with Aboriginal enterprises
- Assessing compliance with local regulations and human rights standards for proposed supply contracts with a value over $5m where the proposed supplier undertakes some manufacturing in a developing country
- Providing sustainability training to high impact suppliers using the Supply Chain School.

7.10. Element 9 – Incident management

An incident (as defined in the SSI 10051 Planning Approval) is an occurrence or set of circumstances that causes or threatens to cause material harm and which may or may not be or cause a non-compliance with the terms of the SSI 10051 Planning Approval. Environmental harm includes pollution (air, water, noise, and land), contamination, impact to flora and fauna (either individual species or communities), damage to heritage items and adverse community impacts.

Material harm is defined in the SSI 10051 Planning Approval as harm that:

- Involves actual or potential harm to the health or safety of human beings or to the environment that is not trivial, or
- Results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding $10,000, (such loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good the harm to the environment).

7.10.1. Internal reporting

Incidents that cause or threaten to cause material harm will be notified immediately (verbally) to the Sydney Metro Environment Manager.

Incident reports will be provided to Sydney Metro Environment Manager and the ER, including lessons learnt and proposed measures to prevent the re-occurrence of a similar event. All reasonable efforts will be implemented to avoid and reduce impacts of incidents, with suitable controls enacted. Incidents will be closed out as quickly as possible, taking required action to resolve each environmental incident.

7.10.2. External Reporting

7.10.2.1. DPE Reporting

In accordance with Conditions A41 and A44, incidents that cause or threaten to cause material harm, require immediate written notification to be made to DPE (compliance@planning.nsw.gov.au) and the ER. The notification will identify the CSSI (including the application number and the name of the CSSI if it has one), and set out the time, date, location and nature of the incident. It will also describe any consequent non-compliance with the SSI 10051 Planning Approval.

A subsequent notification and report will be submitted to DPE within seven days in accordance with the requirements set out in Appendix A of the SSI 10051 Planning Approval.

Within 30 days of the date on which the incident occurred or as otherwise agreed to by the Planning Secretary, CPBG will provide the Planning Secretary (via the Sydney Metro Environment Manager) and any relevant public authorities (as determined by the Planning Secretary) with a detailed report on the incident addressing all requirements set out in Appendix A of the SSI 10051 Planning Approval, and such further reports as may be requested.

7.10.2.2. EPA Pollution Incident

The EPA will be immediately notified of pollution incidents which satisfy the definition of material harm (Section 7.10.2). Notification will be completed via the EPA Environment Line (telephone 131 555) in accordance with Part 5.7 of the POEO Act. In addition, the following agencies will be notified:

- Ministry of Health (NSW Health) (02 9391 9000)
- SafeWork NSW (131 050)
- Penrith City Council (where relevant) (02 4732 7777)
- Liverpool City Council (where relevant) (1300 362 170)
- Fire and Rescue NSW (1300 729 579).

A Pollution Incident Response Management Plan (PIRMP) has been prepared and will be implemented in accordance with the requirements of the EPL for the works. The PIRMP is included in the project Emergency Response Plan (SMWSASBT-CPG-1NL-NL000-SF-PLN-00004).

7.10.2.3. Department of Agriculture, Water and the Environment

Incidents associated with unauthorised impact to EPBC Act listed flora and fauna species and/or vegetation communities will be notified to the Department of Agriculture, Water and the Environment (via the Sydney Metro Environment Manager). The notification will be given in writing as soon as practicable, and no later than two business days after becoming aware of the incident. The notification will specify:

- any condition which is or may be in breach
- a short description of the incident
- the location (including co-ordinates), date, and time of the incident.

Within 10 business days, CPBG will provide the Department of Agriculture, Water and the Environment (via the Sydney Metro Environment Manager) with additional details of the incident, including

- any corrective action or investigation which CPBG has already taken or intends to take in the immediate future
- the potential impacts of the incident
- the method and timing of any remedial action that will be undertaken by CPBG.

7.10.2.4. Heritage NSW

Where an incident involves a potential impact to an Aboriginal site, relevant authorities such as Heritage New South Wales, and Registered Aboriginal Parties will be notified, and their input sought in closing out the incident.

7.11. Element 10 – Emergency planning and response

CPBG will actively prepare for and respond to emergencies by ensuring:

- The Emergency Response Plan (SMWSASBT-CPG-1NL-NL000-SF-PLN-00004) includes the NSW PIRMP as set out in Section 7.10.2 and is consistent with the requirements of Section 3.12 of the CEMF
- Emergency response is appropriately resourced and relevant personnel are adequately trained
- Emergency drills are conducted regularly, including testing of the Emergency Response Plan.

7.12. Element 11 – Document and record management

7.12.1. Environmental records

In accordance with the EMS, the Environment Manager is responsible for maintaining and controlling all environmental management documents and records including:

- Monitoring, inspection, audit and compliance reports/records
- Correspondence with public authorities
- Reports/records as required by the Infrastructure Approval, EPL, CEMF and compliance obligations
- Induction and training records
- Regulatory licences and permits
- Reports on environmental incidents, environmental non-compliances, and complaints
- Minutes of review meetings and evidence of any action taken
- CEMP and revision records
- EWMS
- Archival recordings
- Unexpected finds and stop work orders
- Records of any impacts avoided or minimised through design or construction methods
- Pre-clearing inspections
- Records of the release of pre-clearing hold points
- Ecological inspections
- ESCPs
- Water testing records
- Records on the release of the hold point to discharge water
- Records of any meteorological condition monitoring
- Records of any management measures implemented as a result of adverse, windy weather conditions
- Any relevant reports submitted to the regulatory authorities or government agencies.

All environmental management records will be accessible onsite for the duration of the SBT Works and retained for a minimum of seven years. Records will be made available to Sydney Metro (or their representative) on request and within an agreed timeframe.

7.12.2. CEMP Revision

The review of this CEMP may be initiated in response to:

- Status and progress of the SBT Works
- Changes in design and construction processes and conditions
- Lessons learnt during delivery of the SBT Works
- Changes in other related Project Plans
- Changes requested by Sydney Metro in accordance with the contract
- Audit/inspection findings
- Environmental incidents and non-compliances
- Management review process
- Changes in compliance obligations.

Should document review processes identify issues or items within the CEMP that are either redundant or in need of updating, the Environment Manager will prepare changes to the revised documents. The revised CEMP will then be issued to Sydney Metro for review and to the ER for endorsement prior to implementation.

7.12.3. Changes to the SBT Works

Refinements to the SBT Works may result from detailed design or changed circumstances during construction. Where the change has arisen from the detailed design process, the Design Manager will advise the Environment Manager of the revision through the standard design consultation process.

The Environment Manager will assess the proposed change against the requirements of the Planning Approval and Deed. Where requirement, the Environment Manager will undertake a consistency assessment in consultation with Sydney Metro to determine if a project modification may be required. Reflecting the requirements of the CEMF, the consistency assessment will include:

- A description of the existing surrounding environment
- Details of the ancillary works and construction activities required to be carried out including the hours of works
- An assessment of the environmental impacts of the works, including, but not necessarily limited to, traffic, noise and vibration, air quality, soil and water, ecology and heritage
- Details of mitigation measures and monitoring specific to the works that would be implemented to minimise environmental impacts
- Identification of the timing for completion of the construction works, and how the sites would be reinstated (including any necessary rehabilitation).

The consistency assessment will be approved by Sydney Metro and provided to the ER before the commencement of the subject work.

Should the consistency assessment determine that a project modification is warranted, the ER will be informed and a modification application under Section 5.25 of the EP&A Act will be prepared and lodged by Sydney Metro to the Planning Secretary for determination.

Following the approval of consistency assessments and/or project modifications, this CEMP will be reviewed to assess if an update is required. Where the CEMP requires revision, the process in Section 7.12.2 will be followed.

7.13. Element 12 – Auditing, review and improvement

CPBG will continually improve environmental systems and performance through the following measures, which are detailed in the sections that follow:

- Auditing (Section 7.13.1) – Undertaking risk-based internal and external audits to ensure ongoing compliance
- Reporting (Section 7.13.2) – Reporting on performance and trends in accordance with the SSI 10051 Planning Approval and contractual requirements
- Management Review (Section 7.13.3) – Undertaking an annual review of environmental performance trends and implementing corrective actions as required
- Continual Improvement (Section 7.13.4) – Achieving continual improvement of environmental performance through policy implementation, construction planning, risk management, corrective and preventive actions auditing, design review and auditing/review processes.

7.13.1. Auditing

The project-wide audit and compliance activities, including health, safety, environment and quality, will be monitored by the Compliance Working Group (CWG). The CWG will be established in accordance with the D&C Deed and include representatives of Sydney Metro, the IC, the ER and CPBG.

A combined audit schedule will be prepared by CPBG for review and acceptance by the CWG. The combined audit schedule will be reviewed monthly and incorporate the following environmental audits:

- Independent audits facilitated by Sydney Metro
- Internal audits (CPBG or JV partner companies)

The above environmental audit requirements are detailed in Table 19. Environmental audit reports will be submitted to Sydney Metro at an agreed frequency.

Table 19: Audit requirements

No.	Audit	Requirement	Timing	Responsibility
1	Independent audit (Condition A36)	Verify compliance with approval and legal requirements, Sydney Metro specifications, construction documentation and any other commitments	Independent Audits commenced 12 weeks after commencement of construction and will continue at six monthly intervals there-after. Independent Audit Reports and the Sydney Metro's response to audit findings will be submitted to the Planning Secretary within two months of undertaking the independent audit, unless otherwise agreed by the Planning Secretary.	Sydney Metro
2	Independent Audit (EPBC Act Approval)	Verify compliance with EPBC Act Approval	Conducted as requested in writing by the Minister.	Sydney Metro
3	Sydney Metro Audit	Verify compliance with CEMP, environmental aspects of contract documentation and the CEMF.	Periodic	Sydney Metro

No.	Audit	Requirement	Timing	Responsibility
4	Internal audit	Verify compliance with SSI 10051 Planning Approval and legal requirements, EPL and the CEMP. Assess the adequacy of community consultation and complaint response, environmental training, environmental monitoring and inspections.	Annually	Environment Manager

7.13.2. Reporting

During and following the SBT Works, various reports will be prepared to fulfil Sydney Metro's reporting needs, and requirements under the SSI 10051 Planning Approval. Table 20 details reporting requirements applicable to the SBT Works, including timing of the reporting, and who is responsible for managing preparation of the reports.

Table 20: Reporting requirements

No.	Report	Requirement	Timing	Responsibility
1	Monthly environmental compliance report	For incorporation in Project Monthly Reports including environmental statistics (i.e. incidents, regulatory action, complaints on environmental issues), outcome of any environmental surveillance activity including internal and external audits, regulatory and authority considerations, monitoring program performance and key environmental issues.	Monthly	Environment Manager
2	EPL monthly report	Pollution monitoring data as required by section 66(6) of the POEO Act.	Monthly Upload to Project website within 14 working days of obtaining the results	Environment Manager
3	EPL annual returns	Report on compliance with EPL.	Annually	Environment Manager
4	ER monthly report	Report including information required by Condition A32.	Monthly	Environment Representative
5	Environmental risk assessment	Conducted for each construction stage, material changes and significant issues.	Prior to construction, during development of CEMP, and as required thereafter	Environment Manager

7.13.3. Management review

Management reviews will be undertaken annually by the Environment Manager and the Senior Management Team. The management review will include:

- A review of the aspects and impacts register and environmental risk assessment
- Analysis of the causes of non-compliances
- Consideration of incidents and lessons learnt
- A review of the adequacy and effectiveness of environmental controls, resources and training programs
- Identification of potential improvements to the environmental management documentation

- A review of compliance with legal and other requirements and consideration of new issues.

The outcomes of the management review will be documented. Any corrective / preventative actions or continual improvement opportunities of systems and management plans will be entered into the CPBG quality system database, including details of the issue, action required, timing and responsibilities.

7.13.4. Continual improvement

In addition to specifying the day-to-day environmental management of a project, this CEMP details activities to be performed to deliver continual improvement in environmental performance. The continual improvement process is illustrated in Figure 7:

- Policy implementation at all levels of CPBG
- Construction and environmental planning
- Risk Management
- Corrective and preventive actions
- Audits and reviews.

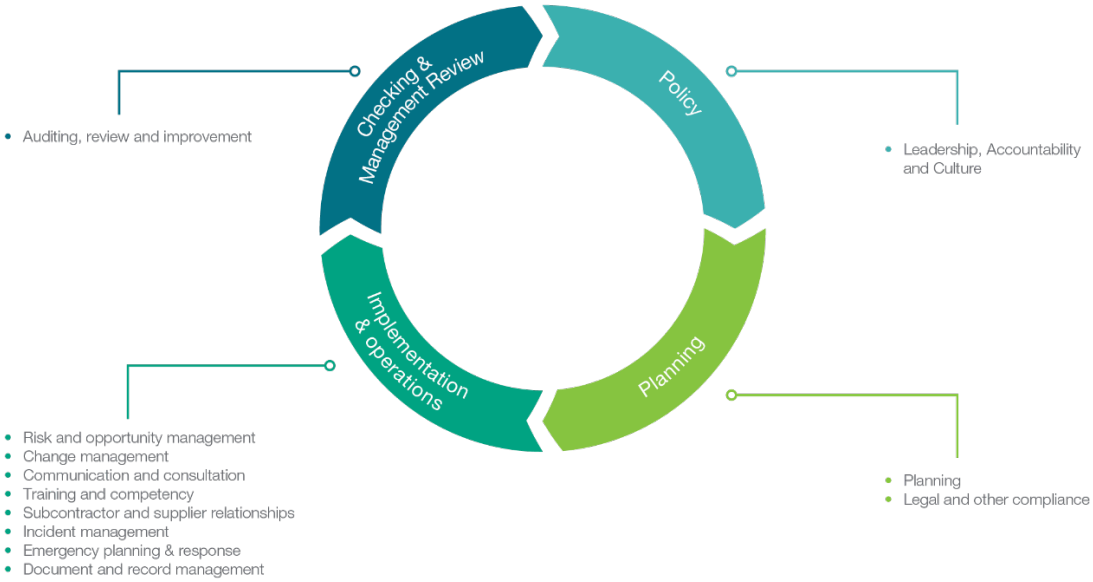


Figure 7: Continual Improvement Process

Annexure A Environment and Sustainability Policy

For the CPB Contractors Ghella Joint Venture, excellence in environmental and sustainability management is integral to the way CPBG JV works. CPBG JV strives to deliver environmentally and socially sustainable outcomes. At all times, CPBG JV actively involves all employees, subcontractors, suppliers and consultants, and work collaboratively with Sydney Metro to:

- Demonstrate environmental and sustainability leadership through implementing co-ordinated and transparent decision making
- Promote a culture of shared responsibility for environmental and sustainability outcomes
- Meet or exceed applicable legislation and other regulatory requirements
- Identify, assess and manage risks to the environment
- Develop our people and provide resources to enable us to meet our objectives and performance criteria and deliver a workforce legacy which benefits individuals, the construction industry and communities
- Improve our energy, water and resource use efficiency, and take all reasonable and practicable steps to minimise pollution and reduce waste and other adverse environmental effects
- Value cultural heritage and respect traditional land owner groups
- Improve knowledge, awareness and skills of our employees related to environmental and sustainability requirements and practices
- Implement sustainable procurement initiatives that provide environmental and social improvement and meet the requirements of the BS8903 Principles and Framework for Procuring Sustainably
- Pursue sustainability initiatives and programs to achieve net positive benefits for the environment and community and embed requirements that are consistent with technical design solutions
- Strive to achieve leading industry practice and develop, implement and maintain management systems and practices that meet the requirements of AS/NZS ISO 14001
- Regularly monitor, review and evaluate our performance to ensure continuous improvement in the way CPBG JV works
- Fully and transparently investigate environmental incidents to identify all causal factors and actions taken to prevent recurrence
- Engage with Sydney Metro, the communities CPBG JV works within and other stakeholders on sustainability and protection.

This Policy is consistent with the CPB Contractors policies and applies to all employees and third parties engaged by CPBG.

Annexure B Environment Procedures

ABORIGINAL AND HISTORIC HERITAGE UNEXPECTED FINDS WORKFLOW PROCEDURE

INDUCTION and TOOLBOX TALK
All personnel are to attend the project induction and toolbox talks, including heritage requirements and unexpected finds protocols.

Site Supervisor
Environmental Coordinator

HOLD POINT – Potential Human Remains
Stop work in the immediate vicinity of the 'find' and notify Supervisor and Environment Manager.

Management of Potential Human Remains
Implement the Sydney Metro Exhumation Management Procedure (SM ES-PW-315/5.0).

HOLD POINT – Potential Heritage Item
- Stop work in the immediate vicinity of the 'find', establish an exclusion zone and notify Supervisor and Environmental Coordinator.
- Environment Manager is to inform Sydney Metro Environment Manager and contact AMBS Historic or Aboriginal Excavation Director.
- Do not destroy, modify or otherwise physically affect any heritage items not identified in the EIS. Implement the Sydney Metro Unexpected Heritage Finds Procedure (SM-18-001105232).

Site Supervisor
Environmental Coordinator
Primary Historic or Aboriginal Excavation Director

Preliminary Assessment
Is the 'find' determined to be a relic or object?

Primary Historic or Aboriginal Excavation Director

N

'Find' is not Heritage
Construction works can proceed once written consent is provided by AMBS Historic Heritage or Aboriginal Excavation Director.

Y

Does the 'find' warrant notification to the relevant authority?

Primary Historic or Aboriginal Excavation Director

Y

Notify Sydney Metro, Heritage NSW, and relevant authorities in accordance with requirements of the Heritage Act 1977 or National Parks and Wildlife Act 1974, and consult with these authorities as appropriate.

Environment Manager

N

Assessment and Management
Complete an assessment of the significance of the 'find', impacts of the proposed works, and a strategy for managing the 'find' (e.g.: excavation or recording). Include results of consultation from previous step. Consider avoidance and redesign to protect finds of state heritage significance.

Primary Historic or Aboriginal Excavation Director

Implementation
Obtain any required approvals, and implement the management strategy. Where required, register previously unidentified Aboriginal objects or places in the Aboriginal Heritage Information Management System (AHIMS).

Primary Historic or Aboriginal Excavation Director

Clearance Certificate
When the tasks outlined in the management strategy have been completed, the AMBS Historic Heritage or Aboriginal Excavation Director will provide a clearance certificate to allow works to continue.

Primary Historic or Aboriginal Excavation Director

Final Reporting
Completion of any final reporting requirements or analysis will be undertaken after works have recommenced, with final reports provided to Sydney Metro and Heritage NSW.

Primary Historic or Aboriginal Excavation Director

Note: This workflow procedure summarises the requirements provided in the Sydney Metro Unexpected Heritage Finds Procedure (SM-18-001105232). Where further detail is required, refer to the Sydney Metro Unexpected Heritage Finds Procedure.

WORK TASKS AND RESPONSIBILITIES

Work Tasks	Responsibility	Potential Air Quality Impacts	Mitigation Measures	Mitigation Measure Responsibility	Residual Risk Rating
Demolition of existing buildings	• Project Manager • Project Engineer • Site Supervisor	• Dust and vehicle emissions can impact human health, fauna and flora • Dust can impact personal and public property resulting in community complaints and additional cleaning requirements • Dust and vehicle emissions can result in odours that can impact human health.	Refer to Air Quality and Dust Controls detailed on page 2 of this procedure	• Site Engineer/Supervisor • Environmental Coordinator	Medium
Removal of septic tanks	• Project Engineer • Site Supervisor	• Odours can impact human health		• Site Engineer/Supervisor • Safety Team	Medium
Establishment and demobilisation of work site (offices, amenities, car parking and access roads)	• Project Engineer • Site Supervisor	• Dust and vehicle emissions can impact human health, fauna and flora • Dust can impact personal and public property resulting in community complaints and additional cleaning requirements • Dust and vehicle emissions can result in odours that can impact human health.		• Site Engineer/Supervisor • Environmental Coordinator	Medium
Excavation and earthworks associated with local area works and utilities relocations	• Project Manager • Project Engineer • Site Supervisor			• Site Engineer/Supervisor • Environmental Coordinator • Plant Manager • Spoil Manager	Medium
Piling and station box / dive excavation using rippers and rock hammers	• Project Manager • Project Engineer • Site Supervisor			• Site Engineer/Supervisor • Superintendent • Environmental Coordinator	Medium
Stub tunnel excavation using roadheaders	• Project Manager • Project Engineer • Site Supervisor			• Site Engineer/Supervisor • Superintendent • Environmental Coordinator	Medium
Spoil handing, storage and transport	• Project Manager • Project Engineer • Site Supervisor			• Site Supervisor • Environmental Coordinator • Spoil Manager	Medium
Construction of above ground structures	• Project Manager • Project Engineer • Site Supervisor			• Site Engineer/Supervisor • Environmental Coordinator	Low
Lansdowne Road construction of the permanent road bridge	• Project Manager • Project Engineer • Site Supervisor			• Site Engineer/Supervisor • Environmental Coordinator	Medium

AIR QUALITY MANAGEMENT PROCEDURE AND MONITORING PROGRAM, con't

MANAGEMENT AND RESPONSIBILITY

TRAINING AND AWARENESS
All site-based personnel will attend an induction and regular toolbox talks detailing air quality impacts and mitigation measures..

← Environment Manager

DESIGN
Design and manage acoustic sheds to prevent / minimise the escape of dust emissions (refer to the relevant Detailed Noise and Vibration Impact Assessment for acoustic shed locations).

← Design Engineer

↓

ASSESSMENT OF THE SITUATION
Work place risk assessments including SWMS will identify and assess the risk of odour and dust, including potential impacts, and be updated if there is any significant change to the work activity.

← Site Supervisor
Site Engineer
Environmental Coordinator

↓

HOLD POINT – VISIBLE DUST

Stop work immediately if there is a potential release of dust from the premises which is the result of active works. Review the adequacy of controls, identify corrective actions and implement additional/revised controls prior to recommencement of works.

← Site Supervisor

↓

AIR QUALITY AND DUST CONTROLS

- Maintain the SBT Worksites and conduct activities in a manner that will minimise the generation and emission of air pollution to the greatest extent practicable
- Plant and equipment, including tunnel and shed ventilation systems, will be serviced and maintained in good working order, and operated in a proper and efficient manner to reduce unnecessary emissions, including from exhaust fumes; contact the Site Supervisor if there are any defective emission controls on plant items (i.e. black smoke). Ensure that all excavators and mobile cranes used for the SBT Works which are onsite for more than three months comply with the US EPA Tier 4 or EU Stage V exhaust emission standards.
- Plant and equipment to be switched off engines when not in use
- The avoidance the use of diesel or petrol powered generators and instead using mains electricity or battery powered equipment, where practicable;
- Appropriate vehicle speeds on sealed and unsealed roads
- Development and implementation of a construction logistics plan to manage the sustainable delivery of goods and materials
- Implement measures to support and encourage sustainable travel for construction workers to and from the construction sites
- Water suppression will be used for active earthwork areas, stockpiles, unsurfaced haul roads and loads of soil being transported to reduce wind-blown dust emissions; consider the use of captured rain water and/or water from water treatment plants in preference to potable water
- Provide stabilised roadbase on access/egress points and rumble grids/wheel wash units (where required) to minimise tracking dirt onto local roads. Wheel-wash facilities or rumble grids will be provided and used near the site exit points, as appropriate; inspect wheels/tailgates and clean where required to minimise tracking off-site
- Dust extraction and filtration systems will be installed for tunnel excavation works and deep excavation with limited surface exposure
- Minimise areas of exposed surfaces and stabilise as soon as possible
- Stabilise long-term stockpiles (>20 days) with grasses or appropriate soil binding material where there is the potential for dust generation (refer to the Blue Book for guidance on preferred soil binding materials). Where a minimum groundcover of 60% has not been achieved within 10 working days of completion of formation, review works and implement additional soil binding measures.
- Cover potential dust generating truck loads at all times, except during loading and unloading
- Avoid dust generating activities during high wind periods. When winds exceed an average of 30 km/hr over a 1hr period, reassess works with the Environment Coordinator
- Cover odorous soils and contact the Environment Coordinator for testing and assessment. Refer to the Soil and Water Management Sub-Plan for additional controls.
- Complete a hazardous materials analysis prior to stripping and demolition of structures and buildings that are suspected of containing hazardous materials (particularly asbestos). Prior to demolition, remove all hazardous materials and check clearance certificate.
- Obtain a Water Reuse and Discharge Permit prior to onsite water reuse (other than water from rainwater tanks and water treatment plants).

← Site Supervisor
Site Engineer
Plant Manager
Superintendent
Safety Team

AIR QUALITY MANAGEMENT PROCEDURE AND MONITORING PROGRAM, con't

SMART PRINCIPLES

Specific – The SBT project goal is to minimise dust caused by earthworks activities, and prevent dust from leaving site boundaries

Measurable – Dust mitigation methods will be adopted and implemented by each work crew and effectiveness will be reviewed at Prestart Meetings.

Achievable – Dust minimisation and management is achievable if it is embedded in the environmental culture of the project through inductions, Toolbox Talks and direct communication with work crews.

Relevant – Visual monitoring will be undertaken during all material loading works and in areas of disturbance

Time-bound – Visible dust that has the potential to leave the site will be mitigated immediately. If mitigation such as water carts, reducing vehicle speeds, or other methodology adjustments fail to achieve dust minimisation, the works will be temporarily halted.

BASELINE DATA

The baseline air quality data indicates that annual average PM_{10} concentration around St Marys and Bringelly ranges between 15.1 and 21.2 micrograms per cubic metre. There are a number of recorded exceedances of the 50 micrograms per cubic metre maximum 24-hour concentration criterion.

The annual average $PM_{2.5}$ concentration around St Marys and Bringelly is around 8 micrograms per cubic metre. There are a number of recorded $PM_{2.5}$ exceedances of the 25 micrograms per cubic metre maximum 24-hour concentration criterion.

The baseline data indicates that air quality in the vicinity of the works is impacted by a diversity of industrial and agricultural land uses. As such, the EIS did not specify a requirement for quantitative monitoring of PM_{10} or $PM_{2.5}$ concentrations. Management actions to mitigate potential air quality impacts are detailed on Page 2 of this procedure.

Statistic	Criteria	2015	2016	2017	2018	2019
St Marys Monitoring Location						
Maximum 24-hour PM_{10} concentration (ug/m3)	50	53.0	100.2	49.8	100.5	159.8
Annual average PM_{10} concentration (ug/m3)	25	15.1	16.0	16.2	19.3	24.7
Maximum 24-hour $PM_{2.5}$ concentration (ug/m3)	25	-	93.2	38.2	80.5	88.3
Annual average $PM_{2.5}$ concentration (ug/m3)	8	-	7.8	8	7.8	9.8
St Marys Monitoring Location						
Maximum 24-hour PM_{10} concentration (ug/m3)	50	57.0	61.6	83.7	92.9	134.0
Annual average PM_{10} concentration (ug/m3)	25	15.8	17.0	19.8	21.2	23.6
Maximum 24-hour $PM_{2.5}$ concentration (ug/m3)	25	-	21.6	52.5	55.6	178.0
Annual average $PM_{2.5}$ concentration (ug/m3)	8	-	87.6	7.5	8.0	11.3

Source: Department of Planning and Environment (2015 to 2019) as reported in the EIS

Note: Due to the duration of baseline data, no further baseline data is proposed to be obtained as part of the SBT Works.

AIR QUALITY MONITORING PROGRAM

Monitoring	Parameters	Frequency	Location	Responsibility	Reporting
Weather forecast	• Wind velocity • Wind direction • Precipitation • Temperature • Weather warnings	Daily	Horsley Park Equestrian Centre SWA (Station 067119)	Environmental Coordinator	Daily email to Construction Team
Visual observations	• Visible dust that has the potential to leave the site	Daily	All active worksites	Site Supervisor	Shift Report
Visual observations	• Visible dust that has the potential to leave the site	Weekly	All active worksites	Environmental Coordinator	Environmental Inspection Checklist
Visual/ Olfactory observations	• Vehicle emissions • Odours	Daily	All active worksites	Site Supervisor	Shift Report

Monitoring program performance will be documented in the Monthly Environmental Report where applicable.

TRIGGER, ACTION, RESPONSE PLAN

Source	Trigger	Action Response	Responsibility
Weather forecast Bureau of Meteorology)	• Wind forecast to exceed 25 km/hr	• Notification to Construction Team • Review availability of controls • Review planned works	• Environmental Coordinator • Site Supervisor
	• Wind forecast to exceed 50 km/hr	• Notification to Construction Team • Restrict earthworks • Minimise vehicle movements on unsealed surfaces • Cover all stockpiles • Apply biodegradable sealant to lose soil areas	• Environmental Coordinator • Site Supervisor
Visual observations	• Visible dust as a result of active SBT Works	• Review adequacy of controls • Implement corrective actions / revised controls	• Site Supervisor
	• Potential release of dust from the premises	• Stop works and notify the Environmental Coordinator • Review adequacy of controls • Implement corrective actions / revised controls prior to recommencement of works	• Site Supervisor
Olfactory observations	• Potential release of odour from the premises	• Stop works and notify the Environmental Coordinator • Review adequacy of controls • Apply odour suppressing agents to excavated areas where appropriate	• Site Supervisor

SPILL MANAGEMENT PROCEDURE

MANAGEMENT AND RESPONSIBILITY

HOLD POINT
Site Supervisor and Environmental Coordinator to be notified of the spill immediately, regardless of the quantity.

— All Personnel

ASSESSMENT OF SITUATION

- What is the volume of the spill?
- What is the type of substance? Refer to SDS.
- What is the potential safety impact to personnel, the environment and surrounding resident/business?

— Site Supervisor, Environmental Coordinator

Can the spill be contained and cleaned with on-site spill kits/resources?

— Site Supervisor, Environmental Coordinator

Y

SAFETY
PPE must be worn, in accordance with the SDS, during all phases of spill control/ clean up

N

Evacuate area and cordon off. Contact the NSW Fire Brigade/HAZMAT in accordance with the Emergency Response Plan.

— Environment Manager

SPILL MANAGEMENT

- **Control**: Stop the source of the spill/ leak if it is safe to do so. Protect drains/waterways.
- **Contain and Clean**: Use spill kit materials (i.e. booms, pads, pillows, granules etc.), sand bagging or silt socks. Employ floating booms and absorbents for waterway spills
- Place used spill kit materials in the waste bag found within spill kit.
- Spilled liquid waste to be placed into a labelled sealed container. The container is to comply with Australian/ New Zealand Standards.
- Refer to the Waste and Recycling Management Procedure regarding the disposal of contaminated spoil.
- **Replace:** Site Supervisor to replace all used spill equipment immediately after the event.
- Spill kits will be inspected periodically by the Environment Coordinator and/or Site Supervisor to ensure on going serviceability.

— Environmental Coordinator, Site Supervisor

Is the spill causing or threatening to cause material harm?

— Environment Manager

Y

Notify external agencies as per Emergency Response Plan.

— Environment Manager

N

Incident report to be completed by Environment Manager or delegate.

— Environment Manager

SPILL PREVENTION

- Store hazardous materials in accordance with Australian Standards and in bunded areas with a capacity of 110 per cent of the maximum single stored volume
- Conduct refuelling/maintenance of plant/equipment in designated and bunded areas
- Conduct preventative maintenance of plant/equipment hydraulics
- Store portable generators in bunded trays
- Establish concrete wash-out trays prior to conducting concrete works
- Implement and maintain spill kits in storage areas and work sites

SPILL KIT APPLICATION

MATERIAL	APPLICATION
Booms	Deploy booms to contain spill. Consider the need to install floating booms before starting works if there is potential for spill in waterways.
Granules/ Particulate	If the booms alone cannot absorb the spill/ leak, apply absorbent granules to soak up spilled liquid.
Pads and Pillows	Thin absorbent mats to be placed over spills or directly under a leak or drip.
Drain Covers	Covers placed over stormwater inlets to block drains and stop spills entering stormwater drains.
Sorbents	Sorbents are materials that soak up the spill. Once the absorbent material has been applied to the spill, the mixture is recovered with nets, rakes, forks or pike poles.
Manual Recovery	Manual recovery is another common method especially for areas with a high concentration of oil.
Vacuum Truck	Used to remove liquid and sludge wastes.

EMERGENCY CONTACTS	
SUPERINTENDENT	
ENVIRONMENT MANAGER	
ENVIRONMENT COORDINATORS	
LEAD SAFETY MANAGER	
SENIOR STAKEHOLDER AND COMMUNITY MANAGER	

VISUAL AMENITY MANAGEMENT PROCEDURE

TEMPORARY DESIGN CRITERIA AND GUIDELINES

TEMPORARY DESIGN DEVELOPMENT

- Incorporate the principles of Crime Prevention Through Environmental Design (CPTED) in the temporary works design, including clear sightlines, effective lighting and restricted access to internal areas or high-risk areas
- Finish all structures (including potential acoustic sheds, site offices, workshop sheds, site hoarding and visible fixtures and fittings) in a colour which aims to minimise their visual impact (refer to example below).
- Repurpose existing structures as temporary site facilities where feasible
- Where practicable, incorporate architectural treatment and finishes within temporary structures that reflect the context within which the construction sites are located.

Design Team
Manager
Project Engineers

LIGHTING CONSIDERATIONS

- Install and operate temporary site lighting (for security purposes or night works) in accordance with AS4282:2019 Control of the Obtrusive Effects of Outdoor Lighting and relevant Australian Standards in the series ASINZS 1158 - Lighting for Roads and Public Spaces.
- Install security and warning lighting so that light is not directed at or reflected onto neighbouring properties.
- Minimise shading and artificial light impacts in areas adjoining remnant intact bushland.

Project Managers
Project Engineers
Lead Safety Manager

HOARDING BANNERS AND SIGN DESIGN

- Install boundary screening around ancillary facilities that are adjacent to sensitive land use(s) unless otherwise agreed with relevant affected residents, businesses or landowners.
- Ensure boundary screening minimises visual impacts on adjacent sensitive land uses.
- Install hoarding banners on the external faces of hoardings and fences at each construction site in full colour and in accordance with designs provided by Sydney Metro and the hoarding requirements of the Sydney Metro Western Sydney Airport Guidelines (co-branding).
- Install signage at each construction site including details of the project name, application number, telephone number, postal address and email address.

Project Managers
Senior Stakeholder and Community Relations Manager

Figure 1: Example of colour palate guidance for demountable buildings and hoarding

CONSTRUCTION WORKSITE MANAGEMENT

RETAINING VEGETATION AND SCREEN PLANTING

- Where practicable, retain vegetation within worksites in accordance with the Tree Clearing and Grubbing Procedure
- Provide temporary landscaping and screen planting where practicable to minimise the visual impacts of construction sites.

Project Engineers
Site Supervisors

MAINTENANCE, HOUSE KEEPING AND REINSTATEMENT

- Maintain temporary site facilities, including hoardings, in good working order and fit for their intended purpose.
- Ensure construction sites and other areas affected by SBT Works are clean and tidy.
- Regularly remove rubbish, graffiti, litter and surplus material from construction sites and clear and clean all working areas and accesses at project completion
- At the completion of construction all plant, temporary buildings or vehicles not required for the subsequent stage of construction will be removed from the site
- All land, including roadways, footpaths, loading facilities or other land having been occupied temporarily will be returned to their pre-existing condition or better
- Reinstate community spaces, infrastructure and services (where required by the Deed) as soon as possible after completion of the SBT Works.

Project Engineers
Site Supervisors

MONITORING

- Site Supervisors will conduct daily inspections of each work area, including site hoarding and perimeter site areas, lighting structures, scaffolding and other site structures
  - ➢ Any identified issues will be noted in Site Diaries and rectified within agreed and/or required timeframes
- Environment Inspections will include an assessment of vegetation health and the condition of site hoarding
  - ➢ Record any required maintenance and/or deficiencies in environmental controls on an Environmental Inspection Checklist
  - ➢ Close out actions in accordance with the identified priority.

Site Supervisors
Environmental Coordinators

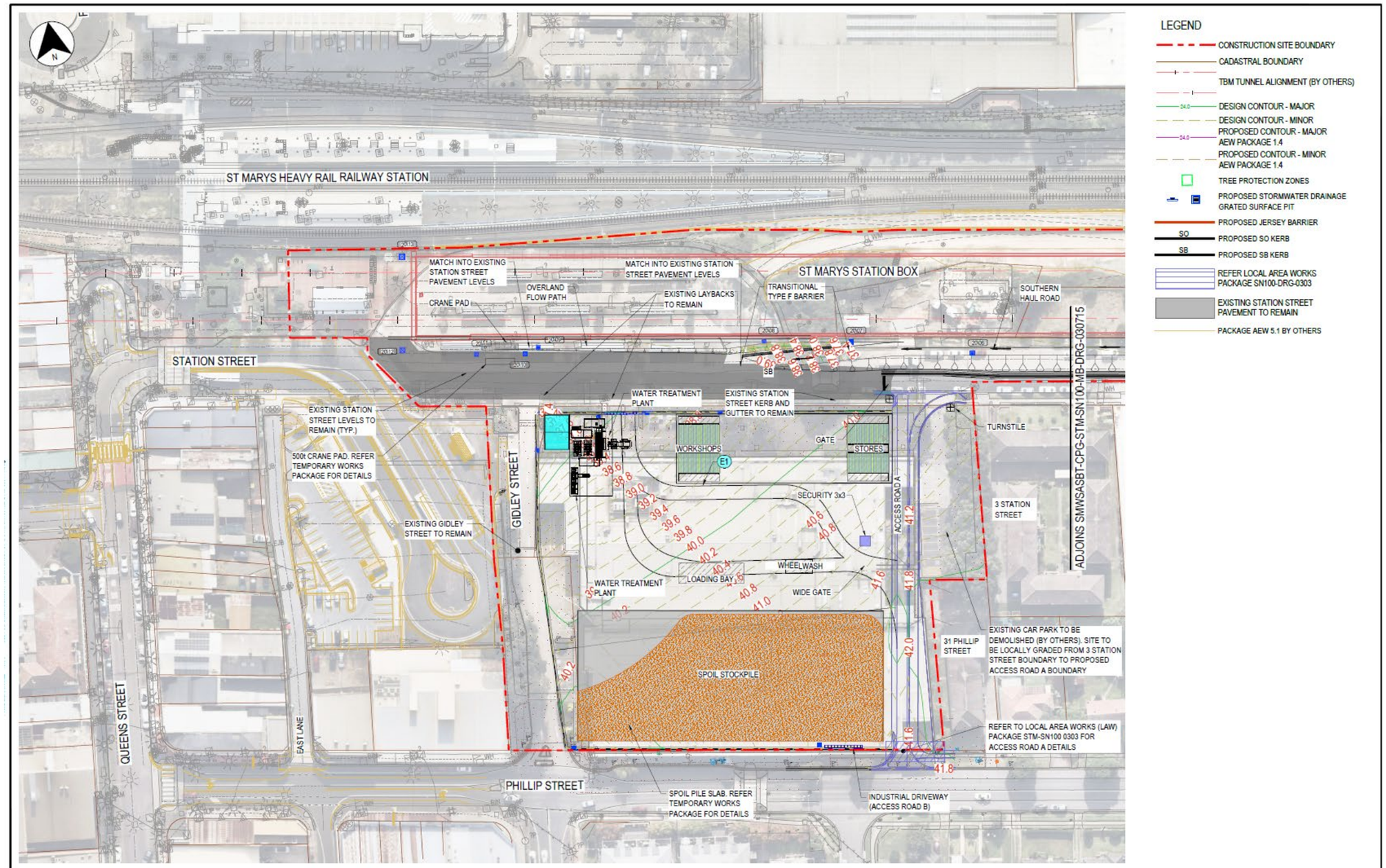
GRAFFITI REMOVAL AND DAMAGE TO BANNERS AND SIGNS

- Remove graffiti or unauthorised advertising material in accordance with the time frames below.
- If hoarding banners/signs become irreparably damaged, CPBG will install replacement fencing banners or fencing signage within 24 hours of this damage occurring

Graffiti or unauthorised material	Time frame for removal (cleaned or covered)
Offensive graffiti	Within 24 Hours
Highly visible yet non-offensive graffiti	1 week
Graffiti that is neither offensive nor highly visible	During normal operations within 1 month
Advertising material	Within 24 hours

Project Engineers
Site Supervisors

Annexure C Indicative Site Layout Plans



FOR CONSTRUCTION

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DESIGNED	JOHN KEARNS	13.05.2022
DRG CHECK	GARY VALLANCE	13.05.2022
DESIGN CHECK	TREVOR WOODWARD	13.05.2022
APPROVED	CHRIS LAWTON	13.05.2022

SYDNEY METRO - WESTERN SYDNEY AIRPORT – STATION BOXES AND TUNNELLING WORKS
ST MARYS STATION
MOBILISATION AND SITE ESTABLISHMENT
GENERAL ARRANGEMENT PLAN
SHEET 1
FILE No: SMWSASBT-CPG-STM-SN100-MB-MSD-030701 | SHEET: 1 OF 2 | 00
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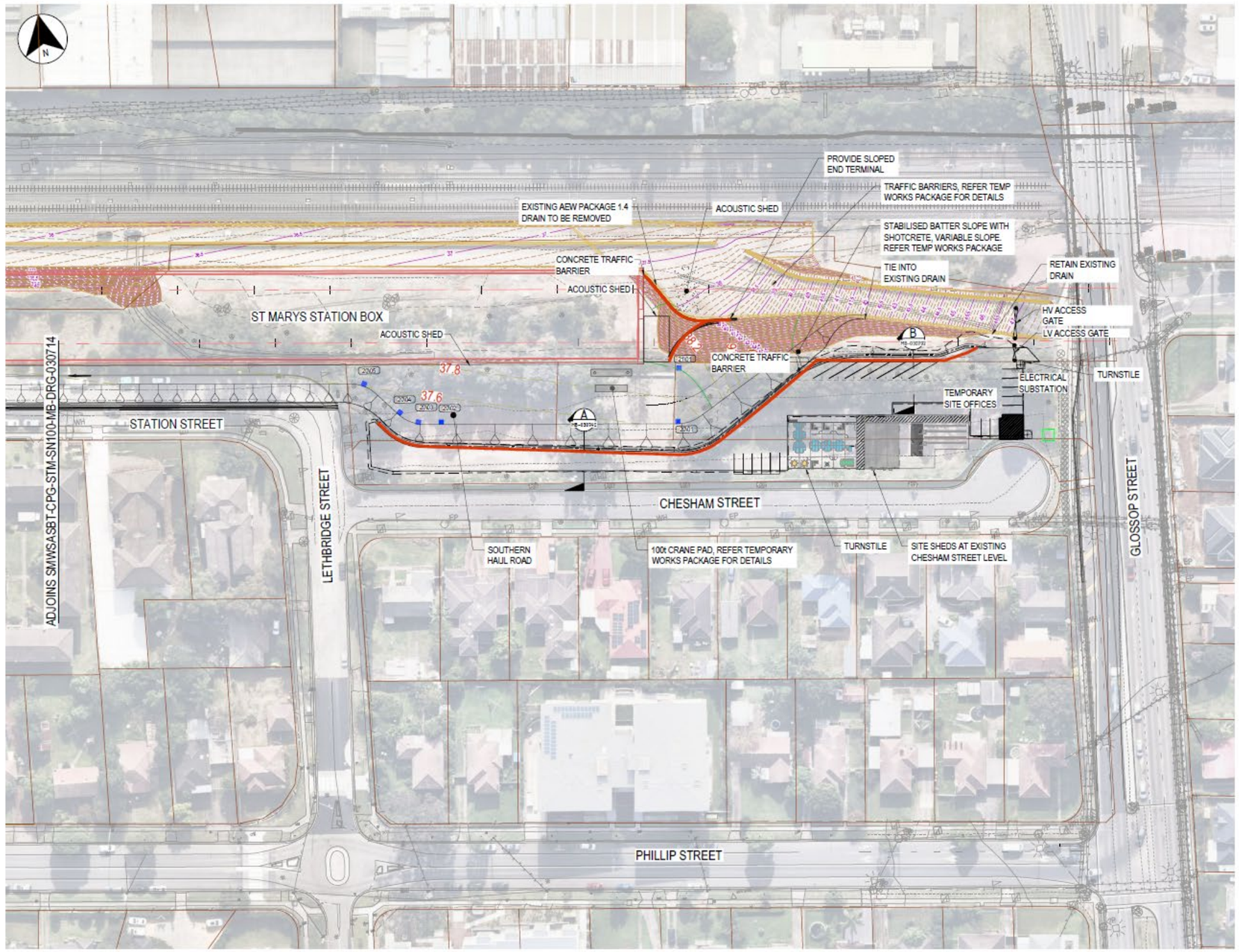

LEGEND

- CONSTRUCTION SITE BOUNDARY
- CADASTRAL BOUNDARY
- TBM TUNNEL ALIGNMENT (BY OTHERS)
- DESIGN CONTOUR - MAJOR
- DESIGN CONTOUR - MINOR
- PROPOSED CONTOUR - MAJOR AEW PACKAGE 1.4
- PROPOSED CONTOUR - MINOR AEW PACKAGE 1.4
- TREE PROTECTION ZONES
- PROPOSED STORMWATER DRAINAGE GRATED SURFACE PIT
- PROPOSED JERSEY BARRIER
- SO PROPOSED SO KERB
- SB PROPOSED SB KERB
- REFER LOCAL AREA WORKS PACKAGE SN100-DRG-0303
- EXISTING STATION STREET PAVEMENT TO REMAIN
- PACKAGE AEW 5.1 BY OTHERS

FOR CONSTRUCTION

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SCALE: AS SHOWN
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DRG CHECK	GARY VALLANCE	13.05.2022
DESIGN CHECK	TREVOR WOODWARD	13.05.2022
APPROVED	CHRIS LAWTON	13.05.2022

SYDNEY METRO - WESTERN SYDNEY AIRPORT – STATION BOXES AND TUNNELLING WORKS
ST MARYS STATION
MOBILISATION AND SITE ESTABLISHMENT
GENERAL ARRANGEMENT PLAN
SHEET 2

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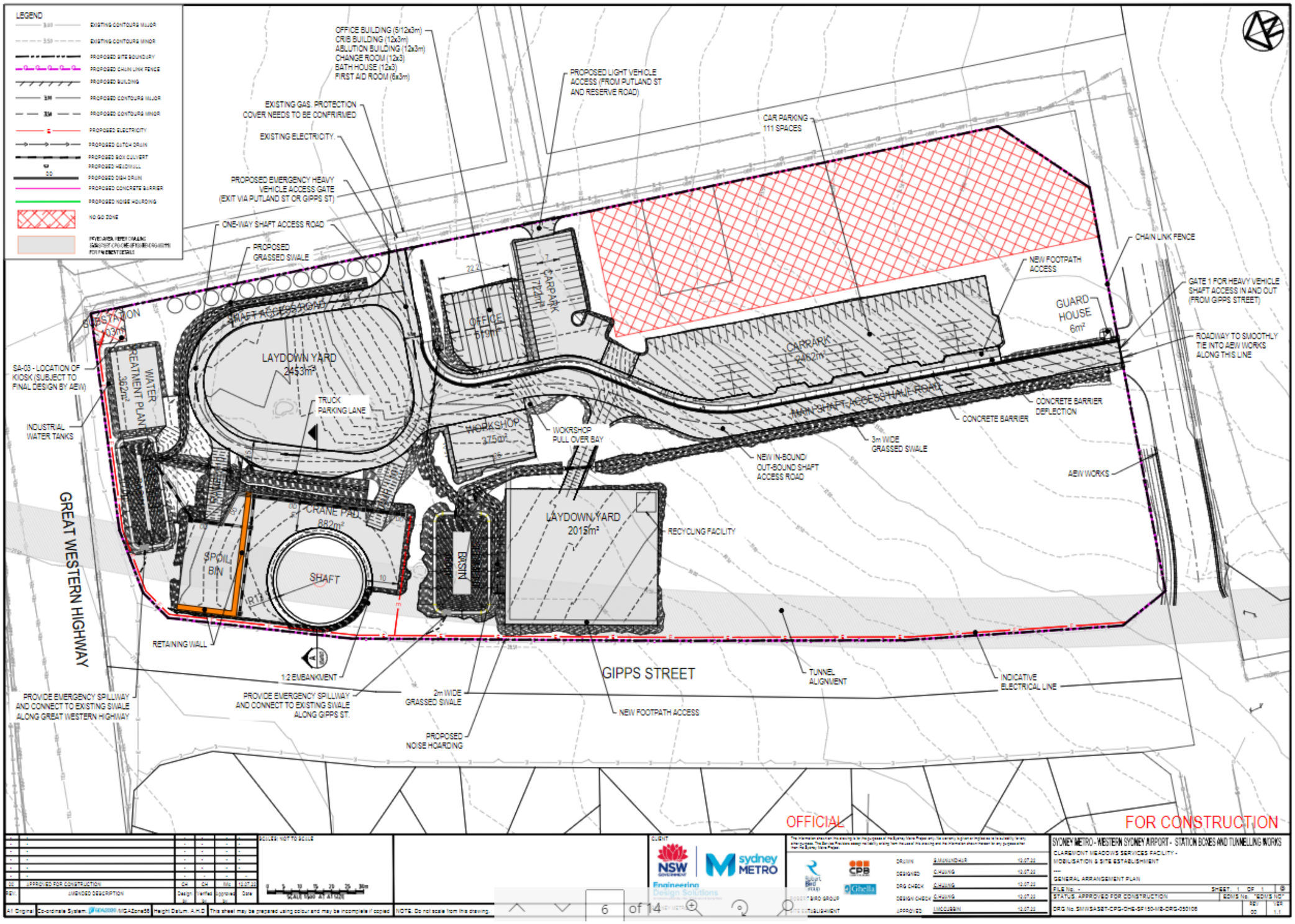
LEGEND
EXISTING CONTOURS MAJOR
EXISTING CONTOURS MINOR
PROPOSED SITE BOUNDARY
PROPOSED CHAIN LINK FENCE
PROPOSED BUILDING
PROPOSED CONTOURS MAJOR
PROPOSED CONTOURS MINOR
PROPOSED ELECTRICITY
PROPOSED CLITCH DRAIN
PROPOSED BOX CULVERT
PROPOSED HEADWALL
PROPOSED OPEN DRAIN
PROPOSED CONCRETE BARRIER
PROPOSED NOISE HOURDING
NO GO ZONE
OFFICE BUILDING (5/12x3m)
CRIB BUILDING (12x3m)
ABLUTION BUILDING (12x3m)
CHANGE ROOM (12x3)
BATH HOUSE (12x3)
FIRST AID ROOM (6x3m)
EXISTING GAS PROTECTION COVER NEEDS TO BE CONFIRMED
EXISTING ELECTRICITY
PROPOSED EMERGENCY HEAVY VEHICLE ACCESS GATE (EXIT VIA PUTLAND ST OR GIPPS ST)
ONE-WAY SHAFT ACCESS ROAD
PROPOSED GRASSED SWALE
PROPOSED LIGHT VEHICLE ACCESS (FROM PUTLAND ST AND RESERVE ROAD)
CAR PARKING 111 SPACES
CHAIN LINK FENCE
NEW FOOTPATH ACCESS
GUARD HOUSE 6m²
GATE 1 FOR HEAVY VEHICLE SHAFT ACCESS IN AND OUT (FROM GIPPS STREET)
ROADWAY TO SMOOTHLY TIE INTO AEW WORKS ALONG THIS LINE
SUBSTATION 103m²
SHAFT ACCESS ROAD
OFFICE 51m²
CARPARK 1720m²
CARPARK 2462m²
SA-03 - LOCATION OF KIOSK (SUBJECT TO FINAL DESIGN BY AEW)
WATER TREATMENT PLANT 362m²
LAYDOWN YARD 2453m²
TRUCK PARKING LANE
WORKSHOP 375m²
WOKRSHOP PULL OVER BAY
MAIN SHAFT ACCESS HAUL ROAD
CONCRETE BARRIER
CONCRETE BARRIER DEFLECTION
3m WIDE GRASSED SWALE
NEW IN-BOUND/ OUT-BOUND SHAFT ACCESS ROAD
AEW WORKS
INDUSTRIAL WATER TANKS
GREAT WESTERN HIGHWAY
CRANE PAD 882m²
SPOIL BIN
SHAFT
BASIN
LAYDOWN YARD 2015m²
RECYCLING FACILITY
RETAINING WALL
1:2 EMBANKMENT
GIPPS STREET
TUNNEL ALIGNMENT
INDICATIVE ELECTRICAL LINE
PROVIDE EMERGENCY SPILLWAY AND CONNECT TO EXISTING SWALE ALONG GREAT WESTERN HIGHWAY
PROVIDE EMERGENCY SPILLWAY AND CONNECT TO EXISTING SWALE ALONG GIPPS ST.
2m WIDE GRASSED SWALE
NEW FOOTPATH ACCESS
PROPOSED NOISE HOARDING
OFFICIAL
FOR CONSTRUCTION
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APPROVED FOR CONSTRUCTION
SYDNEY METRO - WESTERN SYDNEY AIRPORT - STATION BOXES AND TUNNELLING WORKS
CLAREMONT MEADOWS SERVICES FACILITY -
MOBILISATION & SITE ESTABLISHMENT
GENERAL ARRANGEMENT PLAN
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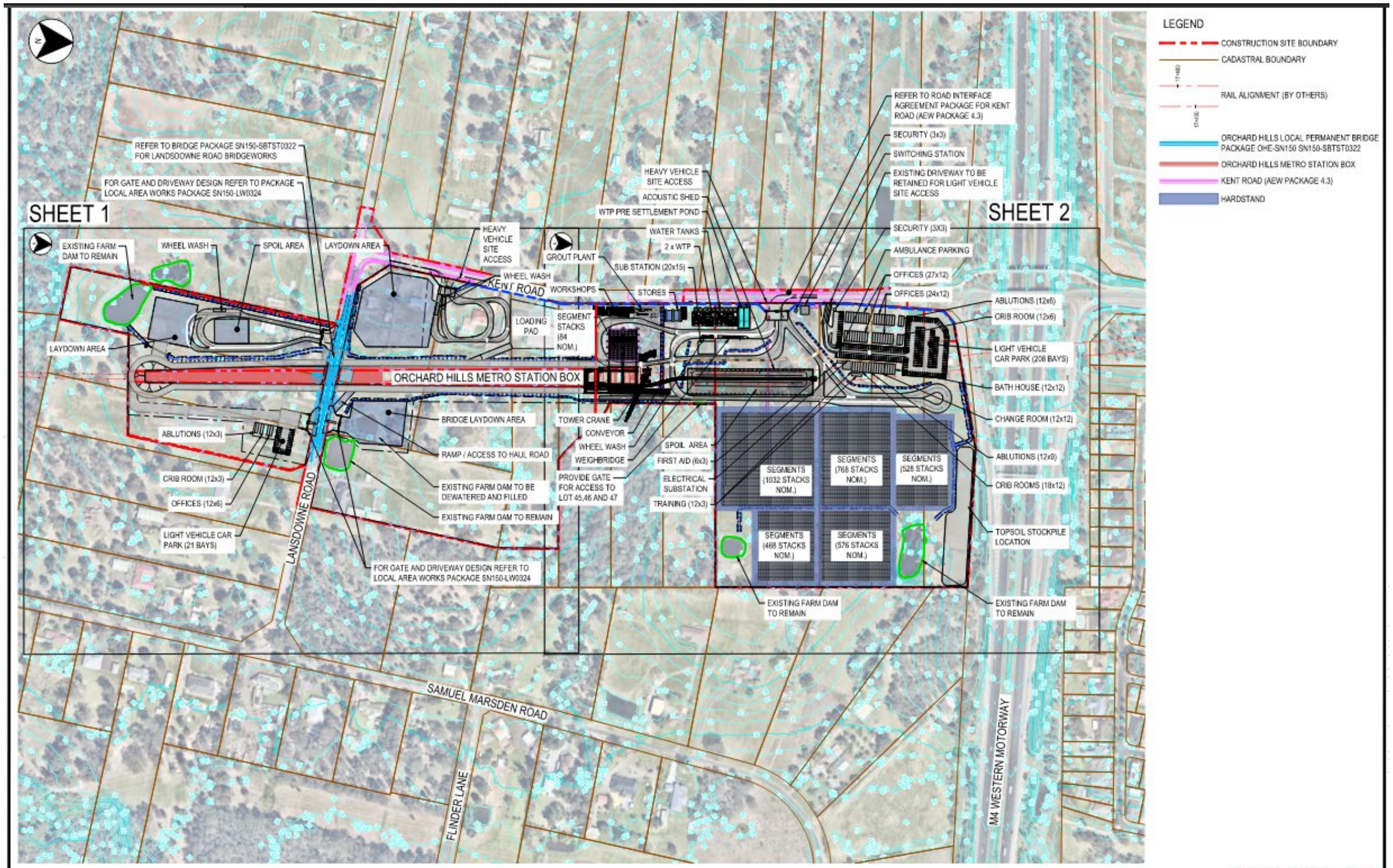

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DESIGN CHECK	TREVOR WOODWARD	27.05.2022
APPROVED	CHRIS LARTEN	27.05.2022

SYDNEY METRO - WESTERN SYDNEY AIRPORT - STATION BOXES AND TUNNELLING WORKS
ORCHARD HILLS STATION
MOBILISATION AND SITE ESTABLISHMENT
OVERALL GENERAL ARRANGEMENT PLAN

FILE No: SMWSASBT-CPG-OHE-SN150-MB-MAP-031801 | SHEET: 1 OF 1 | A0
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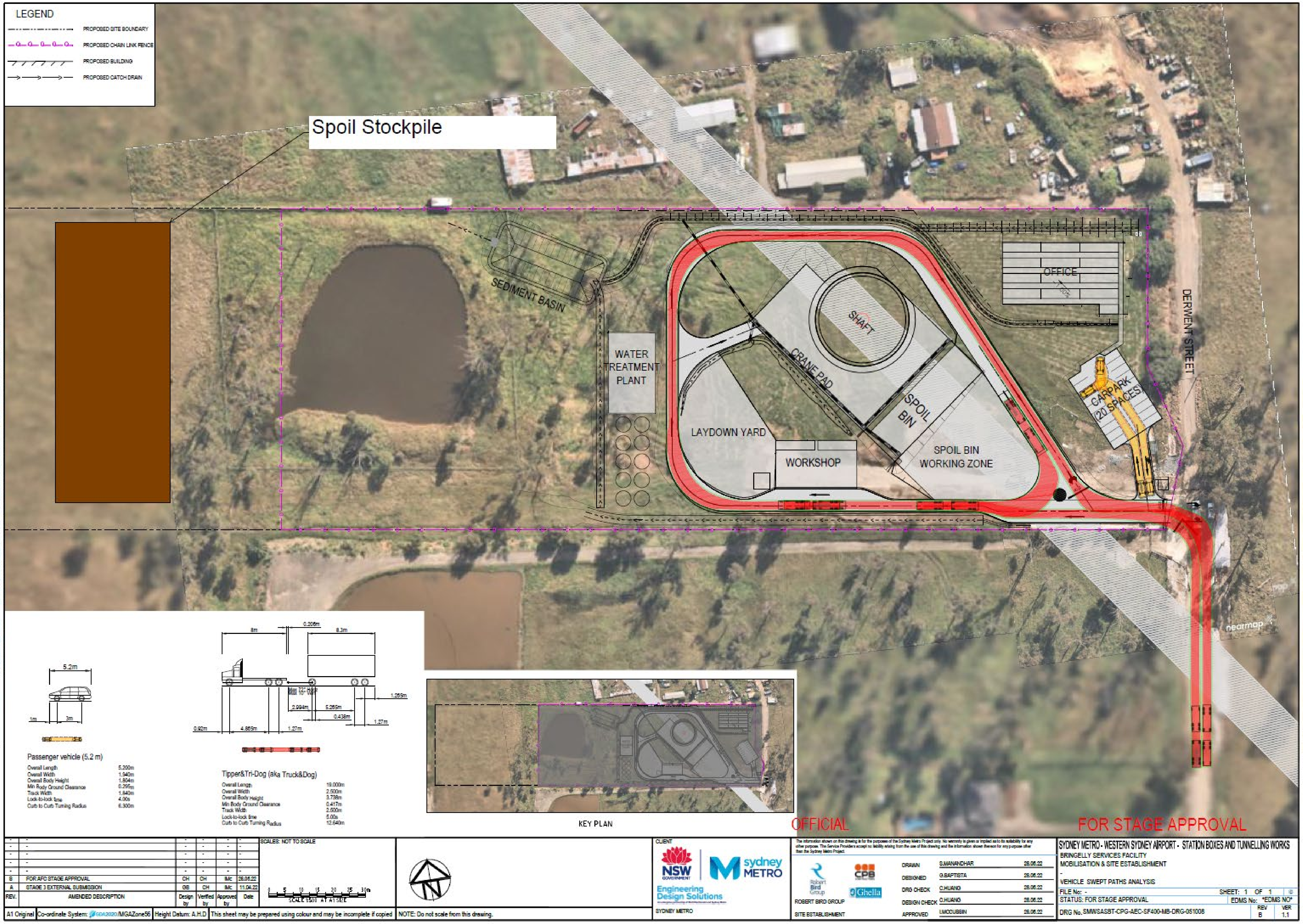
LEGEND
PROPOSED SITE BOUNDARY
PROPOSED CHAIN LINK FENCE
PROPOSED BUILDING
PROPOSED CATCH DRAIN
Spoil Stockpile
SEDIMENT BASIN
WATER TREATMENT PLANT
LAYDOWN YARD
WORKSHOP
CRANE PAD
SHAFT
SPOIL BIN
SPOIL BIN WORKING ZONE
OFFICE
CARPARK (20 SPACES)
DERWENT STREET
Passenger vehicle (5.2 m)
Tipper&Tri-Dog (aka Truck&Dog)
KEY PLAN
OFFICIAL
FOR STAGE APPROVAL
SCALES: NOT TO SCALE
B FOR AFC STAGE APPROVAL
A STAGE 3 EXTERNAL SUBMISSION
SYDNEY METRO - WESTERN SYDNEY AIRPORT - STATION BOXES AND TUNNELLING WORKS
BRINGELLY SERVICES FACILITY
MOBILISATION & SITE ESTABLISHMENT
VEHICLE SWEPT PATHS ANALYSIS
STATUS: FOR STAGE APPROVAL
DRG No. SMWSASBT-CPG-AEC-SF400-MB-DRG-051008
DRAWN S.MANANDHAR 28.06.22
DESIGNED G.BAPTISTA 28.06.22
DRG CHECK C.HUANG 28.06.22
DESIGN CHECK C.HUANG 28.06.22
APPROVED L.MCCUBBIN 28.06.22
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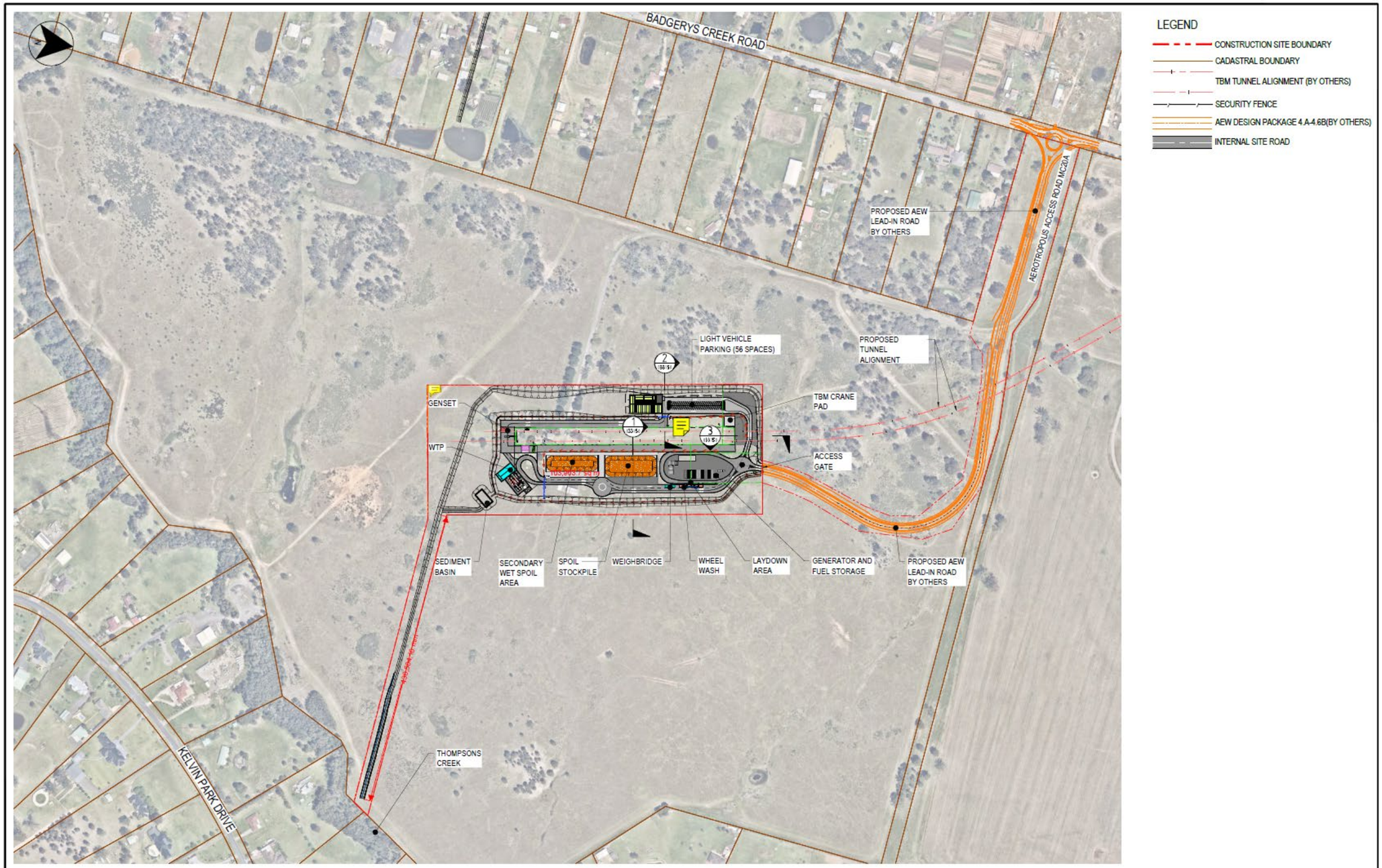

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DESIGN CHECK	TREVOR WOODWARD	27.07.2022
APPROVED	CHRIS LAWTON	27.07.2022

SYDNEY METRO - WESTERN SYDNEY AIRPORT – STATION BOXES AND TUNNELLING WORKS
AEROTROPOLIS
MOBILISATION AND SITE ESTABLISHMENT
OVERALL GENERAL ARRANGEMENT PLAN

FILE No: SMWSASBT-CPG-AEC-SN450-MB-DRG-033710 | SHEET: 1 OF 1
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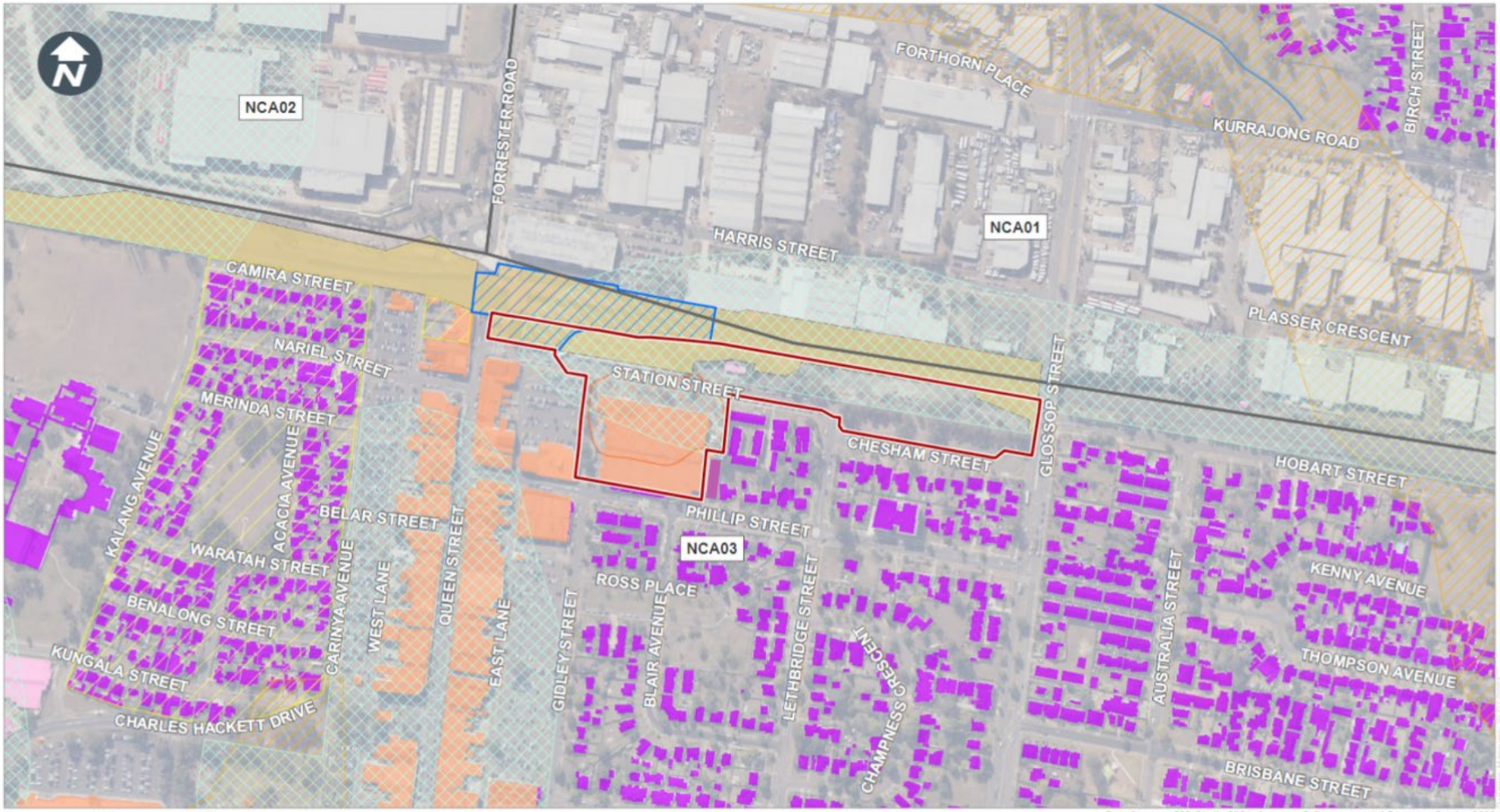
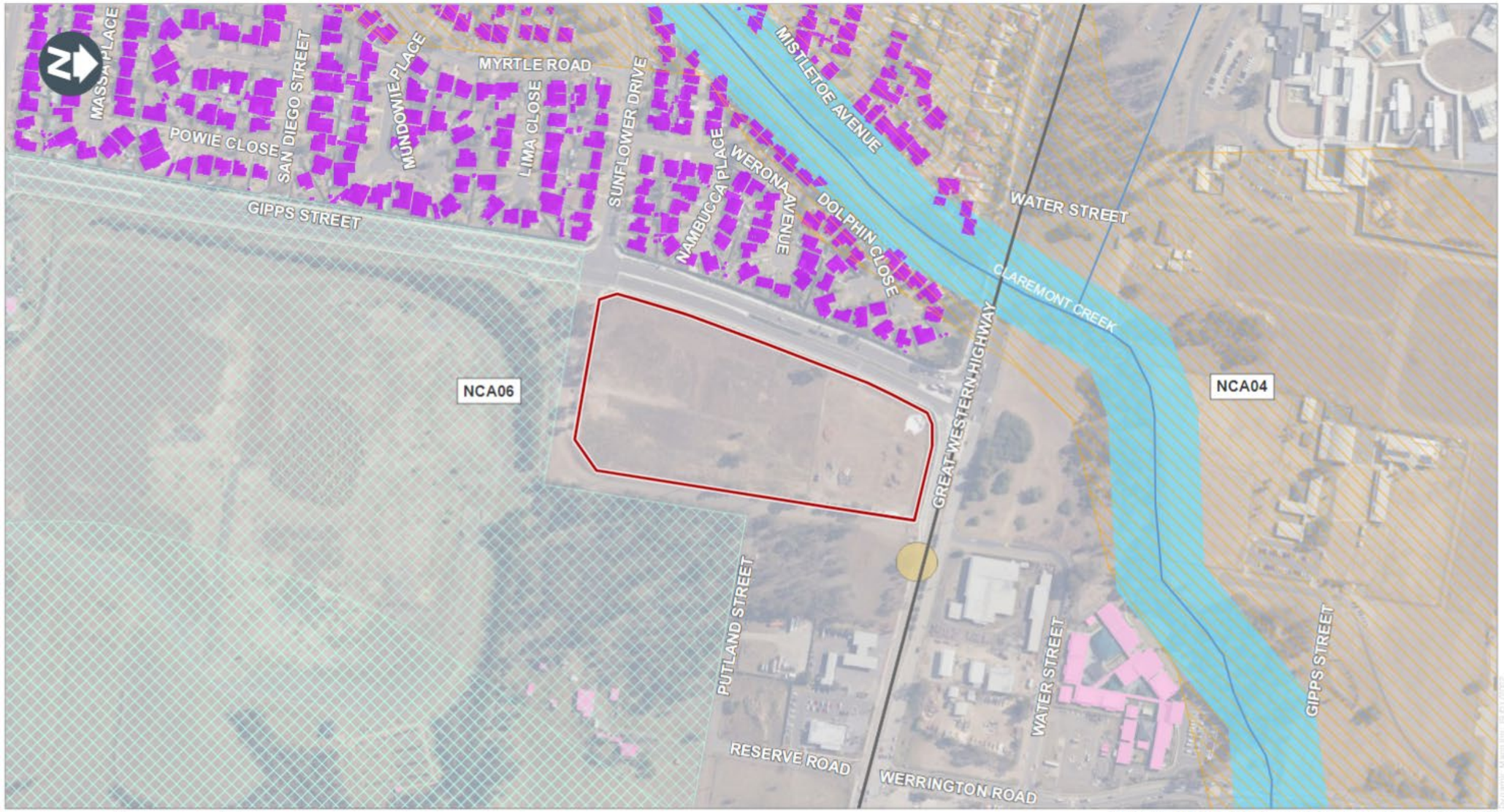
Annexure D Sensitive Area Plans





Data Sources: CPB Ghella 2021, Imagery © Department of Customer Service 2020
NSW Department of Primary Industries

Indicative site boundary
Environmental Planning Instrument Scenic protection
Key Fish Habitat - Hawkesbury-Nepean
Drainage line'

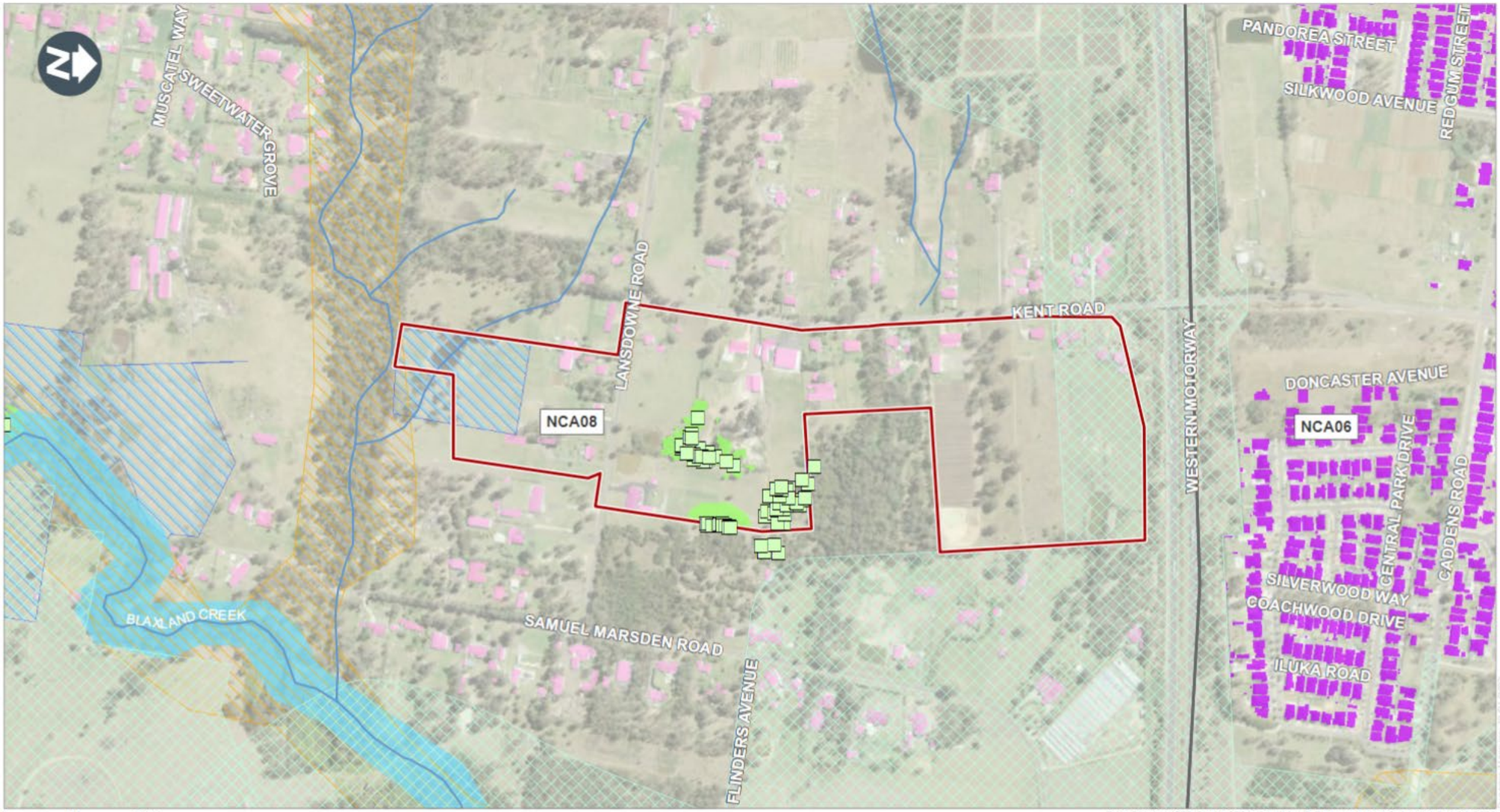
Environmental Planning Instrument heritage item
Item - General
Salinity
High salinity potential

Sensitive receiver zone
Commercial/Industrial
Residential
Other

Environmentally Sensitive Area Plan

Claremont Meadows Services Facility

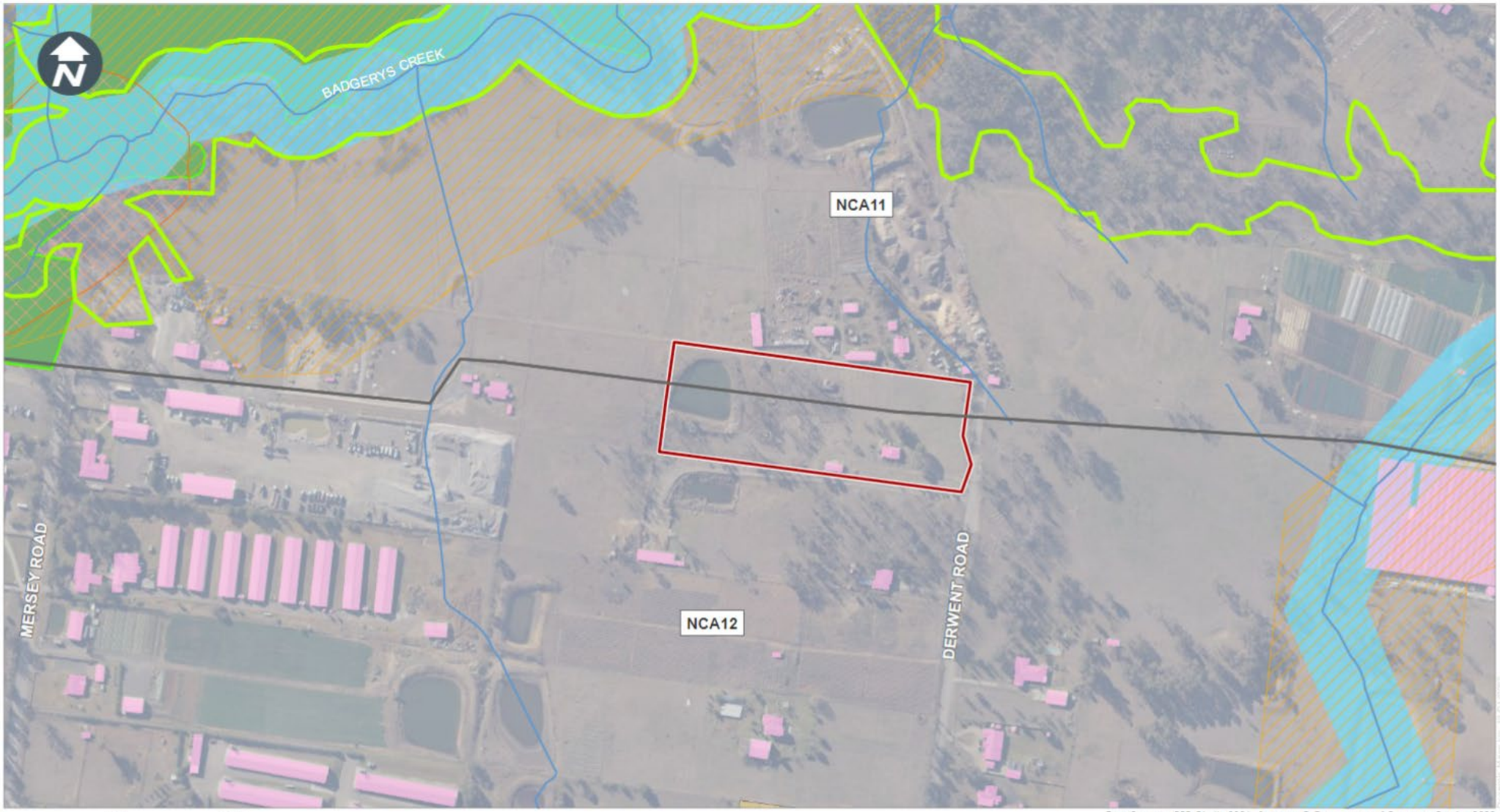
Sydney Metro WSA SBT



Environmentally Sensitive Area Plan

Orchard Hills Station Box and TBM Support

Sydney Metro WSA SBT


N
BADGERYS CREEK
NCA11
NCA12
MERSEY ROAD
DERWENT ROAD
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100
200m
GDA2020 MGA Zone 56 1:5,000 @ A3
Data Sources: CPB Ghella 2021, Imagery © Department of Customer Service 2020
NSW Department of Primary Industries
Indicative site boundary
Key Fish Habitat - Hawkesbury-Nepean
Environmental Planning Instrument Environmentally sensitive land
Drainage line'
Environmental Planning Instrument heritage item
Item - General
Salinity
High salinity potential
Known salinity
Environment conservation zone
Sensitive receiver zone
Other
Environmentally Sensitive Area Plan
Bringelly Services Facility
Sydney Metro WSA SBT


MOORE GULLY
THOMPSONS CREEK
KELVIN PARK DRIVE
0
100
200m
GDA2020 MGA Zone 56 1:6,000 @ A3
Indicative site boundary
Key Fish Habitat - Hawkesbury-Nepean
EPI Environmentally sensitive land
hydroline
Sensitive receiver zone
Infrastructure
Primary Production Small Lots
EPI heritage item
Item - General
Data Sources: CPB Ghella 2021. Imagery © Department of Customer Service 2020
NSW Department of Primary Industries
Environmentally Sensitive Area Plan
Aerotropolis Core
Sydney Metro WSA SBT

Annexure E Aspect and Impacts Risk Register

Existing site environment	Surrounding environment	Scope of SBT Works	Environmental aspect	Mitigation	Residual risk rating
St Marys Station Box (Penrith City Council Local Government Area (LGA))					
• Some existing vegetation but no identified Plant Community Types (PCT) • No waterways • Historic heritage items exist within the footprint • Outside the 1-in-20-year flood zone. • Potential historic contamination to the west of the station box.	• Adjacent to existing St Mary Station which is within the St Marys town centre • The site is immediately surrounded by local businesses / commercial, high density residential and industrial land uses • Further from the immediate location is parkland/open space and areas of low-density residential land uses • The town centre is surrounded primarily by residential, education and open space and recreation areas adjacent. • Outside the town centre land uses transition to a more residential urban setting.	• Preparatory CEMP scope (not completed prior to approval of this CEMP) • Demolition of existing industrial premises • Offices, amenities, car parking and access roads • Piling and station box excavation using rippers and rock hammers • Stub tunnel excavation using roadheaders • TBM retrieval	General environmental management	• Final CEMP, Sub-Plans and Procedures (refer to Figure 1) • Sub-plans and Monitoring Programs • Environmental Inspections • Environmental monitoring • Reporting, auditing and review	Low
			Transport	• CTMF/CTMP • Construction worker parking strategy • Haulage strategy developed using constructability analysis • Detailed site planning focussed on separation of heavy and light vehicles • TBI built prior to bus interchange closure	Medium
			Noise and vibration	• CNVS and OCCS • Noise and Vibration Management Sub-Plan • DNVIS • Noise and vibration monitoring	High
			Biodiversity	• Standard, Project and SBT Works specific mitigation measures • Statutory offsets retired by Sydney Metro in advance of impacts on biodiversity values • Included in the Flora and Fauna Management Sub-Plan risk assessment	Medium
			Non-Aboriginal heritage	• Unexpected Finds Procedure • Non-Aboriginal Heritage Management Procedure • Standard, Project and SBT Works specific mitigation measures • Archaeological Research Design • St Marys Archaeological Method Statement • Excavation Director • Protection strategy for Goods Shed and Jib Crane implemented including exclusion zone for Goods Shed • Settlement and vibration monitoring • Use of Earth Pressure Balance (EPB) TBMs to minimise the risk of settlement at the goods shed during tunnelling operations • Further investigations conducted by CPBG and documented in the Settlement and Predicted Effects Report (SMWSASBT-CPG-SWD-SW000-GE-RPT-040601-A.01) and the Building Effects Report (SMWSASBT-CPG-SWD-Sw000-GE-RPT-030201). The latter predicted a differential settlement in the order of 5mm which may result in masonry cracks and slight sticking of doors and windows.	Medium
			Aboriginal heritage	• Unexpected Finds Procedure • Salvage prior to construction to be completed by Sydney Metro • ACHMP • Aboriginal Heritage Management Procedure	Low
			Flooding, hydrology and water quality	• Standard, Project and SBT Works specific mitigation measures • Locating stockpiles and storage areas outside of flood prone areas • Water Reuse Strategy • Water Treatment Plants / treatment confirmed in Discharge Impact Assessment	Medium
			Groundwater and geology	• Standard, Project and SBT Works specific mitigation measures • Drained and undrained infrastructure including inflow specification	High

Existing site environment	Surrounding environment	Scope of SBT Works	Environmental aspect	Mitigation	Residual risk rating
				• Tunnel construction methodology • Water Reuse Strategy	
			Soils and contamination	• Unexpected Contaminated Land and Asbestos Finds Procedure • Detailed site investigations and if triggered, remediation action plans and EPA accredited site auditing • Standard, Project and SBT Works specific mitigation measures, including discharge Hold Point	Medium
			Sustainability, climate change and greenhouse gas	• Offset 25% of Scope 1 and Scope 2 greenhouse gas emissions • Sustainability Management Plan	Medium
			Resource management	• Waste and Recycling Management Sub-Plan • Standard, Project and SBT Works specific mitigation measures	Medium
			Land use and property	• Standard, Project and SBT Works specific mitigation measures	Medium
			Landscape and visual impact	• Standard, Project and SBT Works specific mitigation measures • Site layout designed to provide maximum shielding where practicable and minimise light spill • Hoarding/shielding used in combination along with relevant project graphics	Medium
			Social and economic	• Standard, Project and SBT Works specific mitigation measures • OCCS	Medium
			Air quality	• Standard, Project and SBT Works specific mitigation measures • Air quality monitoring and implementation of additional mitigation if required • Tunnel ventilation system controls	Medium
			Hazard and risk	• NSW guidelines • Bushfire Management Plan in consultation with NSW RFS and WSA (included in Emergency Response Plan)	Medium
			Cumulative impacts	• Construction Cumulative Impact Management Plan • Coordination of construction activities and communication processes with nearby projects	Medium
Claremont Meadows Services Facility (Penrith LGA)					
• Located within an open grassed area • Limited areas of thinned or scattered trees of PCT 849 – no major flora impacts • No waterways • Outside the 1-in-20-year flood zone.	• Some heavily wooded areas to the east of the site • On the other side of Kent Road (i.e. opposite the Services Facility location) is an urban land use area of medium density residential buildings and streetscapes • Council owned former landfill site located directly to the south of the site.	• Preparatory CEMP scope (not completed prior to approval of this CEMP) • Offices, amenities, car parking, and access roads • Piling and services facility shaft excavation using ripper and rock hammers • Construction of part of the cast-in-situ permanent shaft • Cross passage construction support • Invert construction support (pouring of an invert concrete slab in the tunnel) (subject to Sydney Metro approval)	General environmental management	• Final CEMP, Sub-Plans and Procedures (refer to Figure 1) • Sub-plans and Monitoring Programs • Environmental Inspections • Environmental monitoring • Reporting, auditing and review	Low
			Transport	• CTMF/CTMP • Construction worker parking strategy • Haulage strategy developed using constructability analysis • Detailed site planning focussed on separation of heavy and light vehicles	Medium
			Noise and vibration	• CNVS and OCCS • Noise and Vibration Management Sub-Plan • DNVIS • Noise and vibration monitoring	High
			Biodiversity	• Standard, Project and SBT Works specific mitigation measures	Medium

Existing site environment	Surrounding environment	Scope of SBT Works	Environmental aspect	Mitigation	Residual risk rating
				• Statutory offsets retired by Sydney Metro in advance of impacts on biodiversity values • Included in the Flora and Fauna Management Sub-Plan risk assessment	
			Non-Aboriginal heritage	• Unexpected Finds Procedure • Non-Aboriginal Heritage Management Procedure • Standard, Project and SBT Works specific mitigation measures • Archaeological Research Design • Excavation Director • Settlement and vibration monitoring	Medium
			Aboriginal heritage	• Unexpected Finds Procedure • Salvage prior to construction to be completed by Sydney Metro • ACHMP • Aboriginal Heritage Management Procedure	Low
			Flooding, hydrology and water quality	• Standard, Project and SBT Works specific mitigation measures • Locating stockpiles and storage areas outside of flood prone areas • Water Reuse Strategy • Water Treatment Plants / treatment confirmed in Discharge Impact Assessment	Medium
			Groundwater and geology	• Standard, Project and SBT Works specific mitigation measures • Drained and undrained infrastructure including inflow specification • Tunnel construction methodology • Water Reuse Strategy	High
			Soils and contamination	• Unexpected Contaminated Land and Asbestos Finds Procedure • Detailed site investigations and if triggered, remediation action plans and EPA accredited site auditing • Standard, Project and SBT Works specific mitigation measures, including discharge Hold Point	Medium
			Sustainability, climate change and greenhouse gas	• Offset 25% of Scope 1 and Scope 2 greenhouse gas emissions • Sustainability Management Plan	Medium
			Resource management	• Waste and Recycling Management Sub-Plan • Standard, Project and SBT Works specific mitigation measures	Medium
			Land use and property	• Standard, Project and SBT Works specific mitigation measures	Medium
			Landscape and visual impact	• Standard, Project and SBT Works specific mitigation measures • Site layout designed to provide maximum shielding where practicable and minimise light spill • Hoarding/shielding used in combination along with relevant project graphics	Medium
			Social and economic	• Standard, Project and SBT Works specific mitigation measures • OCCS	Medium
			Air quality	• Standard, Project and SBT Works specific mitigation measures • Air quality monitoring and implementation of additional mitigation if required • Tunnel ventilation system controls	Medium
			Hazard and risk	• NSW guidelines • Bushfire Management Plan in consultation with NSW RFS and WSA (included in Emergency Response Plan)	Medium
			Cumulative impacts	• Construction Cumulative Impact Management Plan	Medium

Existing site environment	Surrounding environment	Scope of SBT Works	Environmental aspect	Mitigation	Residual risk rating
				• Coordination of construction activities and communication processes with nearby projects	
Orchard Hills Station Box and TBM Support (Penrith LGA)					
• EIS indicates the area is 'not yet surveyed' in relation to vegetation mapping, although it indicates a small area of thinned PCT 835, 724, 849 • Blaxland Creek tributary runs through the site, north of the TBM support area • Outside the 1-in-20-year flood zone.	• Orchard Hills has a predominately rural character with undulating hills and scenic vistas. It combines semi-rural residential properties • Small-scale agricultural land uses • Patches of bushland • Defence Establishment Orchard Hills, which is owned by the Department of Defence (Commonwealth land) and is primarily used for munitions storage, maintenance and testing.	• Preparatory CEMP scope (not completed prior to approval of this CEMP) • Demolition of existing buildings and removal of septic tanks • Offices, amenities, car parking, and access roads • Lansdowne Road temporary diversion and construction of the permanent road bridge • Piling and portal, station box and dive excavation using rippers and rock hammers • Construction of cast-in-situ permanent portal structure • TBM assembly, launch and tunnelling support works • Cross passage construction support • Precast segment storage.	General environmental management	• Final CEMP, Sub-Plans and Procedures (refer to Figure 1) • Sub-plans and Monitoring Programs • Environmental Inspections • Environmental monitoring • Reporting, auditing and review	Low
			Transport	• CTMF/CTMP • Construction worker parking strategy • Haulage strategy developed using constructability analysis • Detailed site planning focussed on separation of heavy and light vehicles	Medium
			Noise and vibration	• CNVS and OCCS • Noise and Vibration Management Sub-Plan • DNVIS • Noise and vibration monitoring	Medium
			Biodiversity	• Standard, Project and SBT Works specific mitigation measures • Statutory offsets retired by Sydney Metro in advance of impacts on biodiversity values • Included in the Flora and Fauna Management Sub-Plan risk assessment • Retaining vegetation where practicable • Protection and monitoring of adjacent Cumberland Plain Woodland groundwater dependent ecology	Medium
			Non-Aboriginal heritage	• Unexpected Finds Procedure • Non-Aboriginal Heritage Management Procedure • Standard, Project and SBT Works specific mitigation measures • Archaeological Research Design • Excavation Director • Settlement and vibration monitoring	Medium
			Aboriginal heritage	• Unexpected Finds Procedure • Salvage prior to construction to be completed by Sydney Metro • ACHMP • Aboriginal Heritage Management Procedure	Low
			Flooding, hydrology and water quality	• Standard, Project and SBT Works specific mitigation measures • Locating stockpiles and storage areas outside of flood prone areas • Water Reuse Strategy • Water Treatment Plants / treatment confirmed in Discharge Impact Assessment	Medium
			Groundwater and geology	• Standard, Project and SBT Works specific mitigation measures • Drained and undrained infrastructure including inflow specification • Tunnel construction methodology • Water Reuse Strategy	High
			Soils and contamination	• Unexpected Contaminated Land and Asbestos Finds Procedure • Detailed site investigations and if triggered, remediation action plans and EPA accredited site auditing • Standard, Project and SBT Works specific mitigation measures, including discharge Hold Point	Medium

Existing site environment	Surrounding environment	Scope of SBT Works	Environmental aspect	Mitigation	Residual risk rating
			Sustainability, climate change and greenhouse gas	• Offset 25% of Scope 1 and Scope 2 greenhouse gas emissions • Sustainability Management Plan	Medium
			Resource management	• Waste and Recycling Management Sub-Plan • Standard, Project and SBT Works specific mitigation measures	Medium
			Land use and property	• Standard, Project and SBT Works specific mitigation measures	Medium
			Landscape and visual impact	• Standard, Project and SBT Works specific mitigation measures • Site layout designed to provide maximum shielding where practicable and minimise light spill • Hoarding/shielding used in combination along with relevant project graphics	Medium
			Social and economic	• Standard, Project and SBT Works specific mitigation measures • OCCS	Medium
			Air quality	• Standard, Project and SBT Works specific mitigation measures • Air quality monitoring and implementation of additional mitigation if required • Tunnel and acoustic shed ventilation system controls	Medium
			Hazard and risk	• NSW guidelines • Bushfire Management Plan in consultation with NSW RFS and WSA (included in Emergency Response Plan)	Medium
			Cumulative impacts	• Construction Cumulative Impact Management Plan • Coordination of construction activities and communication processes with nearby projects	Medium
Bringelly Services Facility (Liverpool LGA)					
• Semi-rural land with single dwellings on very large lots • Some area within the 1-in-20-year flood zone to a depth of ~0-10cm • Existing dam to be retained.	• Semi-rural land with single dwellings on very large lots • Existing land uses in this area comprise a mixture of rural industries and rural-residential properties. Land use to the west of South Creek is predominantly rural, with a rural-residential subdivision at Kelvin Park • Vegetation to be retained in the remainder of site.	• Preparatory CEMP scope (not completed prior to approval of this CEMP) • Offices, amenities, car parking and access roads • Piling and services facility shaft using rippers and rock hammers • Construction of part of the cast-in-situ permanent shaft • Cross passage construction support • Invert construction support (pouring of an invert concrete slab in the tunnel) (subject to Sydney Metro approval)	General environmental management	• Final CEMP, Sub-Plans and Procedures (refer to Figure 1) • Sub-plans and Monitoring Programs • Environmental Inspections • Environmental monitoring • Reporting, auditing and review	Low
			Transport	• CTMF/CTMP • Construction worker parking strategy • Haulage strategy developed using constructability analysis • Detailed site planning focussed on separation of heavy and light vehicles	Medium
			Noise and vibration	• CNVS and OCCS • Noise and Vibration Management Sub-Plan • DNVIS • Noise and vibration monitoring	Medium
			Biodiversity	• Standard, Project and SBT Works specific mitigation measures • Statutory offsets retired by Sydney Metro in advance of impacts on biodiversity values • Included in the Flora and Fauna Management Sub-Plan risk assessment • Retaining vegetation where practicable.	Medium
			Non-Aboriginal heritage	• Unexpected Finds Procedure • Non-Aboriginal Heritage Management Procedure • Standard, Project and SBT Works specific mitigation measures • Archaeological Research Design	Medium

Existing site environment	Surrounding environment	Scope of SBT Works	Environmental aspect	Mitigation	Residual risk rating
				• Excavation Director • Settlement and vibration monitoring	
			Aboriginal heritage	• Unexpected Finds Procedure • Salvage prior to construction to be completed by Sydney Metro • ACHMP • Aboriginal Heritage Management Procedure	Low
			Flooding, hydrology and water quality	• Standard, Project and SBT Works specific mitigation measures • Locating stockpiles and storage areas outside of flood prone areas • Water Reuse Strategy • Water Treatment Plants / treatment confirmed in Discharge Impact Assessment	Medium
			Groundwater and geology	• Standard, Project and SBT Works specific mitigation measures • Drained and undrained infrastructure including inflow specification • Tunnel construction methodology • Water Reuse Strategy	High
			Soils and contamination	• Unexpected Contaminated Land and Asbestos Finds Procedure • Detailed site investigations and if triggered, remediation action plans and EPA accredited site auditing • Standard, Project and SBT Works specific mitigation measures, including discharge Hold Point	Medium
			Sustainability, climate change and greenhouse gas	• Offset 25% of Scope 1 and Scope 2 greenhouse gas emissions • Sustainability Management Plan	Medium
			Resource management	• Waste and Recycling Management Sub-Plan • Standard, Project and SBT Works specific mitigation measures	Medium
			Land use and property	• Standard, Project and SBT Works specific mitigation measures	Medium
			Landscape and visual impact	• Standard, Project and SBT Works specific mitigation measures • Site layout designed to provide maximum shielding where practicable and minimise light spill • Hoarding/shielding used in combination along with relevant project graphics	Medium
			Social and economic	• Standard, Project and SBT Works specific mitigation measures • OCCS	Medium
			Air quality	• Standard, Project and SBT Works specific mitigation measures • Air quality monitoring and implementation of additional mitigation if required • Tunnel ventilation system controls	Medium
			Hazard and risk	• NSW guidelines • Bushfire Management Plan in consultation with NSW RFS and WSA (included in Emergency Response Plan)	Medium
			Cumulative impacts	• Construction Cumulative Impact Management Plan • Coordination of construction activities and communication processes with nearby projects	Medium
Aerotropolis Core Station (Liverpool LGA)					
• Former defence land	• Semi-rural land with single dwellings on very large lots • To the south of Badgerys Creek and WSI airport are the suburbs of		General environmental management	• Final CEMP, Sub-Plans and Procedures (refer to Figure 1) • Sub-plans and Monitoring Programs • Environmental Inspections • Environmental monitoring	Low

Existing site environment	Surrounding environment	Scope of SBT Works	Environmental aspect	Mitigation	Residual risk rating
• Some areas within the 1-in-20-year Flood zone to a depth of ~0-10cm.	Bringelly and Rossmore. Existing land uses in this area comprise a mixture of rural industries and rural-residential properties. Land use to the west of South Creek is predominantly rural, with a rural-residential subdivision at Kelvin Park.	• Preparatory CEMP scope (not completed prior to approval of this CEMP) • Offices, amenities, car parking and access roads • Piling and Station box excavation using rippers and rock hammers • Stub tunnel excavation using roadheaders • TBM retrieval		• Reporting, auditing and review	
			Transport	• CTMF/CTMP • Construction worker parking strategy • Haulage strategy developed using constructability analysis • Detailed site planning focussed on separation of heavy and light vehicles	Medium
			Noise and vibration	• CNVS and OCCS • Noise and Vibration Management Sub-Plan • DNVIS • Noise and vibration monitoring	Medium
			Biodiversity	• Standard, Project and SBT Works specific mitigation measures • Statutory offsets retired by Sydney Metro in advance of impacts on biodiversity values • Included in the Flora and Fauna Management Sub-Plan risk assessment	Medium
			Non-Aboriginal heritage	• Unexpected Finds Procedure • Non-Aboriginal Heritage Management Procedure • Standard, Project and SBT Works specific mitigation measures • Archaeological Research Design • Excavation Director • Settlement and vibration monitoring	Medium
			Aboriginal heritage	• Unexpected Finds Procedure • Salvage prior to construction to be completed by Sydney Metro • ACHMP • Aboriginal Heritage Management Procedure	Low
			Flooding, hydrology and water quality	• Standard, Project and SBT Works specific mitigation measures • Locating stockpiles and storage areas outside of flood prone areas • Water Reuse Strategy • Water Treatment Plants / treatment confirmed in Discharge Impact Assessment	Medium
			Groundwater and geology	• Standard, Project and SBT Works specific mitigation measures • Drained and undrained infrastructure including inflow specification • Tunnel construction methodology • Water Reuse Strategy	High
			Soils and contamination	• Unexpected Contaminated Land and Asbestos Finds Procedure • Detailed site investigations and if triggered, remediation action plans and EPA accredited site auditing • Standard, Project and SBT Works specific mitigation measures, including discharge Hold Point	Medium
			Sustainability, climate change and greenhouse gas	• Offset 25% of Scope 1 and Scope 2 greenhouse gas emissions • Sustainability Management Plan	Medium
			Resource management	• Waste and Recycling Management Sub-Plan • Standard, Project and SBT Works specific mitigation measures	Medium
			Land use and property	• Standard, Project and SBT Works specific mitigation measures	Medium
			Landscape and visual impact	• Standard, Project and SBT Works specific mitigation measures • Site layout designed to provide maximum shielding where practicable and minimise light spill • Hoarding/shielding used in combination along with relevant project graphics	Medium

Existing site environment	Surrounding environment	Scope of SBT Works	Environmental aspect	Mitigation	Residual risk rating
			Social and economic	• Standard, Project and SBT Works specific mitigation measures • OCCS	Medium
			Air quality	• Standard, Project and SBT Works specific mitigation measures • Air quality monitoring and implementation of additional mitigation if required • Tunnel ventilation system controls	Medium
			Hazard and risk	• NSW guidelines • Bushfire Management Plan in consultation with NSW RFS and WSA (included in Emergency Response Plan)	Medium
			Cumulative impacts	• Construction Cumulative Impact Management Plan • Coordination of construction activities and communication processes with nearby projects	Medium

Table E2: Sydney Metro likelihood criteria and risk matrix

Probability: One off event How likely?	Frequency: Repeated How often?	Likelihood		Consequence: Insignificant C6	Minor C5	Moderate C4	Major C3	Severe C2	Catastrophic/ Transformational C1
Expected to occur frequently during time of activity or project. Greater than a 90% chance of occurring.	10 times or more every year	**Almost certain**	**L1**	Medium	High	High	Very High	Very High	Very High
Expected to occur occasionally during time of activity or project. A 75-90% chance of occurring.	1-10 times every year	**Very Likely**	**L2**	Medium	Medium	High	High	Very High	Very High
More likely to occur than not occur during time of activity or project A 50-75% chance of occurring.	Once each year	**Likely**	**L3**	Low	Medium	Medium	High	High	Very High
More likely not to occur than occur during time of activity or project. A 25-50% chance of occurring.	Once every 1 to 10 years	**Unlikely**	**L4**	Low	Low	Medium	Medium	High	High
Not expected to occur during the time of activity or project. A 10-25% chance of occurring.	Once every 10 to 100 years	**Very Unlikely**	**L5**	Low	Low	Low	Medium	Medium	High
Not expected to ever occur during time of activity or project. Less than 10% chance of occurring.	Less than once every 100 years	**Almost Unprecedented**	**L6**	Low	Low	Low	Low	Medium	Medium

Table E3: Sydney Metro consequence criteria

	CONSEQUENCES					
	Insignificant	Minor	Moderate	Major	Severe	Catastrophic
	C6	C5	C4	C3	C2	C1
Environment	No appreciable changes to environment and/or highly localised event.	Change from normal conditions within environmental regulatory limits and environmental effects are within site boundaries.	Short-term and/or well-contained environmental effects. Minor remedial actions probably required.	Impacts external ecosystem and considerable remediation is required.	Long-term environmental impairment in neighbouring or valued ecosystems. Extensive remediation required.	Irreversible large-scale environmental impact with loss of valued ecosystems.
Regulatory or Legal Breach	Low-level non-compliance with legal and/or regulatory requirement or duty by individuals or TfNSW.	Minor non-compliance with legal and/or regulatory requirement or duty. Investigation and/or report to authority.	Moderate non-compliance. Subject to comment and monitoring from applicable regulator. Small fine and no disruption to services.	Systemic non-compliance/Major breach resulting in enforcement action and/or prohibition notices. Substantial fine and no disruption to services.	Substantial breach resulting in prosecution, fines and/or litigation. Licence or accreditation restricted or conditional affecting ability to operate.	Prosecution leading to imprisonment of TfNSW executive. Loss of operating licence.
Customer Experience and Satisfaction	Infrequent or unrelated written complaints.	A stream of written complaints for more than 3 months.	A stream of written complaints for more than a year.	A substantial and sustained uplift in the rate of complaints.	A deluge of complaints for up to 6 months with normal background rates increasing by a factor of 3 or more.	A prolonged deluge of complaints for more than 6 months, with some normal background rates increasing by a factor of 10 or more.

Annexure F AMBS St Marys Archaeological Method Statement

Sydney Metro – Western Sydney Airport Station Box and Tunnelling St Marys Site Archaeological Method Statement

Prepared by AMBS Ecology & Heritage
for CPB Ghella Joint Venture

Final

January 2022

AMBS Reference: 20854

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Approved by:	Jennie Lindbergh, AMBS Director Historic Heritage

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Figures

1 Introduction

The CPB Contractors and Ghella Joint Venture (CPBG) have been contracted by Sydney Metro to complete the design and construction of the Station Boxes and Tunnelling Works (SBT Works) for Western Sydney Airport Metro Project (the Project). AMBS Ecology & Heritage (AMBS) has been commissioned by CPBG to prepare an Archaeological Method Statement (AMS) for the SBT Worksite. The Project involves the construction of approximately 23km of new track between St Marys Station and the future Western Sydney Aerotropolis in Bringelly, as well as the construction of six stations. SBT Works at St Marys Station include the excavation of a station box and construction of a new metro station (Figure 1.1).

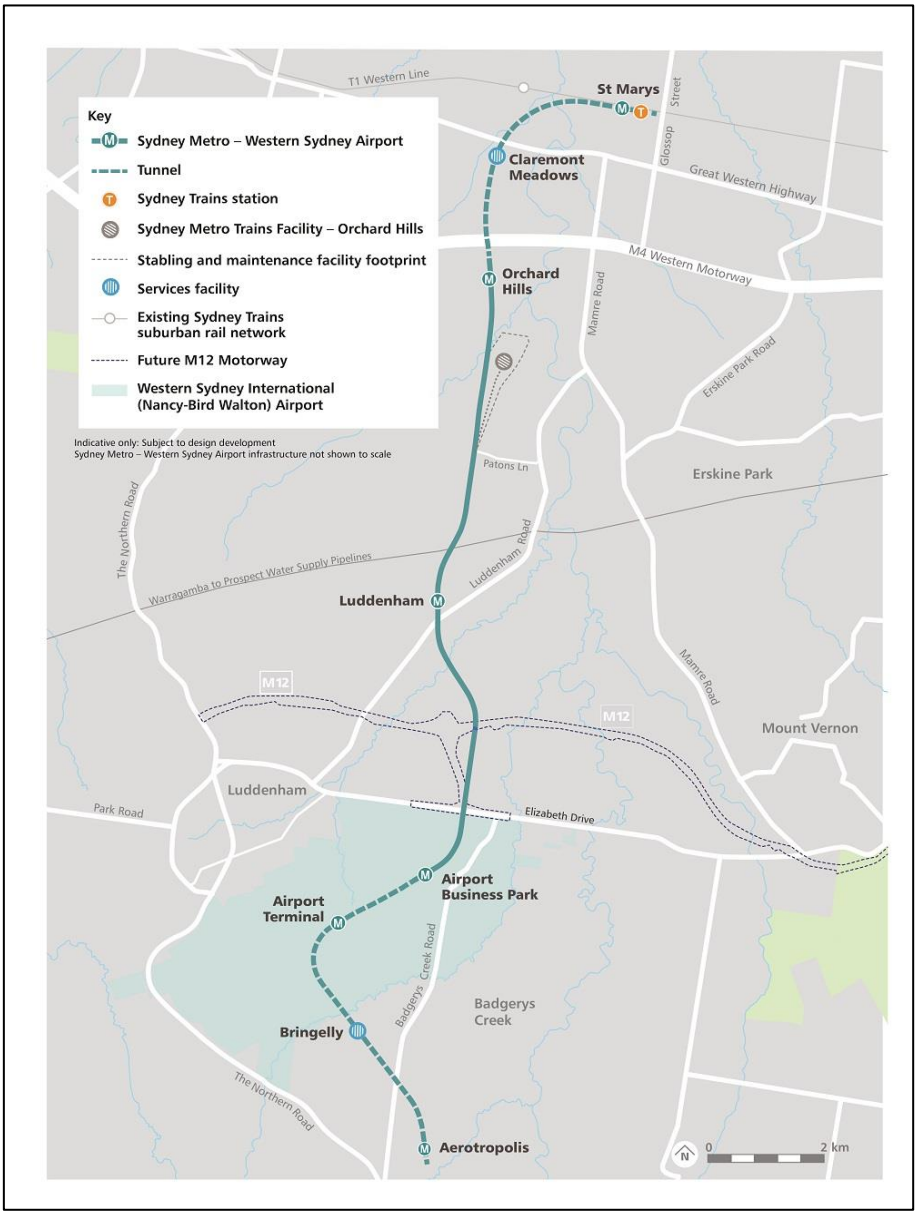

Figure 1.1 Overview of the Sydney Metro - Western Sydney Airport project.

1.1 Study Area

The study area consists of the land to the south and east of St Marys Station, bounded by Station Street, Chesham Street, and Glossop Street. To the south of Station Street, the study area also includes the land currently occupied by the St Marys Station Plaza (Figure 1.2). It is located in Penrith LGA, Parish of Melville, County of Cumberland. The study area consists of:

- Lots 1 and 2 DP 1001735
- Lot 1 DP126784
- Lots 7 and 8 DP 734738
- Part Lot 1 DP 1040178
- Part Lot 9 DP 840717.

St Marys Station is listed on the State Heritage Register as an item of State Significance (SHR 01249). The SBT Worksite does not cover the entire site area shown in the EIS and is partially within the SHR curtilage. The SBT station box is located outside the St Marys SHR curtilage (blue rectangle in Figure 1.1). However, the temporary area (yellow area in Figure 1.1) encompasses a small portion of the southern area of the SHR curtilage. The temporary areas will not include bulk excavations, these areas will be used for site access and storage. There is an area of shared access (green area in figure 1.1) with Sydney Trains to the north of the bulk excavation area.

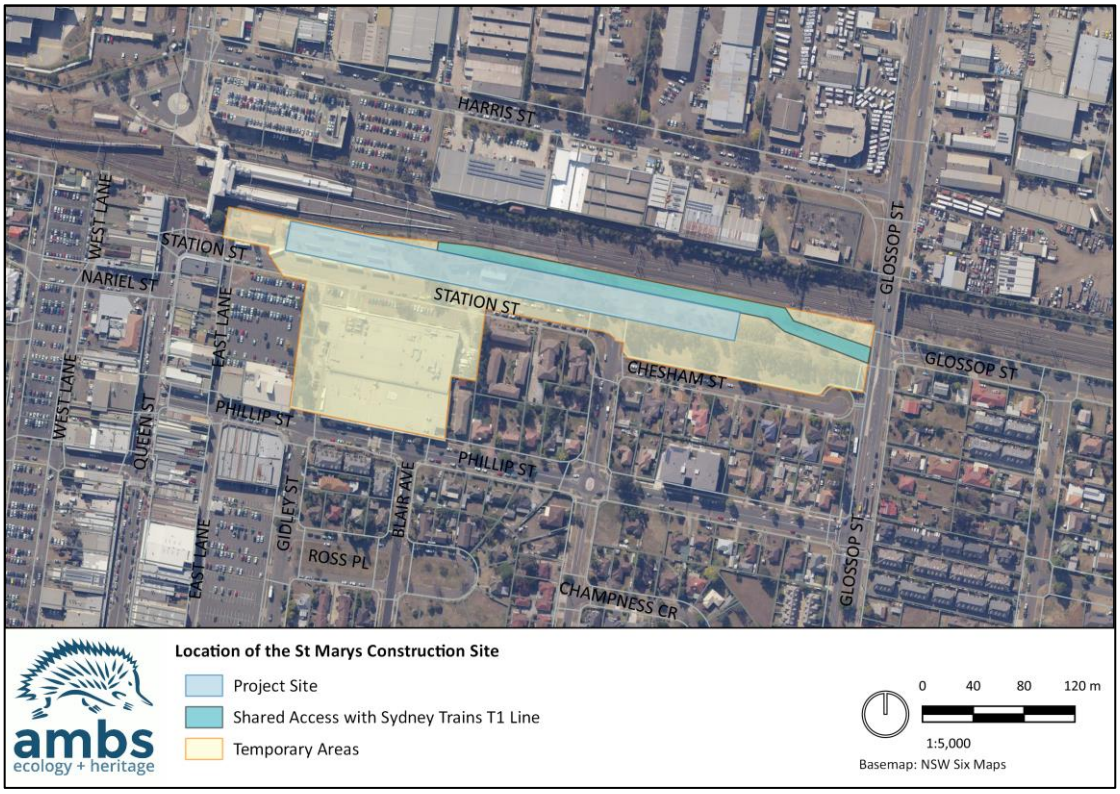

Figure 1.2 Location of the St Marys Construction Site.

1.2 Project Approvals

CPBG has adopted a staged approach to the commencement of works which considers potential heritage impacts and the construction program:

- *Preparatory Works: including demolition, site access and other local area works, site levelling/grading, utility and temporary services work, erection of demountable buildings and noise barriers and use of ancillary facilities including onsite parking*
- *Bulk Excavation and Tunnelling Works: including the Preparatory Works scope (not completed prior to Final CEMP approval) bulk excavation, acoustic shed installation, tunnelling and cross passage installation.*

The definition of Low impact Works in SSI 10051 Planning Approval permits the following under item (j):

> Archaeological testing for historical archaeological resources to identify and seek to reduce impact on state significant archaeology where it is proposed, ahead of construction or in association with (a) to (h) above.

However, it also notes:

> where areas of known or expected non-Aboriginal archaeological potential are affected by any Low Impact Work, that work is construction, unless otherwise determined by the Planning Secretary in consultation with Heritage NSW.

Notwithstanding, it noted that the Preparatory Works are addressed in a Construction Environmental Management Plan supported by Environment Procedures and therefore the limitations applied to Low Impact Works do not apply to archaeology undertaken as part of the Preparatory Works. As such the required archaeological investigation of the western end of St Marys Station Box will be completed in accordance with this Archaeological Method Statement as Preparatory Works.

The qualifications and experience of the Primary and Secondary Excavation Directors for the SBT Works in accordance with Condition E23 of the Conditions of Approval will be set out in a separate application for the approval of the Excavation Director and will be submitted to the Planning Secretary. The nominated Excavation Directors are:

- Primary Excavation Director: Lian Ramage, AMBS Senior Historic Heritage Consultant
- Secondary Excavation Director: James Cole, AMBS Historic Heritage Consultant

The Project was approved as State Significant Infrastructure (SSI) by the Minster for Planning on 23 July 2021 subject to a number of Conditions set out in *Sydney Metro Western Sydney Airport Conditions of Approval* (Application no. SSI 10051) (Planning Approval). Conditions of Approval which are relevant to this AMS include:

A1. The Proponent must carry out the CSSI in accordance with the terms of this approval and generally in accordance with the:
- *(a) Sydney Metro – Western Sydney Airport Environmental Impact Statement dated 21 October 2020; and*
- *(b) Sydney Metro – Western Sydney Airport Submissions Report submitted April 2021.*

E22. The Archaeological Research Design included in the documents listed in Condition A1 must be implemented during construction.

E23. Before commencement of archaeological excavation, the Proponent must, in consultation with Heritage NSW, nominate a suitably qualified Excavation Director, who complies with Heritage Council of NSW's Criteria for Assessment of Excavation Director (September 2019), to oversee and advise on matters associated with historical archaeology for the approval of the Planning Secretary. The Excavation Director must be present to oversee excavation, advise on

archaeological issues, advise on the duration and extent of oversight required during archaeological excavations consistent with the Archaeological Research Design and Excavation Methodology(s) identified in the documents listed in Condition A1. More than one Excavation Director may be engaged for CSSI to exercise the functions required under the conditions of this approval.

E26. Following completion of all work described in the documents listed in Condition A1 in relation to heritage items, a non-Aboriginal Archaeological Excavation Report including the details of further historical research either undertaken or to be carried out and archaeological excavations (with artefact analysis and identification of a final repository for finds) and addressing the research design, must be prepared in accordance with any guidelines and standards required by the Heritage Council of NSW and Heritage NSW.

E27. The non-Aboriginal Archaeological Excavation Report must be submitted to the Planning Secretary, relevant councils and Heritage NSW for information within 12 months of completing all Work described in the documents listed in Condition A1 in relation to heritage items. Copies of the Report must also be provided to relevant local historical societies and local libraries.

Documentation referred to in Condition A1 consists of environmental assessments undertaken for the project-wide works, including assessments of Aboriginal and Non-Aboriginal Heritage undertaken initially for the Environmental Impact Statement (EIS) and updated for the Submissions Report. These documents include:

- *Sydney Metro – Western Sydney Airport Environmental Impact Statement* (M2A Joint Venture 2020)
    - *Sydney Metro – Western Sydney Airport Technical Paper 4 Non-Aboriginal Heritage* (Artefact 2020)
    - *Sydney Metro – Western Sydney Airport Technical Paper 5 Aboriginal Heritage* (M2A Joint Venture 2020)
- *Sydney Metro – Western Sydney Airport Submissions Report* (M2A Joint Venture 2021)
    - *Sydney Metro – Western Sydney Airport Revised Aboriginal Cultural Heritage Assessment Report* (M2A Joint Venture 2021) (Submissions Report Appendix H)
    - *Sydney Metro – Western Sydney Airport Aboriginal Archaeological Report* (M2A Joint Venture 2021) (Submissions Report Appendix J)
    - *Sydney Metro – Western Sydney Airport Archaeological Research Design* (Artefact 2021) (Submissions Report Appendix K).

The EIS contains a number of proposed mitigation measures, revised as a part of the Submissions report. Along with Condition E22, Measure NAH5 applies specifically to the St Marys construction site, and states:

Archaeological investigations would be undertaken in accordance with recommendations in the non-Aboriginal Archaeological Research Design.

The *Sydney Metro – Western Sydney Airport Archaeological Research Design* (Artefact 2021) (ARD) identified that, should construction works impact the area of low-moderate archaeological potential shown in Figure 1.3, impacts should be managed in accordance with an AMS.

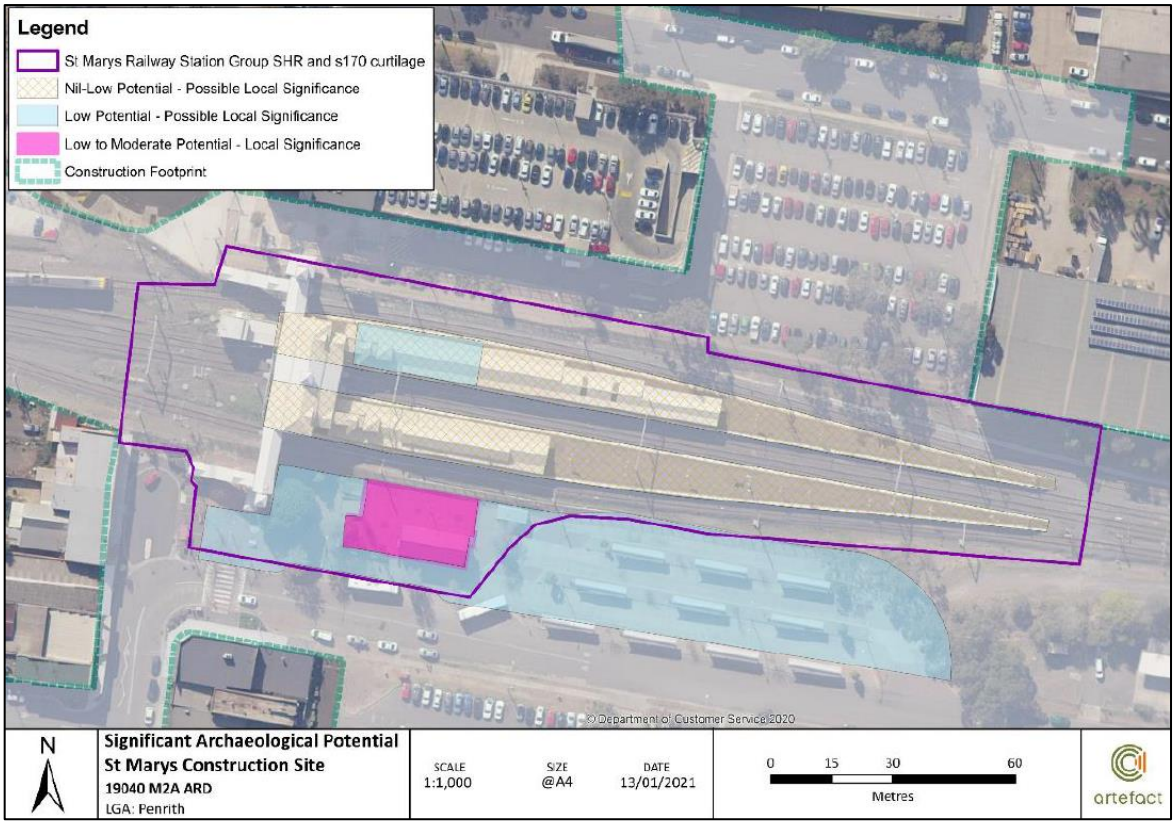

Figure 1.3 Areas of archaeological potential identified at St Marys Station (Artefact 2021:38).

The ARD outlines a number of general archaeological methodologies and specifies that the AMS should be consistent with these methodologies. In addition to this, it states that the AMS should generally include the following steps:

- *Review of geotechnical data, and detailed service surveys as it becomes available which was not available during the development of this ARD*
- *Review of detailed design, scope of works, construction program and methodology*
- *Reassessment of potential for impacts to significant archaeological resources based on work methodology*
- *Review of contamination reports and archaeological mitigation requirements during any remediation program*
- *Confirm appropriate archaeological investigation methodology to mitigate impacts from the works*
- *Provide environmental sampling and sieving strategies where appropriate*
- *Outline opportunities to provide information regarding the archaeological investigations to the public* (Artefact 2021:45).

1.3 Methodology & Authorship

This AMS is consistent with the principles and guidelines of the *Burra Charter: The Australian ICOMOS Charter for the Conservation of Places of Cultural Significance 2013* (Burra Charter). The report has been prepared in accordance with current best practice guidelines as identified in the *NSW Heritage Manual* (1996), published by the Heritage Office and Department of Urban Affairs and Planning, and associated supplementary publications.

This AMS aims to identify the historic archaeological potential and significance associated with the study area to ensure the protection of its archaeological values. This AMS has been written by Lian Ramage, AMBS Senor Historic Heritage Consultant, James Cole, AMBS Historic Heritage Consultant. Additional historical research has been undertaken by Madeline Rodwell, AMBS Historic Heritage Consultant. Jennie Lindbergh, AMBS Director Historic Heritage reviewed the report for quality and consistency.

2 Historical Context

The following is a summarised history of St Marys from the October 2020 Non-Aboriginal heritage technical paper 4 prepared by Artefact Heritage for the Sydney Metro – Western Sydney Airport Environmental Impact Statement. AMBS have undertaken additional in-depth research to accurately assess the archaeological potential and significance of St Marys Station, specifically the area identified for the station box works.

In 1806 the children of Governor Philip Gidley King both received land grants at South Creek (later renamed St Marys). These grants were not settled or developed until the 1820s. Mary Putland, daughter of Governor William Bligh was also granted 600 acres of land in 1806. Maurice O'Connell received the adjoining grant and the couple married in 1810. By 1830 a house was built on the now combined grant called Frogmore Estate. The area was called South Creek as the European settlement was concentrated around the creek. The permanent water source enabled the land grants to be utilised as working holdings and an agricultural community developed. Dunheved Estate, one of the largest in the colony, was located immediately north of the study area and was used for breeding cattle, sheep, pigs and horses and included land for orcharding and grain crops.

In 1837 the King family selected a location for a parish Church; St Mary Magdalene Anglican Church and from the late 1830s the small village of St Marys began to grow. The first town allotments were subdivided in 1841 and the first school opened in 1839. St Marys Station (originally named South Creek Station) was opened in 1863 as part of the Great Western Railway extension to Penrith and saw the town go through a rapid development and in 1886 the railway was duplicated.

The sawmilling industry typically had close associations with railways; with timber and sawmills often constructed near either a railway siding or river transport. The first reference of a timber industry at St Marys was in 1882 when William Fleming posted articles in the *Nepean Times* as a Brick and Timber Merchant at South Creek (*Nepean Times*, 2 June 1882: 1). Unfortunately, no Certificates of Title exist for the former industrial properties near St Marys Station. John Brown, located near Mount Druitt; Jessie Turner, located near Werrington and William Anderson, located near Rooty Hill owned property near the railway line and could have constructed the sidings to transport timber. The below table summarises the names associated with sawmilling in St Marys and related property titles (Table 2.1).

Table 2.1 Individuals associated with the sawmilling industry at St Marys.

Name	*Nepean Times* reference	Certificate of Title (CT)/location
Fleming, William	• Advertisement by William Fleming, Brick and Timber Merchant, South Creek (2 Jun 1882: 1) • Advertisement for Billet Wood Cutters by Fleming (7 Oct 1882: 3)	• No CT issued near the railway line, most land titles located near Great Western Road at St Marys
Brown	• Accident at Mr Brown's sawmill, near the railway station (St Marys) (5 Dec 1885: 3) • JHW Brown appealed against an assessment of his sawmill on railway property at St Marys (30 Aug 1890: 2)	• Various J Brown's owned property in the region, only one near railway line • 1884, CT Vol 710 Fol 49: John Brown for Lots 1-5 and 40-44, Sec 3, Parish of Rooty Hill – located Mount Druitt • Three titles issued to name Brown near railway line, none near station (CT 1109-60, CT 1074-205, CT 1261-232)

Name	*Nepean Times* reference	Certificate of Title (CT)/location
Turner/ Garner	• Garner, Turner & Co., St Marys, advertise for sleeper choppers (11 Dec 1886: 8) • Accident at Turner Brothers sawmill, St Marys (25 Feb 1888: 2) • Fire at sawmill near the railway station belonging to Mr George Turner, junior, damage reported (15 May 1897: 3)	• Many titles issued for a Turner in St Marys and the region, none near station • 1897, CT Vol 1235 Fol 85: Jessie Turner for Lots 34-36, part of original Mary King grant – located in Werrington • CTs found for George Turner junior, none near station
Sainsbury, J H	• JH Sainsbury to erect buildings suitable for timber yards and intended to carry on a business of timber merchant in St Marys (16 Apr 1892: 4)	• CT Vol 912 Fol 202: in joint tenancy, Joseph Sainsbury, builder, William Charker, Timber Merchant, Frederick Turner, storekeeper – located on Great Western Road
Anderton	• Four sawmills at St Marys Station, Mr Anderton had erected an engine plant on left-hand side of line, near Turner's (26 Oct 1895: 3)	• Few titles issued for an Anderton, Anderson also searched • 1895, CT Vol 1170 Fol 63: William Thomas Anderson for Lots 145-147 and Lots 151-155, Parish of Rooty Hill – located in Rooty Hill
Andrews, Fred	• Mr Fred Andrews now carrying on the sawmill business at St Marys (30 Apr 1898: 4)	• No CTs found near railway line
Lalor, Richard	• Installation of telephones in St Marys, Richard Lalor, sawmills listed (17 Apr 1915: 8)	• Not searched

In 1890 three sawmills were in operation at St Marys and in 1895, a fourth was opened by Mr Anderton. Other notable families associated with the industry were Turner & Garner and William Fleming. After William Fleming's death in 1897, he was described as having carried on a timber business at St Marys for many years. The number of sawmills in operation during the early-mid 1900s fluctuated: in 1901 George Turner, junior, was the only sawmill operator; in 1910 there were three mills operated by Mrs Turner, George W. McCrea and Frederick Andrews; in 1930 there were two timber yards operated by Frederick Andrews and Mrs G H Luke (Green & Thorp, 1987: 21-22).

In December 1913, it was reported that the Chief Commissioner decided upon the removal of the sawmills at St Marys (*Nepean Times,* 27 Dec 1913: 3). However, in December 1922 a spark from a passing engine set fire to material around the sawmills at St Marys, it was stated both mills could have been destroyed if not for the actions of people nearby (*Nepean Times*, 30 Dec 1922: 3). It is unclear if these mills were the same ones which were mentioned in the 1913 article and had not been removed or if they were more recent constructions.

Sawmills utilised the local timbers in the region, hardwoods were cut for railway sleepers, telegraph poles and builder timbers while softer woods were utilised for use in the Sydney domestic market such as firewood. Within St Marys there was employment for timber cutters, carters and saw millers, it is believed 200-300 men were employed at the height of the industry between Kingswood and Rooty Hill. In July 1900, it was reported 1,352 tons of firewood was sent from St Marys by rail, sawmills would have been located near St Marys Railway Station so cut timber could be loaded directly into railway trucks via sidings. While

sawmilling in St Marys saw a decline, it survived until the Second World War (Green & Thorp, 1987: 21).

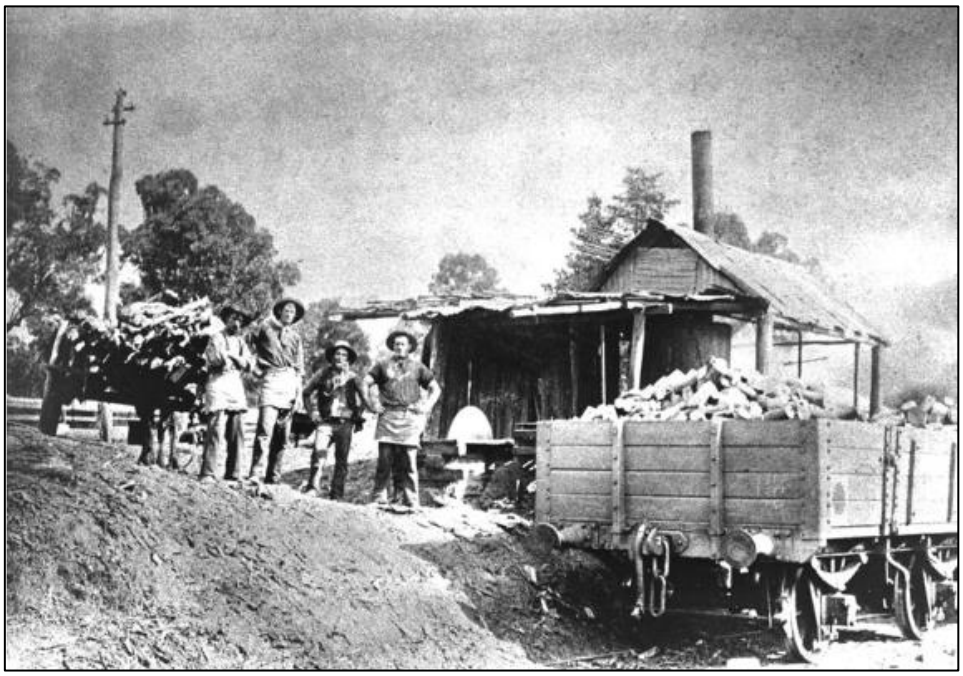

Figure 2.1 The only known photograph of a sawmill at St Marys titled *Sawmill and firewood factory, St Marys* (c.1900) showing four workers a timber framed shelter, a horse-drawn wagon with unsawn timber and a railway wagon loaded with sawn timber on an adjacent siding (Source: Penrith City Library, Item Reference 6906).

The 1906 Sydney Trains plan of St Marys Station shows the location of two sawmills, one located on the southern side of the line to the east of the Goods Shed (within the study area) and the other on the northern side of the line (Figure 2.2). The sawmills have been crossed out, indicating that they had either been demolished/dismantled or were no longer in use at the time of the plan. The northern sawmill had an adjoining chute which would have been used to load sawn timber onto rail rolling stock as this sawmill was located above a cutting which can be seen in the 1943 aerial (Figure 2.3). The c.1900s photograph of the sawmill at St Marys (Figure 2.1) shows a cutting above the siding, based on the 1943 aerial, it is likely the photographed sawmill was located on the northern side of the line; however, it is not known if it is the same mill indicated on the 1906 Sydney Trains plan (Figure 2.1-Figure 2.3). The southern side of the line saw little development, in the 1943 aerial the siding which led to the Goods Shed is still present. The small structures which can be seen in the aerial could be associated with the sawmill as they are roughly in the same location as the plan. By 2021, the siding had been removed or covered over and a three-bay bus station with ten shelters had been constructed (Figure 2.4).

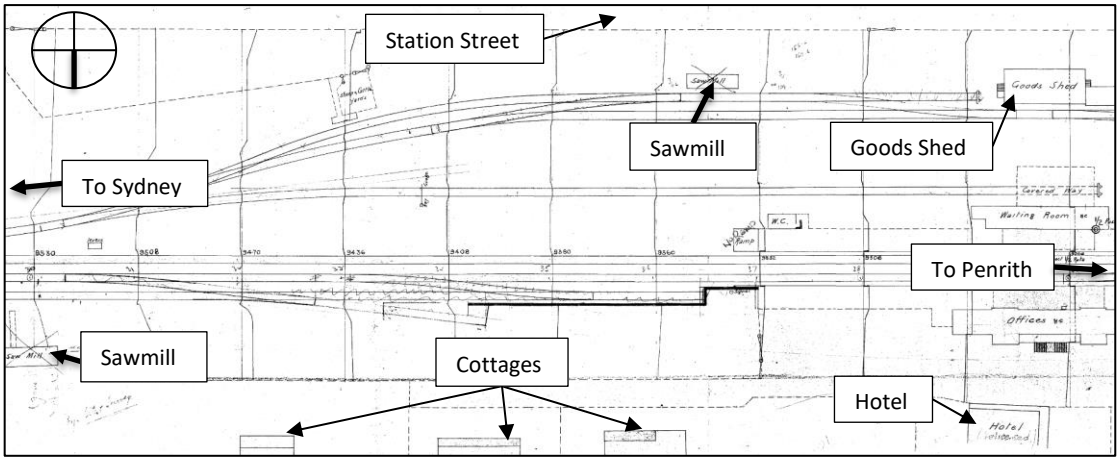

Figure 2.2 April 1906, Sydney Trains plan EDMS CV0069852, showing the location of two sawmills (crossed out) in relationship to buildings around the station precinct.

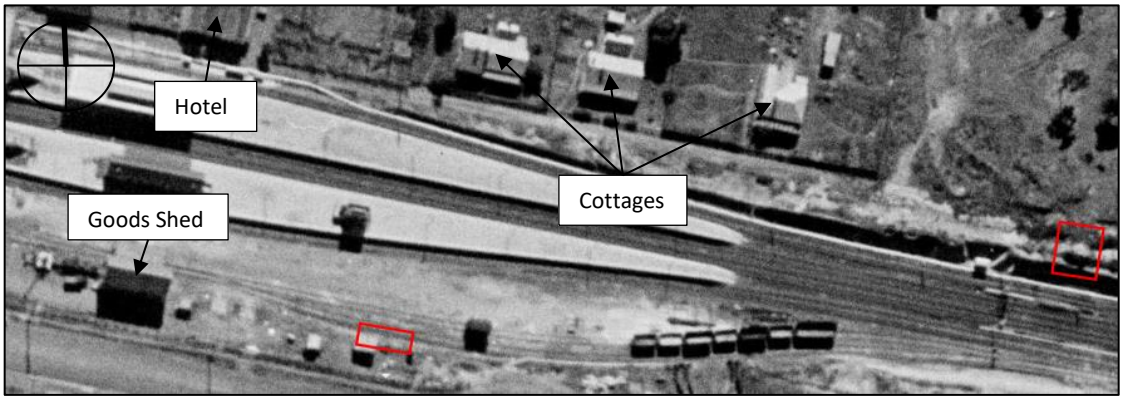

Figure 2.3 1943 aerial showing the location of the two sawmills (boxed red) shown in the Sydney Trains plan.

Figure 2.4 Current aerial showing the location of the two sawmills (boxed red, adjoining ramp included in the northern sawmill outline) shown in the Sydney Trains plan.

3 Archaeological Context

3.1 Areas of Archaeological Potential Assessed in the ARD (Artefact Heritage 2021)

The ARD undertaken by Artefact Heritage in 2021 divided the project into archaeological management zones based on archaeological potential. Zone 1; Significant archaeology - exclusion and Zone 2; No significant archaeology - Unexpected finds procedure. One area was identified as potentially containing significant archaeology: St Marys Construction site. Specifically, the area of the St Marys Goods Shed (Figure 3.1). The ARD identified that tunnelling works for the station box would potentially impact remains associated with the St Marys Goods Yard. Management of the Goods Yard involves establishing an exclusion zone around the area of potential. The station box works are outside of this exclusion zone.

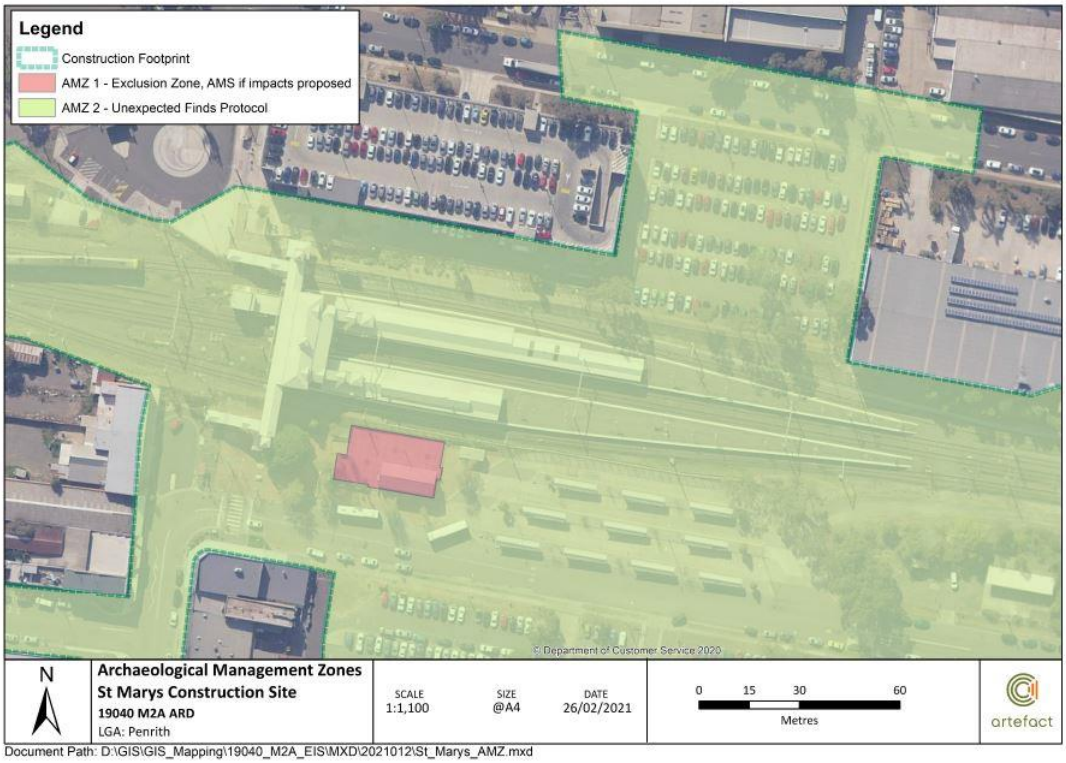

Figure 3.1 Archaeological management zones within St Marys site. Red – Zone 1, Green – Zone 2. (Source: Artefact Heritage ARD 2021:Figure 40:55)

In preparation for the tunnelling works AMBS has undertaken further detailed research of the project site. AMBS has identified former sawmills within the location of the St Marys construction area and therefore initiated additional research (Section2 – Historical Context) into these sawmills to enable an accurate assessment of potential and significance of these remains (Figure 2.2). The historical research undertaken for the EIS and ARD did not identify the area of the former sawmills and therefore did not include these within the assessment of archaeological potential. St Marys Sawmill Precinct was listed on the 1991 Penrith LEP; however, it has since been removed after the 2007 *Penrith Heritage Study* recommended that the item be removed as "no visible sites remain, and the area has been redeveloped". It is still currently included on the SHI as an item of local archaeological significance. The SHI listing details the sawmill precinct as encompassing Station Street and Harris Street and describes the precinct as the previous site of tanning and wheelwright industries, source of timber for the construction of the Western Railway, Sawmills, large saleyards and the old mud-brick

"Railway Hotel". No visible evidence remains. The surrounding area is of historical significance to St Marys because of its association with the early sawmills and sales yards.

There are a number of sawmills, timber mills and lumberyards as well as dwellings and relics directly associated with these industries listed on the NSW State Heritage Inventory (SHI), three items are listed on the State Heritage Register (SHR) and 42 items listed on a Local Environmental Plans (LEP); six of which are dwellings directly associated with sawmills, the distribution of these can be seen in Figure 7.1 (Appendix A - Summary of Heritage listings of sawmills and dwellings with direct association to sawmills
Table 7.1).

3.2 Previous Archaeological Excavations within the Project Area

3.3 St Marys Commuter Car Park

The 2012 archaeological excavations undertaken by Archaeological Management & Consulting Group Pty Ltd (AMAC) for St Marys Commuter Carpark identified archaeological resources associated with Shane's Park Hotel (possibly encompassing the earlier Railway Hotel), three wells and postholes which were cut into the natural soil profile, all within the former curtilage of the Sawmill Precinct, indicating potential for discrete features associated with the sawmills to be present in less developed or disturbed areas (Figure 3.2 and Figure 3.3). The archaeological report recommended that future revision of the LEP and Local Heritage Study consider this area as having archaeological potential. The site retains two wells, fills intact, which are of local significance while the third well found outside the study area is also most likely local significance and indicates the potential for other archaeological sites in this area (AMAC, 2012: 183).

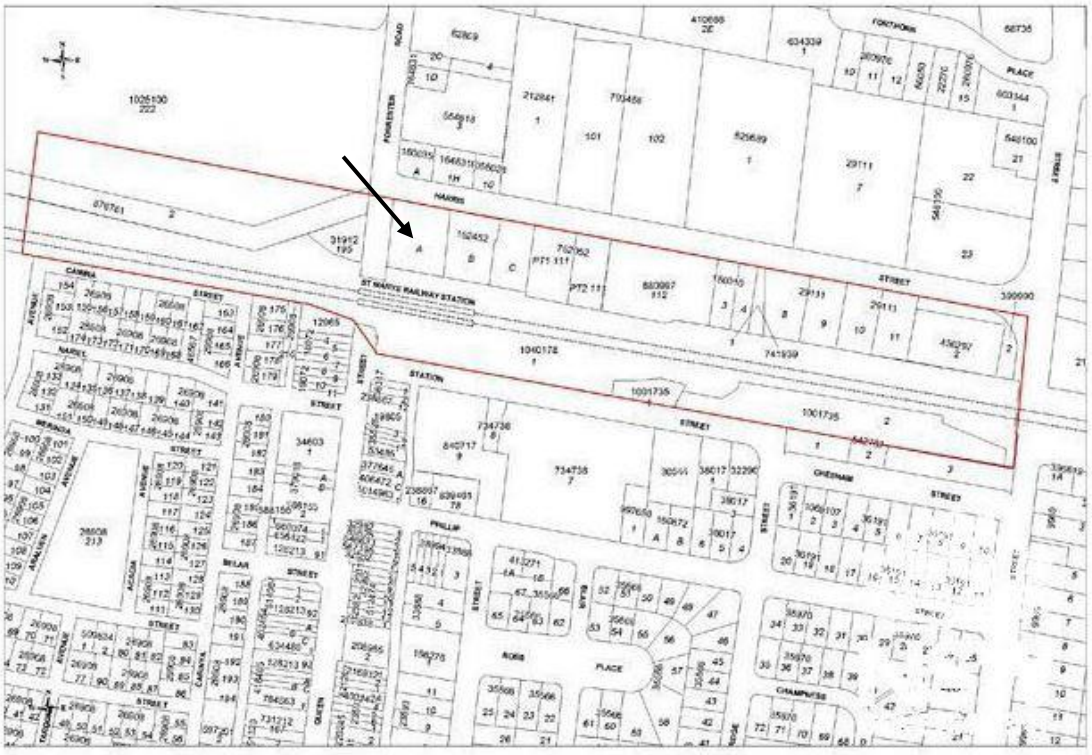

Figure 3.2 SHI image of the St Marys Sawmill Precinct Curtilage. AMAC 2012 archaeological excavations indicated by black arrow (Source: https://www.hms.heritage.nsw.gov.au/App/Item/ViewItem?itemId=2260285)

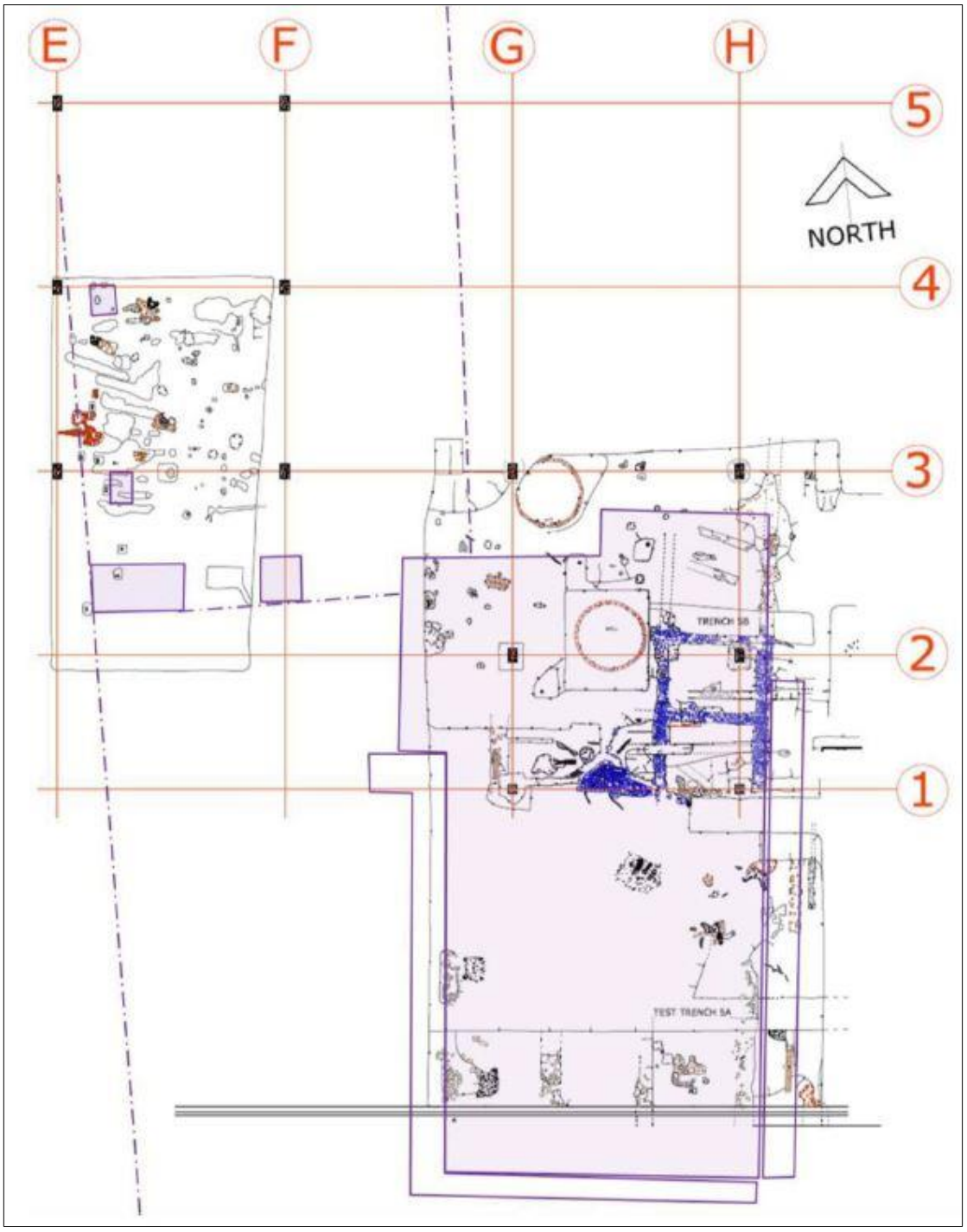

Figure 3.3 AMAC 2021 plan of archaeological resources found during excavations (Source: AMAC: Figure 7.1: 154: 2012).

3.4 Fairfield Transport Interchange

In 2015 Australian Museum Consulting (AM Consulting) undertook archaeological excavations for upgrades to the transport interchange on the northern side of Fairfield Railway Station. Excavations included trenches within the former Goods Yard and the former commuter carpark. Remnants of former railway sidings associated infrastructure, possible loading banks, two brick sumps, coarse earthenware waste pipes, sleepers and stratigraphic evidence

demonstrating the transition from goods yard to a transport interchange were exposed. During excavations for a new bicycle shelter a sandstock brick structure with a low arch and lime mortar was revealed. The mortar had been used to render the surface of the structure which had eroded exposing the bricks. These archaeological excavations demonstrate that archaeological resources can survive despite later impacts such as the construction of commuter car parks and transport interchanges.

3.5 Glenfield Station Road Works

Road preparation works for the South West Rail Link Project at Railway Parade, adjacent to Glenfield Station revealed unexpected archaeological remains. In 2012 AMBS undertook a program of archaeological monitoring of the works to ensure further impacts on archaeological features were mitigated. Archaeological features were identified in four locations along Railway Parade. However, physical evidence associated with a sawmill was also exposed. A large archaeological feature; 3.7m x 4m x 3.1 m, constructed of hardwood beams and sandstone blocks was revealed in area 4. A timber platform was located abutting the feature measuring 1.2m wide. The platform comprised at least five rectangular boards laid side to side. A mixed clay fill separated a sandstone pavement measuring approximately 1.1m x 2m x 3.1m ran along the same axis as the wooden platform. A second sandstone surface was also revealed with linear grooves on the surface (Figure 3.4). These archaeological features were the remains of the former sawmill at Glenfield. The archaeological report concluded that the survival of discrete sections of archaeological features within the vicinity of the railway station highlights the potential for further relics and archaeological features to be found within the local area (AMBS, 2012: 33).

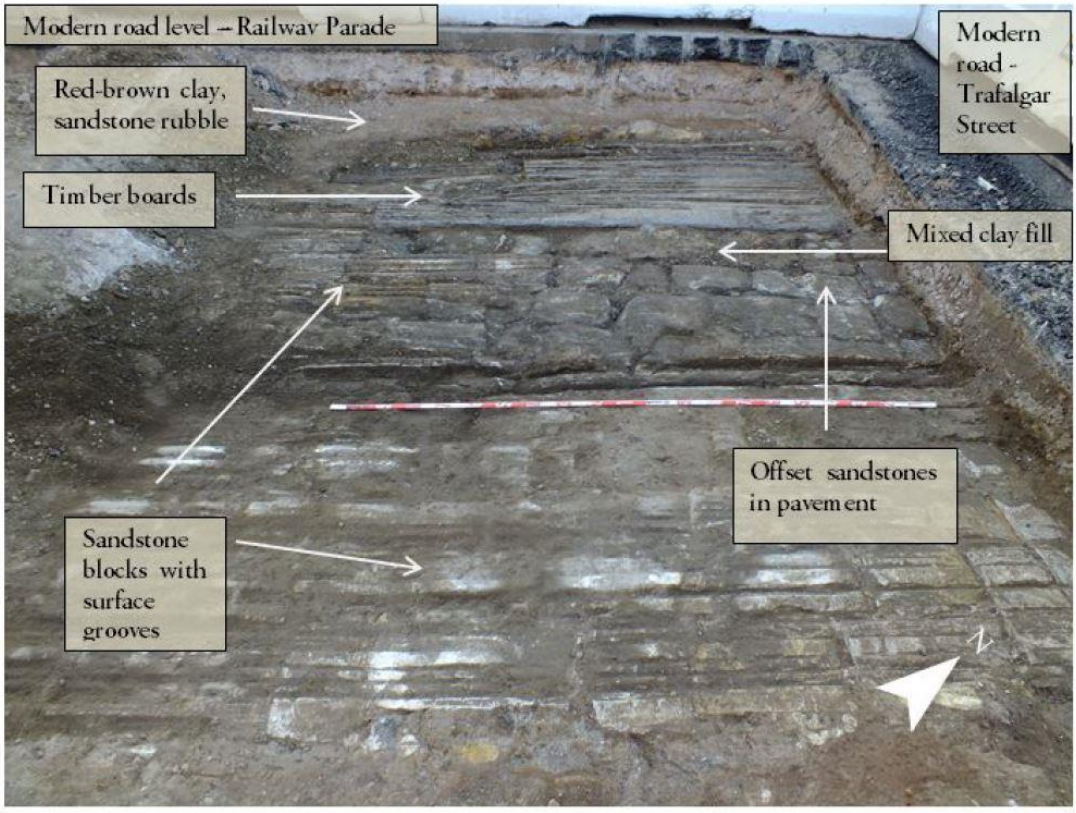

Figure 3.4 AMBS 2012 annotated image of remains of the sawmill (Source: AMBS: Figure 3.13: 33: 2012).

4 Assessment of Archaeological Potential

The archaeological resources of any site are finite but have the potential to provide insights into everyday life that are not available from any other resource. Archaeological resources may provide evidence that will enhance the historical record and, as such, make a contribution to an understanding of the history and settlement of a local region. In view of the substantial costs involved in archaeological excavation of a site, a clear justification for any archaeological excavation needs to include the following considerations:

- What is the likely integrity of the archaeological resource? Is it likely that largely intact physical evidence would be exposed during excavations such as structural features, industrial equipment, artefacts from underfloor deposits, rubbish- or cess-pits or other features with an ability to contribute meaningfully to an understanding of the development of the sawmill industry at St Marys?
- What is the research potential of the archaeological resource? Is it likely that the results of the excavation make a significant or important contribution to an understanding of wider research issues regarding the early industrial industries, specifically sawmilling of the St Marys area?

Areas of archaeological potential have been mapped in Figure 4.3 and are discussed in the following section. Archaeological potential has been assessed as a combination of known structures or activities and likelihood of survival. Potential remains are considered within the following context. There is one area of potential within the study area:

- Nil
- Nil to Low
- Low
- Low - Moderate
- Moderate
- Moderate to High

The additional historical research undertaken by AMBS demonstrates that there are potential archaeological resources within the bulk excavation area for St Marys station box works. As identified above St Marys Sawmill Precinct included several industrial enterprises which utilised the railway station for quick transportation of goods. Although the archaeological resources associated with the sawmill are likely to be discrete in nature, with evidence of the northern sawmill being a temporary structure constructed of timber and iron sheet there is no documented evidence of these structures (apart from the one image - Figure 2.1). Any archaeological resources that may survive of the sawmill would be rare in a local context and provide information that currently does not exist.

The area between Station Street and the rail line has not undergone substantial development. Two small structures are present to the east of the Goods Shed in the 1943 aerial, these may be the remains of former sawmill structures, these have been removed by the 1965 aerial; however, the area remains undeveloped well into the 1990s (Figure 2.3, Figure 4.1 and Figure 4.2). As demonstrated by the evidence from archaeological investigations at the Fairfield Interchange, remains associated with the goods shed and goods line may be present despite the construction of the Bus Interchange in the 1990s. The construction of the Bus Interchange in the mid-1990s is likely to have capped any archaeological remains as deep excavation was unlikely to have been required. Therefore, there is potential for archaeological remains of the southern sawmill to be located under the former Bus Interchange within the SBT Worksite.

Figure 4.1 1965 aerial of St Marys Station. Note the two structures identified in the 1943 aerial, east of the Goods Shed have been removed.

Figure 4.2 1991 aerial of St Marys Station. Note the area to the east of the Goods Shed is still undeveloped.

Many items listed on the SHI were substantial sawmill operations and include either structural evidence (extant structures) or original machinery and relics. As sawmills at St Marys have no visible evidence and little documentary evidence, any archaeology uncovered would provide rare insight into sawmilling at St Marys. As demonstrated during the archaeological excavations at Glenfield where the remains of the former sawmill were present, there is archaeological potential for these remains to be intact and are likely limited to discrete features. If found, it would meet the requirements of local significance as no other sawmilling sites are located in the area and would provide insight into sawmilling practices around St Marys not found in other resources. Therefore, the archaeological potential for remains to be present are considered to be low – moderate (Figure 4.3).

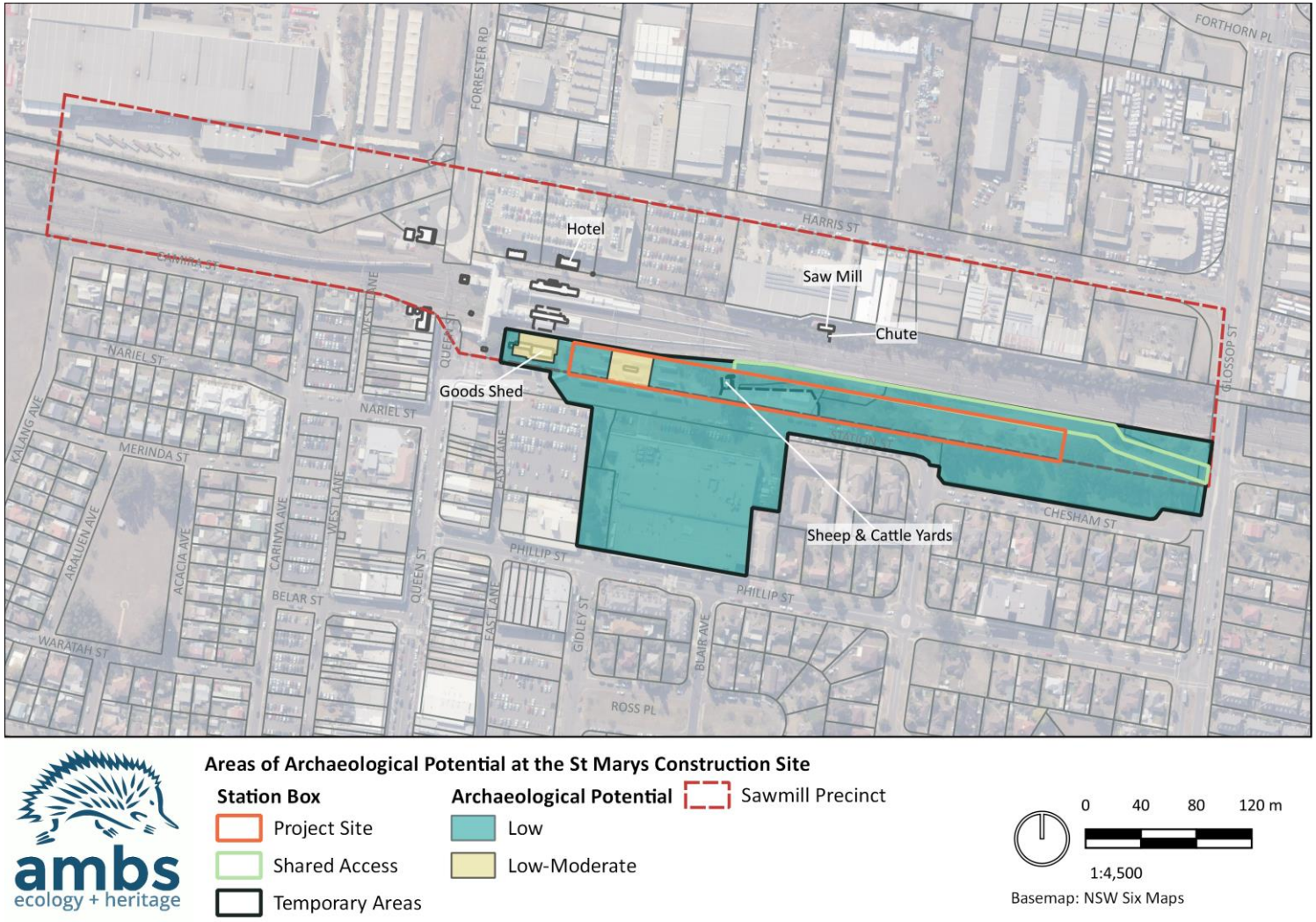

Figure 4.3 CPBG construction areas annotated with former structures. Note the orange area is the site of the station box excavations.

5 Archaeological Significance

The physical evidence of past activities is a valuable resource that is embodied in the fabric, setting, history and broader environment of item, place or archaeological site. The above evaluation of the study area has identified the potential for archaeological resources to be present. The value of this resource to the community can be evaluated by assessing its cultural heritage values. 'Cultural heritage significance' and 'heritage value' are terms used to express the tangible and intangible values of an item, place or archaeological site, and the response that it evokes in the community. Identification of this value, the significance of the archaeological resources is assessed against the SHR criteria.

An item will be considered to be of State or local heritage significance if, in the opinion of the Heritage Council, it meets one or more of the following criteria. Historical archaeological relics assessed as having State or local significance should be managed under the 'relics' provisions of the *NSW Heritage Act* 1977.

5.1 Artefact Heritage - Statement of Significance 2021 (St Marys Construction Site)

The archaeological significance assessment in the ARD was undertaken for the St Marys Construction site, however it does not provide a succinct statement of significance but rather details different significance for the phases of archaeological remains likely to be present. The following is a summary of the assessment.

Phase 2 (1863 - 1888): St Marys Railway Station

First St Marys Station: Due to the high degree of disturbance within the rail corridor, remains associated with the first St Marys Station may reach the threshold for local significance if isolated and intact deposits are identified.

St Marys Goods Yard: Substantial intact remains related to the former footings of the Goods Yard structures, and isolated artefact deposits, may reach the threshold for local significance.

Former 1888 Platform structures: Archaeological remains relating to the former platform 1/2 building may reach the threshold for local significance.

Phase 3 (1888 – 1942): Subdivision, Industrial and Residential Development

Archaeological remains associated with this phase would not reach the threshold for local significance.

Phase 4 (1942 – present): Modern Development

Archaeological remains related to post-Second World War development would be considered to be materially ubiquitous and unlikely to respond to historic or archaeological research questions. Buried remains from this period would not reach the threshold for local significance.

5.2 SHI - Statement of Significance 2000 (Sawmill Precinct, St Marys)

The SHI listing for the Sawmill Precinct (which is within the St Marys Construction Site) provides a very short statement of significance:

Local significance as a centre of early rural-based industry.

The physical description outlined in the SHI listing provides a little more information:

Area the previous site of: Tanning and Wheelwright industries, source of timber for the construction of the Western Railway, Sawmills, large saleyards and the old mud-brick "Railway Hotel". No visible evidence remains. The surrounding area is of historical significance to St. Marys because of its association with the early saw mills and saleyards.

5.3 AMBS Updated Archaeological Significance Assessment

Further research undertaken by AMBS has demonstrated additional archaeological resources to those identified in the ARD within the St Marys Construction area. These archaeological remains are associated with the sawmill industry, with the earliest reference of sawmilling in St Marys dating to 1882. This research and the results of archaeological investigations undertaken by AMAC require an updated significance assessment of the St Marys Sawmill Precinct.

NSW Criterion (a) an item is important in the course, or pattern, of NSW's cultural or natural history (or the local area);

Potential archaeological resources associated with the Sawmill Precinct do not meet this criterion.

NSW Criterion (b) an item has strong or special association with the life or works of a person, or group of persons, of importance in NSW's cultural or natural history (or the local area);

Potential archaeological resources associated with the Sawmill Precinct do not meet this criterion.

NSW Criterion (c) an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW (or the local area);

Potential archaeological resources associated with the Sawmill Precinct do not meet this criterion.

NSW Criterion (d) an item has strong or special association with a particular community or cultural group in NSW for social, cultural or spiritual reasons (or the local area);

While no consultation has been undertaken with the local community in relation to the values of the archaeology, it is acknowledged that local communities are interested in the archaeology of their local area and its development. It is possible that if substantial and intact archaeology is found it may have value to the local community or specific community groups

The threshold for significance against this criterion has not been met at this time

NSW Criterion (e) an item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history (or the local area);

Timber industries such as sawmilling are a significant phase in the development and growth of the town of St Marys and the Railway Station. Should potential archaeological remains be present with good integrity they have the potential to contribute further to the technical understanding of these industries within a local context. Information from other documentary sources regarding the Sawmill Precinct is sparse and incomplete with inconsistent dates, number of sawmills and physical information missing; however, archaeological investigations have the potential to contribute valuable information regarding the development of a local industry.

If remains associated with the sawmills at St Marys are revealed with good integrity these are likely to meet the threshold for local significance.

NSW Criterion (f) an item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history (or the local area);

The potential archaeological resources associated with the sawmill present as rare in a local context. To date, there have been no excavations centred on former industrial premises in the Sawmill Precinct or St Marys town. Although there are a number of Sawmills currently listed on the SHI and LEPs information pertaining to the industry in St Marys is sparse. If archaeological resources with good integrity are revealed these have the potential to add to the historical record of the Sawmill Precinct at St Marys that is currently not available from other resources.

If remains associated with the sawmills at St Marys are revealed with good integrity these are likely to meet the threshold for local significance.

NSW Criterion (g) an item is important in demonstrating the principal characteristics of a class of NSW's cultural or natural places or cultural or natural environments (or the local area).

Potential archaeological resources associated with the Sawmill Precinct do not meet this criterion.

5.4 Updated Statement of Archaeological Significance

The potential archaeological resources within the St Marys Sawmill Precinct are likely to include remains of the sawmill located to the east of the Goods Shed. There has been minimal development of this specific area of the precinct and aerial imagery indicates structures were standing until at least 1943. The removal of the former sawmill structures would likely have only entailed removal of material and fabric rather than excavations as the building was likely made of wood and iron sheets. Archaeological remains of the former standing structures are likely to be discrete in nature. Physical evidence of the sawmill would enable further understanding of its relationship to the railway. Documentary evidence of the Sawmill Precinct is sparse and inconsistent. Should these remains be revealed with good integrity they are likely to be of local significance and could provide information pertaining to the local early industrial activities within St Marys, their association, and proximity to the Railway Station and the configuration of the Sawmill Precinct as a whole.

6 Archaeological Method Statement

Archaeological remains can enhance the historical record and as such make a contribution to an understanding of the history and settlement of a local area. The archaeological resource within the study area, if present with good integrity, has low to moderate research potential and local significance. In view of the substantial costs involved in the archaeological excavation of a site, the research design should be problem-oriented; however, allowance should always be made for new questions to respond to unexpected archaeological evidence. Archaeological research questions provide a framework for an archaeological investigation and for the analysis of the results of the excavation and artefacts recovered during excavations.

6.1 Research Questions

To ensure that the research potential and significance of an archaeological resource is realised, archaeological investigations should aim to address substantive research themes. The ARD contains general research questions and specific research questions framed around the station and Goods Yard. The following general research questions are pertinent to this AMS and archaeological investigation:

- What is the integrity of the remains? Have they been truncated or dispersed by later demolition and construction work within the St Marys construction site?
- Are significant artefactual remains present within the St Marys construction site? Or is the archaeological resource restricted to former rail infrastructure and structural remains?
- What physical evidence of former activities can be identified within the site?
- What contexts, phases, and activity areas are evident in revealed archaeological remains?
- What natural and cultural taphonomic processes have contributed to the formation of the archaeological site and its associated deposits / features?

Additional research questions have been formulated to form the basis of the archaeological investigations within the station box works at St Marys.

6.1.1 Industrial Archaeology

Questions relating to the industrial site usage within the overall space; St Marys Station relates to both the technological nature of the site and the evidence of workplace practices and issues of concentration of industrial activities in close proximity to the railway. The type of research questions which would be used to address the industrial archaeology theme are:

- Spatial use of the workspace, identification of activity area?
- Levels of technology evident in the various processes of the industrial activities undertaken within the sawmill?
- Evidence for the type of items produced by the sawmill?
- Evidence for the working conditions of the staff?
- Were these exclusively male workplaces, if so, do they assist in understanding the construction of male gender roles and relationships?
- How the landscape or landform was transformed to allow for the industrial activities?

6.2 Archaeological Management

The day-to-day management of the archaeological excavations will be undertaken by Primary Excavation Director (ED), Lian Ramage and Secondary Excavation Director (ED) James Cole. Key members of the team will be Guy Hazell, surveyor, who will set out the site grid and survey all site features to contribute to the overall plan of the site in its entirety and in accordance with each identified phase of the site

The archaeological investigations program will comprise:

- Archaeological monitoring of the slab and overburden removal to determine the extent, integrity, and potential significance of the underlying archaeology (Section 6.4)
- If archaeological remains are present with good integrity open area stratigraphic excavation would proceed to salvage all archaeological remains within areas of impact (Section 6.5).

The significance and material nature of the archaeological resource associated with the sawmill means that these buildings will be excavated using both mechanical and manual techniques. The following methodology addresses all potential instances where archaeological investigations will be required within this site.

6.3 Heritage Induction

AMBS will prepare a document that addresses the SBT Works scope, identifying the sensitivities of the site and the relevant heritage requirements for the management of the SBT Works which will be presented to all on-site personnel involved in works under this AMS. The induction will be approved by the Primary ED and presented by the Secondary ED. The induction/toolbox will include an illustrated easy to understand hard copy outlining the main points and procedure, which will include:

- Understanding the heritage significance of the anticipated archaeological resource, including repercussions of any breaches to the approved archaeological strategy
- The nature of the archaeological resource
- Maps showing location of anticipated archaeological features
- Photographs of the types of anticipated archaeological features
- Understanding the unexpected finds workflow procedure

Additional pre-start meetings will be given each day, as required, to provide an overview and management of the anticipated archaeological resource for that day and in the event of unanticipated relics or features being exposed.

6.4 Archaeological Monitoring

Archaeological monitoring will be undertaken in the area identified as low-moderate to establish the depth of archaeology and to confirm its integrity. As the area of potential archaeology is relatively small (10m x 10m) testing will not be undertaken. If intact archaeological remains are revealed, then monitoring will cease and archaeological stratigraphic excavation would proceed to salvage all archaeological remains within areas of impact. The archaeological monitoring will be directed by Lian Ramage, Primary ED for the project.

If no evidence of significant archaeology is encountered in the area of low-moderate potential, the works may proceed under the unexpected finds workflow procedure. If isolated areas of significant archaeology are encountered, they will be excavated and recorded archaeologically and salvaged from the areas of impact.

If there are no underlying archaeological relics, features or deposits in the areas under investigation, the Primary ED will attend the site to verify and a ***Clearance Certificate*** will be prepared by the Primary Excavation Director to inform the project team and Proponent in writing (see Appendix B for template).

The remainder of the SBT Works will be managed under the Sydney Metro Unexpected Heritage Finds Procedure (SM-18-001105232) and CPBG's Unexpected Finds Workflow Procedure.

Where a significant archaeological resource with good integrity is exposed, open area excavation will proceed following removal of the overburden and once the area has been made safe to salvage the archaeological remains.

6.5 Stratigraphic Excavation

As the area of archaeological potential is limited to a 10m x 10m area should open area stratigraphic excavation be required they will be limited to the 10m x 10m area (Figure 4.3). Excavations will be directed by the Primary ED, Lian Ramage and assisted by Secondary ED James Cole. The team may comprise up to 4 archaeologists if large areas of the site are required to be salvaged, though this may increase or reduce in accordance with the site archaeology.

Excavation will be in accordance with the following methodology to ensure that all significant archaeological relics, features and deposits are appropriately managed and recorded:

- Establish a site datum and lay out a grid, relevant to the size of the site, 10m, 20m or 50m, across the site in order to record the levels of extant deposits, features and relics;
- Significant features will be recorded in detail and excavated manually under the supervision of the excavation director
- All significant archaeological deposits, features and relics that are exposed during the excavations will be recorded in accordance with heritage best practice standards. - Cleaning features to facilitate photographic recording;
- Scale plans;
- Elevations of features, if relevant;
- Digital photographs (in JPEG and RAW format); and
- Photogrammetry
- Site survey; and
- Detailed description of the feature, deposit or relic to ensure that a clear and comprehensive record of the archaeological resource of the site is preserved for the future.

Recording will include:

- Sequential numbering of features and deposits to facilitate preparation of a Harris Matrix and artefact labelling;

- Preparation and development of a Harris matrix, to show stratigraphic relationships between all recorded archaeological features and deposits;
- All information regarding the location, dimensions and characteristics of all recorded archaeological features and deposits will be recorded on pro-forma context sheets;
- Collection of all significant artefacts for analysis in accordance with context, except from non-significant unstratified fill. Samples of bricks and mortar will be collected from each structure, as relevant;

A ***Clearance Certificate*** will be issued by the Excavation Director after investigations are completed (see Appendix B).

6.6 Post – Excavation Management

6.6.1 7.9.1 Artefact Management

Artefacts will be cleaned, bagged, and labelled in accordance with archaeological context, and appropriately stored for analysis so that any information that can contribute to the understanding of the site and its historical development is not lost. Artefact processing and analysis will be in accordance with the system developed by AMBS. The database for the site will be included in the Excavation Report for that site.

Processing, analysis and storage of the artefacts for the duration of the project will be conducted at AMBS premises. However, a repository for the long-term storage of the artefacts from the SBT Works will be required to be provided by Sydney Metro.

6.6.2 Final Excavation Report

At completion of the archaeological investigation program a report will be prepared detailing the results of the fieldwork and post-excavation analysis. The report will be prepared in accordance with current heritage best practice and the requirements of a standard excavation permit and will include:

- An executive summary of the archaeological program;
- Due credit to the client paying for the excavation, on the title page;
- An accurate site location and site plan (with scale and north arrow);
- Historical research, references and bibliography;
- Detailed information on the excavation, including the aim, the context for the excavation, procedures, treatment of artefacts (cleaning, conserving, sorting, cataloguing, labelling, scale photographs and/or drawings, location of repository) and analysis of the information retrieved;
- Nominated repository for the items;
- Detailed response to research questions (at minimum those stated in the approved Research Design);
- Conclusions from the archaeological program. The information must include a reassessment of the site's heritage significance, statement(s) on how archaeological investigations at this site have contributed to the community's understanding of the site and other comparable archaeological sites in the local area and recommendations for the future management of the site;
- Details of how information about this excavation has been publicly disseminated (for example provide details about Public Open Days and include copies of press releases, public brochures and information signs produced to explain the archaeological significance of the site).

6.7 Community involvement and Interpretation

The following steps are designed to improve and maintain community relations and increase cultural awareness:

- Design any hoarding that will surround the site to include 'look-in' points. These should be situated at safe junctures along the exterior of the site
- Explore the possibility of having an open day on the site, whereby supervised public access is permissible. Whether or not an open day is practical or appropriate can be determined during the excavation. Flyers containing information about the site's history could be distributed in conjunction with the open day.
- Posters with information about the history of the site should be fixed to external hoardings. 1-2 page printouts of the poster could be provided to the public.

Any community involvement activities would be subject to Sydney Metro's approval.

Artefacts recovered during excavations that have the potential to enhance an understanding of the history of the site should be incorporated into the proposed interpretation of the site (If this is relevant). CPBG has confirmed that Sydney Metro hold responsibility for implementing requirements related to heritage interpretation.

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7 Appendix A - Summary of Heritage listings of sawmills and dwellings with direct association to sawmills

Table 7.1 Summary of Heritage listings of sawmills and dwellings with direct association to sawmills.

Item	Listing	Details
5053936: Wooleybah Sawmill and Settlement (Other: Wooleybah; Dead Man's Waterhole)	Kenebri, Warrumbungle LGA SHR 01846 (listed 2010) Warrumbungle LEP 2013: I27 2005 Heritage Study Item Cat: Forestry camp/settlement/housing	**Statement:** state, rare surviving and intact example of bush sawmill and settlement (from 1930s) in Pilliga scrub (largest Cypress Pine Forest in NSW). Major source of employment of local Aboriginal community 1930s-1990s, social environment of harmonious relationship between Aboriginal and non-Aboriginal families. Contains physical evidence of all aspects: accommodation, school, office, bore, road, sawmill, associated structures. Demonstrates technological practices and social organisations, evidence of relocatable timber industry practice of moving milling operations close to source. **Description:** 10 small houses around N and NE periphery of clearing, none occupied (family houses to mill workers), traditional design, additional 2 houses removed, larger house predates settlement (Forester's House, currently occupied by former worker), another 2 houses have been continuously occupied and expanded by occupants (Underwood's, mill owners and holders of occupancy permit). Former Wooleybah Public School located near main road, consists of 2 buildings, between the school and Forester's house is the side of an original school (no visible evidence). Sawmill located close to Underwood's houses, original machinery (conveyor belt, steam engine and various pieces) housed under corrugated steel open shed **Condition:** most buildings in original state (1930s-1940s) but severely dilapidated, mill building (1963) may have re-used and salvaged timber **History:** Timber industry first established in Pilliga forest in the late 1870s. 1935, 5ha Occupation Permit issued to Underwood family at Wooleybah, bought with them machinery from their sawmill near Narrabri. Work force comprised roughly half Aboriginal workers and half non-Aboriginal workers, majority of workers and families lived at the mill in small houses, the remaining workers lived in bush camps while cutting timber. A school building was established in 1937 for the children of workers, by the end of the same year the number of children had almost doubled to 20 and in 1941 a school building from Talama relocated to Wooleybah. 1953-54, new Robey steam engine installed. 1960, mill burnt and rebuilt, diesel replaced steam. 1962, mill burnt and rebuilt, electricity replaced diesel **Reports:** Curby, P & Humphreys, A (2002) Non-Indigenous Cultural Heritage: Brigalow Belt South Bioregion (Stage 2) Heritage Branch (2010) Oral History Interviews

Item	Listing	Details
4681019: Lumberyard and associated buildings (Group: Central precinct)	Parramatta, City of Parramatta LGA SHR Archaeological zoning plan: 19	**Statement:** State significance, part of the industrial centre, produced timbers for many early buildings, may be archaeological features and associated artefacts, high archaeological and historical significance **Description:** located under the Rose Garden, NE corners had been destroyed but rest should be intact, likely to contain remains of convict lumberyard **History:** established 1790, long sheds covering 9 saw pits, closed 1819, new yard set up 1821 on north side of Macquarie Street. Yard bisected by Great Western Railway **Reports:** Varman, RVJ (1997) Archaeological Zoning Plan for Parramatta Park Trust
2170217: Convict Lumber Yard – Stockade Site (Other: Convict Stockade) (Other listing: 5044978)	Newcastle, Newcastle LGA Newcastle LEP 2012: A7 SHR 00570 Register of the National Estate: 16502 Heritage Study Item Cat: Courthouse; Yarding/ Loading Facility	**Statement:** State significance, rare evidence of convict industrial workplace, evidence of Aboriginal occupation **Description:** site of original stockade, shown on Wells 1839 maps as lumber yard, not used as convict workplace after 1850, buildings derelict by 1877, evidence of an Aboriginal open campsite, physical evidence of convict and railway occupation. **History:** 1801, first convict settlement, lumber yard operations begin. 1831, lumber yard closed. Various buildings constructed and different usages between 1858-1947. Archaeological investigations in 1987, 1989 and 1992 **Reports:** Fenwick, P et al (2004) Interim Report – Disturbance of Convict Lumberyard Site, Newcastle Edward Higginbotham & Associates (1998) Reports on the Archaeological Test Excavation of the Convict Lumber Yard & Stockade, Newcastle, NSW Edward Higginbotham & Associates (1997) Historical & Archaeological Assessment of the Convict Lumber Yard & Stockade, Newcastle, NSW O'Brien, C. – Natural & Cultural Heritage P/L (1994) Convict Lumber Yard Site – Interpretation Report Godden Mackay (1994) Newcastle East Convict Lumberyard Site – Archaeological Advice for Design Development 1990 Newcastle Heritage Study
2690336: Oakdale Timber Mills Relics	Oakdale, Wollondilly LGA LEP 1991, LEP 2011, Heritage Study 1992 Item Cat: Sawmill	**Statement:** local significance, one of the only known remaining timber mill structures in Wollondilly **Description:** (1991) timber post structure with corrugated pitched iron roof, dilapidated state, floor is overgrown and ruinous. 1 of 3 locally known mills at Oakdale **Reports:** JRC Planning Services (1992; 1993) Wollondilly Heritage Study **Recommendations:** 2007, not to retain on heritage list

Item	Listing	Details
1110062: O'Brien's Timber Mill	Valery, Bellingen LGA Bellingen LEP 2010: A84 Item Cat: Sawmill	**Statement:** local significance, rare example of privately owned diesel timber mill, associated with continued timber milling in the area, high degree of integrity **Description:** timber frame, wrought iron roof with sections of weatherboard walling, includes skids, tracks, trolleys, sheds, rails, Canadian braking down saw, Canadian main bench saw, rollers, docking saw, diesel engine, belt pulleys **History:** constructed c.1930
2390259: Red Head Timber Mill and Wharf Archaeological Site	Bendalong, Shoalhaven LGA Shoalhaven LEP 2014: A1 Heritage Study Item Cat: Mine Site	**Statement:** local significance, potential to yield information about the timber and silica mining industries in the Red Head area **Description:** remains consist of the former wharf, concrete abutments, and terracing **History:** 1878 first timber mill est. by Goodlet & Smith at Red Head (near One Tree Harbour), moved to Kioloa in 1885, rebuilt and changed ownership multiple times, eventually closed mid 1920s **Reports:** Peter Freeman Pty Ltd (1998), Shoalhaven City Council Heritage Study 1995-1998
1550180: Remains of McMillans Mill (Other: McMillans Mill)	Narooma, Eurobodalla LGA Eurobodalla LEP 2012: A15 1997 Heritage Study (NARO/R011) Item Cat: Sawmill	**Statement:** local significance, regional historical significance in development and expansion of Wogonga Inlet, scientific regional significance in understanding scale and processes **Description:** iron boiler, wheel and crankshaft, recommended removal as Movable Items **History:** 1905/6: mill est., operated by Clyde Sawmilling and Shipping Company (shipped timber to Sydney, South Africa, USA), closed c.1923, 4 piers from the jetty remain, only remaining Clyde Company mill in South Coast with remains
1110105: Ruined timber mill	Dorrigo, Bellingen LGA Bellingen LEP 2010: A27 Item Cat: Sawmill	**Statement:** local significance, important in the economic development of area, situated in middle of town **Description:** remnants of rail track on concrete bases, skids, saw dust pits, 2010 site inspection – artefacts difficult to locate (overgrown state) **Recommendations:** Archaeological assessment recommended
1240291: Saw Mill and Extension	Broken Hill, Broken Hill LGA Broken Hill LEP 2013: I256 Item Cat: Other – Mining & Mineral Processing	Local significance
1110106: Site of former Thora Timber Mill	Thora, Bellingen LGA Bellingen LEP 2010: A65 Item Cat: Saw Mill	**Statement:** local significance, historical significance as site of early timber mill, workers' cottages – v. good example of vernacular style dwellings **Description:** original mill demolished, 4 workers houses for mill remain, unpainted weatherboard with iron roofs, possible 1940s/50s construction, minor alterations and additions **History:** Original mill demolished after construction of new mill 2km SW, new mill is a modern operation

Item	Listing	Details
1010640: Site of Nott's Timber Mill and Joinery (Group: Forestry and Timber Industry)	Armidale, Armidale Regional LGA Armidale Dumaresq LEP 2012 Heritage Study Item Cat: Sawmill	**Statement:** local significance, local industrial endeavour during first half of 20th century, owner was an important figure **Description:** large timber shed with corrugated iron roof, brick chimney, 3 weatherboard sheds, 1900 – additional office and workshop, 1913 – additional accommodation **Condition:** above surface remains removed, half of block redeveloped as shops with carpark, rear half fenced off, undeveloped **History:** 1898, George Frederick Nott erected sawmill, brick chimney built 1906
1110103: Smith and Moran Timber Mill	Repton, Bellingen LGA Bellingen LEP 2021: A62 Item Cat: Sawmill	**Statement:** site associated with Smith (important local figure), ruined site, reveal information about growth and development of timber mills and river transport **Description:** large timber posts, some machinery on rivers edge, in water and eroding from bank **Recommendations:** Archaeological assessment
1730155: Timber Mill (Other: K.C. Cooper and Son, Timbermill, Telegraph Point)	Cooperabung, Port Macquarie-Hastings LGA Port Macquarie-Hastings LEP 2 2022: I155 Heritage Study (HS0155) Item Cat: Sawmill	**Statement:** local significance, well preserved and working example of timber mill, electric power only major difference to 19th century forbears, only one comparable mill in the Hastings **Description:** open timber shed with corrugated iron, attached shed, skids, trolley, Canadian saw, saw bench, roller, docking **Condition:** intact structure **History:** 1952, established by Jack Johannson **Reports:** Suters Architect Snell (1991), Hastings Heritage Study **Recommendations:** maintenance
1360216: Timber mill (former) and associated steam engines and machinery	Ulong, Coffs Harbour LGA Coffs Harbour LEP 2013: I87 Item Cat: Sawmill	**Statement:** local significance, rare group of intact and in situ timber mill buildings and machinery (early 20th century), possibly state significant, some steam-powered machinery assessed as rare, possibly unique **Condition:** in need of repair **History:** c.1900, established by Timms family **Reports:** Bickford, A & Brayshaw, H, CRA Project NA29/EH Thematic Forest History Jamison Architects (1987), Coffs Harbour Shire Heritage Study Hedditch, H (2013) Coffs Harbour Heritage Study **Recommendations:** nominating for SHR listing, prepare maintenance schedule/guidelines, carry out interpretation, promotion and/or education use

Item	Listing	Details
2540039: McDonald's Saw, Plane Mill and House	Bundarra, Uralla LGA Uralla LEP 2012: I08 Item Cat: Mill settlement	**Statement:** local significance **Description:** all buildings timber framed, clad in weatherboard or corrugated iron, machinery electrically powered in-situ (vertical pit saw, bench profile planer, toror generator, circular saws, planers, safes, joinery machines, drills) **Condition:** mill, residence and outbuildings in various states of disrepair **History:** house with gambrel roof dates 1910-1915, may be the mill started by George Lonsdale, 1886 **Reports:** Myers, P & Rubbo, A (1987), Uralla Heritage Study
1640956: Kirchner's Saw Mill and Candle Factory Site	Grafton, Clarence Valley LGA Clarence Valley LEP 2011 Heritage Study Item Cat: Factory/Plant	**Statement:** local significance, exact location of archaeological site undetermined
1530109: Gould Brothers Timber Mill (Previous ID 14397)	Singleton, Singleton LGA Singleton LEP 2013: I114 Item Cat: Sawmill	**Statement:** regional significance, represents development town and industries, vernacular type **Description:** timber vernacular, series of sheds with skillion elements, unpainted hardwood shiplap boards and corrugated iron roofs, later steel-clad buildings on site, situated adjacent to rail line
1110055: Ellis Timber Mill	Urunga, Bellingen LGA Bellingen LEP 2010: A68 Item Cat: Sawmill	**Statement:** local significance, rare site represents relationship between timber milling and river transport, associated with important local people **Description:** remnants of timber structure, tramway, ruined drogher, 3 boilers and metal sections of paddle wheel **History:** closed 1920s
1110079: Briggsvale Timber Mill Group – Bellis and Morcam Steam Engine	Cascade, Bellingen LGA Bellingen LEP 2010: A14 Item Cat: Agriculture	**Statement:** local significance, only remaining steam engine in area **Description:** Bellis & Morcam Ltd., patent engine, connected to Siemens generator, both working
217008: Armstrong & Royce Ltd Timber Mill (Other: Nova Hydrualics) (Group: 3-Ports SEPP)	Carrington, Newcastle LGA LEP, Heritage Study Item Cat: Mill Settlement	Local significance **Description:** 2 galvanised buildings – timber mill **Reports:** 1990 Newcastle Heritage Study

Item	Listing	Details
2720079: "Ebenezer's Cottage" (former) – dwelling and sawmill	Wyong, Central Coast LGA Wyong LEP 2013: I144 Heritage Study Item Cat: House	**Statement:** local significance, association with Bradley family and adjoining sawmill **Description:** weatherboard house with corrugated iron roof, retains original joining, significant early planting, later rear addition **Condition:** dilapidated **History:** built from timber pit-sawn on site, sawmill established on site 1890-1892, steam-powered with water brought down ¾ mile pipe from gully. Sawmill moved through several sites. 1942, second mill on site upgraded from steam to diesel, operated until 2004 **Reports:** Wyong LEP (1991), Inventory of Heritage Items Rod Howard Heritage Conservation Pty Ltd (1994) Wyong Shire Heritage Study David Scobie Architects (1999; 2009) Wyong Shire Heritage Study Review TBD (2009; 2016; 2018) SoHI EJE Heritage (2014) SoHI **Recommendations:** building and setting have potential for conservation
2390453: Bawley Point Sawmill and Wharf (former)	Bawley Point, Shoalhaven LGA Shoalhaven LEP 2014: 17 Heritage Study Item Cat: Sawmill	**Statement:** local significance, considerable archaeological potential in sawmill and tramway sites, remaining earthworks are the only surviving relics of horse-drawn tramway serving timber industry **Description:** only one cutting to mark tramline route from Bawley Point to Termiel, considerable evidence remains of sawmill and wharf **History:** 1891, established by Francis Harrington Guy, 1891 survey shows 'sawmill in course of erection', mill tramlines operating by 1893

Item	Listing	Details
2720024: Brownlee's Sawmill (Other: Ourimbah Sawmill)	Ourimbah, Central Coast LGA LEP 1999: 24 Heritage Study Item Cat: Sawmill	**Statement:** local significance, indicates establishment of secondary industry, relatively rare surviving example of small scale timber mill in Central and Corth Coast Region, one of the oldest and longest running **Description:** 5 buildings: main workshop, saw dust hopper, storage racks, former office, oil store **Condition:** as of 2009, significantly delapidated, access reduced, main building collapsing in places, roof needs replacing, internal beams in various stability **History:** 1905, site transferred to Archibald Prosper Victor Wamsley, described as timbergetter, may have erected the sawmill. 1913, Robert Brownlee leased site, sawmill well established. Site ownership changed and land subdivided multiple times, mill closed 1970s. 1991, site sold to Wyong Shire Council, leased to Des Kirk 1991-1996 **Reports:** Wyong LEP (1991), Inventory of Heritage Items Rod Howard Heritage Conservation Pty Ltd (1994) Wyong Shire Heritage Study David Scobie Architects (1999; 2009) Wyong Shire Heritage Study Review Walkerden, G (2002) Wyong Shire Council – Heritage Properties Audit **Recommendations:** Item removed from LEP 13 July 2011 – council intention to use site for sports field and roadworks
1550239: Guy's Sawmill	Benandarah, Eurobodalla LGA Eurobodalla LEP 2012: I17 Item Cat: Sawmill	Local significance **Description:** old boiler on site with assorted relics **History:** 1866, NSW Gazetteer 'At Buckenboro 4 miles SE [of Nelligen] is a water power sawmill (Guy's)'
2390447: Kioloa Sawmill and Wharf (former) (Other: Bawley Point Saw Mill)	Kioloa, Shoalhaven LGA Shoalhaven LEP 2014: 247 Heritage Study (KI011P) Item Cat: Sawmill	**Statement:** local significance, high potential archaeological significance, association as largest sawmill for its time (1883) in southern hemisphere **Description:** only visible evidence is concrete foundations of wharf, likely archaeology on land and in water **History:** 1884, Goodlet & Smith moved mill to Kioloa, 1893 operation of first mill ceased after boiler tube burst, Goodlet & Smith disposed of all buildings and shipped machinery to Sydney. 1912, milling resumed, described as largest in southern hemisphere, 1916 was destroyed by fire and rebuilt, 1926, closed after another fire, machinery moved to Coramba. Currently used as public reserve **Reports:** Peter Freeman Pty Ltd (1998), Shoalhaven City Council Heritage Study 1995-1998 **Recommendations:** Archaeological Assessment, archival recording, maintenance schedule or guidelines

Item	Listing	Details
1590108: Nelsons Saw Mill Building (Other: Gilgandra Sawmills, Brown's Transport)	Gilgandra, Gilgandra LGA Gilgandra LEP 2011: I55 Heritage Study Item Cat: Sawmill	**Statement:** local significance, sawmill (from 1894) only known sawmill building to survive in Gilgandra Shire **Description:** open-sided timber frame sawmill with clad ends (eastern: original cypress clapboard, western: vertical boards), corrugated galvanised irone roof, wooden electricity distribution and switch box, concrete machinery bases **Condition:** moderate integrity, moderate archaeological potential **History:** 1894, second mill established on Coonamble Rd, 1912 was taken over by Gilgandra Sawmills. RJ Nelson bought out partners in 1916. Mill has been owned by Brown's Transport for 25yrs, converted as storage area c.1980 **Reports:** Christison, R (2008) Gilgandra Shire Community Based Heritage Study
2390442: Pebbly Beach Sawmill Complex, including Sawmill remnants, Town and school site (Other: Pebbly Beach Sawmill Complex (former)) (Group: Sawmill, Town & School Sites)	Pebbly Beach, Shoalhaven LGA Shoalhaven LEP 2014: 439 Heritage Study (KI006) Item Cat: Mill settlement	**Statement:** local significance, illustrates development between settlement, timber industry and coastal shipping **Description:** evidence of former sawmilling operations: town site, well, remains of tramway, mooring rings and timber derrick **Condition:** complex overlaid by 20th century weekend cabins **History:** 1901-1925, village taken over for weekend and holiday cabins, some are on perpetual leases, other resumed by NPWS as part of Marramarang National Park **Reports:** Peter Freeman Pty Ltd (1998), Shoalhaven City Council Heritage Study 1995-1998 **Recommendations:** Archaeological Assessment, produce Archaeological Management Plan, interpretation and conservation of fabric
2000140: Pender & Forster Sawmill (Other: Industrial/Manufacturing Building) (Group: East Maitland Conservation Area)	Pitnacree, Maitland LGA LEP 1993, 1994 Heritage Study Item Cat: Sawmill	**Statement:** local significance, industrial development, remnants of original sawmill **Description:** simple brick and corrugated iron vernacular structure, original fabric includes brick smokestack, some post supports, part of norther gable and boarding, most structured renewed after fire **Reports:** Brian McDonald & Associates (1994), Maitland Heritage Survey Review
1710236: Sawmill (former) – Pearson and Son (Group: Former Pearson's House)	Guyra, Armidale Regional LGA Guyra LEP 2012 Item Cat: Sawmill	**Statement:** local significance, association with R. Pearson and Sons as a long-established sawmill **History:** Richard Pearson established Guyra steam sawmill and chaff factory by 1902, possibly earlier, ownership changed many times but remained as Richard Pearson and Sons

Item	Listing	Details
2260285: Sawmill Precinct (Group: St Marys Saw Mills Group)	St Marys, Penrith LGA LEP 1991: SM-6 Item Cat: Sawmill	**Statement:** local significance, centre of early rural-based industry **Description:** no visible evidence, surrounding areas of historical significance – association with early saw mills and saleyards
5062721: Sawmill* (Other: Carrick's Sawmill)	Coledale, Wollongong City LGA Wollongong LEP 2009: 6256 Item Cat: Sawmill	**Statement:** local significance, remains are rare, one of few extant sawmills in the Illawarra **Description:** structures include: round posts, flitch skids, sawn plank storage area, beams, former work area with iron sheeting roof; remaining equipment includes: saws, trolleys, winches, line shafts, pulleys, grinding wheels, DC electric generator, engines, caterpillar tractor, timber grinder, cast iron exhaust port, Weatherboard Tool Shed **Condition:** overgrown vegetation, rundown, lacks management, damages include: termite, damp, rot, fungus, few structures collapsed **History:** 1893, land passed to James Carrick, built orchard south of saw mill. Land passed to Victor Carrick in 1946, occupied mill (likely rebuilt, had built a mill in interwar period), operated until death in 1983 **Reports:** Mayne-Wilson & Associates and Meredith Walker Heritage Futures (2006) Illawarra Escarpment Heritage Assessment Popovic, Z (2013, 2019) Review of heritage items in Wollongong LGA
1240485: Shed (former Saw Mill)	Broken Hill, Broken Hill LGA Broken Hill LEP 2013: I337 Item Cat: Sawmill	Local significance
1240482: Saw Mill	Broken Hill, Broken Hill LGA Broken Hill LEP 2013: I278 Item Cat: Sawmill	Local significance
1110104: Ruined timber mill	Repton, Bellingen LGA Bellingen LEP 2010: A60 Item Cat: Sawmill	**Statement:** local significance, rare site, association with two important figures **Description:** large timber posts (some in-situ) **History:** constructed 1870, Smith & Allen was first timber mill in region, 1890s partnership ended, Allen continued to run the mill and Smith built another mill up river. Mr Caines demolished and built another mill **Recommendations:** Archaeological Assessment
1660298: Sawpits (Other: Sawpits, Wingham)	Wingham, Mid-Coast LGA Greater Taree LEP 2010: A258 Item Cat: Sawpit	Local significance **Recommendations:** further investigations required

Item	Listing	Details
2180704: Sawmiller's Reserve (Other: Part of Berrys Bay Precinct, Eatons Sawmill Remains)	McMahons Point, North Sydney LGA North Sydney LEP 2013: I0521 Item Cat: Reserve	**Statement:** local significance, Eatons Sawmill, sole remains on north shore of major waterfront timber yard, example of conversion of derelict industrial site to public recreation usage **Description:** engine beds, series of large and prominent concrete structures, formerly foundations for boiler and main engine for log bandsaw and other machinery, masonry sea wall along frontage to Berrys Bay, wooden wharf **History:** 1879, developed as timber works by Eaton family, expanded to one of Sydney's major timberyards. Slowly abandoned from end of WWII to 1982, acquired by Council and established as park **Reports:** Brassil, T, Irving, R, Pratten, C and Morrison, C (1993) North Sydney Heritage Study Review
1010618: Site of Trim's Chaff Factory and Sawmill (Group: Manufacturing and Processing)	Armidale, Armidale Regional LGA Armidale Dumaresq LEP 2012: A063 Heritage Study Item Cat: Factory/Plant	**Statement:** local significance, representative of local industry and 19th century development, association with Trim family (significant figures) **Description:** weatherboard shed, gable roof, skillion extension, large underground tank, weatherboard shed **Condition:** as of 2011, Rusden St frontage excavated for 6-villa development, removing subsurface features, rear of store and immediate area to west contains housing covering most of ground space **History:** John Joseph Trim expanded store for include chaff factory and sawmill, appears on 1933 plan, demolished some time after 1965
1550220: Wharf and Sawmill Truck Remains	Potato Point, Eurobodalla LGA Eurobodalla LEP 2012: I218 1997 Heritage Study (POTP/R001) Item Cat: Wharf	**Statement:** local, wharf and truck remains provide evidence of late 19th, early 20th century local activity **Description:** rough sawn timber posts set in locating holes in grooved flat rock shelf, evidence of hillside slipway, rusted truck axles and engine parts, little physical evidence of form of wharf **History:** wharf and sawmill built late 19th century, mill located at top of cliff, sawn timber winched down slipway. 1920s, mill burnt down. 1930s truck remains part of unsuccessful innovation, truck and boiler bulldozed over cliff when land developed for housing
2410250: Wollondibby Mill Site (Other: Gammon)	Moonbah, Snowy Monaro Regional LGA Snowy River LEP 2013: I167 Heritage Study Item Cat: Board Mill	**Statement:** local significance, impact Snowy Mountains Scheme had on small businesses, evidence of mid-20th century small timber before heavy equipment **Description:** remains of Mill House, includes collapsed chimney and floor with underfloor spaces, relics of Old Mill scattered including 4 cylinder engines, truck chassis, a tyre and unidentified objects, evidence of modifications to the stream **Condition:** very poor **History:** 1948, established by Bill Collins, operated until c.1962
1040002: Saw Miller's Cottage	Alstonville, Ballina LGA Ballina LEP 2012: I13 Heritage Study Item Cat: Mill settlement	Local significance

Item	Listing	Details
1550148: Timber Mill Getter's Hut (Former) (Other: Cook's Timber Mill Getter's Hut/Residence)	Mossy Point, Eurobodalla LGA Eurobodalla LEP 2012: I173 1997 Heritage Study (MOSS/R001) Item Cat: Forestry camp/settlement/housing	**Statement:** local significance, historical connection to early 20th century Cooks Timber Mill, represents geographical location of huts to mill site, has been altered **Description:** Inter-War Georgian, weatherboard with corrugated iron roof, timber windows, granite walling to rear extension, front entrance rebuilt, only first part of cottage original, winch and sheds at rear **History:** constructed 1930, timber winch from mill located on site
1360361: Lynch Cottage – interwar – former mill house (Other: Former BAT manager's residence at timber mill at Bark Hut – relocated)	Red Rock, Coffs Harbour LGA Coffs Harbour LEP 2013: I57 Item Cat: Cottage	**Statement:** local significance, early surviving intact timber mill cottage from interwar period, strong association with BAT timber milling at Bark Hut. Lynch Cottage relocated from Bark Hut to Red Rock in 1937 to preserve **History:** built 1920s-1930s as residence of the manager of the timber mill at Bark Hut, re-erected at Red Rock in 1937, used as holiday and weekend house between 1955-1996, restored after it was damaged in storm, sympathetically maintained by Trustees of the Red Rock Recreation Reserve and Resting Place, currently used as community hall and meeting room, houses Collection of Red Rock History (local history archive) **Reports:** Hedditch, R (2013) Coffs Harbour Heritage Study
1540095: Lister Timber Mill Village	Upper Allyn, Dungog LGA LEP 1990, Heritage Study Item Cat: Retirement Village	Local significance
1890165: Cougal Settlement (former) (Other: Timber Mill dwellings; location Tunnel Camp)	Cougal, Kyogle LGA Kyogle LEP 2012: I165 Heritage Study Item Cat: Railway Workers' Camp	**Statement:** local significance, associations with Cougal Saw Mill and Veneer factory and construction of Kyogle-South Brisbane railway. Remnants of dwellings demonstrates location Cougal (own rail platform), vernacular timber construction **Description:** degraded weatherboard dwellings associated with 1926-30s occupation, scattered in rural landscape, remnant historic planting **Condition:** degraded, believed serval burnt in fire **History:** 1927, factory operated until 1950s, population diminished (12 people recorded in 1980s)
1730161: Chimneys (Remains of Mill Workers' Cottages)	Kew, Port Macquarie-Hastings LGA Port Macquarie-Hastings LEP 2 2011: I161 Item Cat: Mill settlement	**Statement:** local significance, archaeological remains rare surviving elements of mill settlement **Description:** 2 brick chimneys only remains of 6 mill houses **Condition:** intact, very poor state **History:** property purchased beginning 20th century, called 'Homedale', 6 identical houses known as 'Struggletown', occupied by mill-workers, rented until 1950s **Recommendations:** maintenance

Table 7.2 Summary of excavations and assessments undertaken for sawmills.

Report	Findings (referencing sawmills)
Watson, Pamela (2012) *Stey's Sawmill Site, Newholme via Armidale NSW. Preliminary Report*	Archaeological Field School run by University of New England, preliminary report on four seasons (2006, 2007, 2009, 2010) 1862: John Joseph Stey selected 40 acres of land at Mount Duval, near Armidale (Watson, 2012: 9) By 1863, was operating a steam powered saw mile, after transferring property in 1877 sawmilling continued under a number of owners (Watson, 2012: 11) During the 2006 inspection, visible archaeological remains included: remains of timber posts and a stone feature; remains of timber piles and posts and a timber-lined pit associated with remains of machinery; granite footings of three walls of a rectangular structure and possible chimney base associated with old fruit trees (Watson, 2012: 16) 15 trenches excavated over four seasons in three areas, mainly located in Areas 1 and 3 (Watson, 2012: 20) Area 1 was determined to be a workshop, surface timbers indicate shed-like timber structure, most artefacts concentrated around a fireplace, dating to first half of 20th century. A water channel was only indication that area of site used in the 19th century (Watson, 2012: 21-26) Area 2 was the location of the sawmill, no constructed surface uncovered, some postholes and few artefacts were the only archaeological evidence uncovered in two trenches (Watson, 2012: 26-28) Area 3 was the location of cottage, most archaeologically productive area, included stone foundations and a fireplace, artefacts related to domestic use, large range of dates between late 19th and early-mid 20th century (including post 1930s AGM beer bottles) (Watson, 2012: 29-33) Discussion: Area 2 would be the early area of site according to documentary evidence, limited artefacts with nothing diagnostic from early occupation. Wet seasons limited excavation. Area 3 demonstrated mid-late 19th century occupation and mid-20th century occupation. Site has been sampled rather than fully excavated due to limited nature of field school (Watson, 2012: 34)

Report	Findings (referencing sawmills)
De Groot & Benson Pty Ltd and EDGe Environmental Design Group Pty Ltd (1999) *EWB Sawmill Conservation, Cascade. Heritage Management Plan*	Cascade located in Wild Cattle Creek State Forest, visible remains of mills are the Back Mill (1940); the Bottom Mill (1925); the brick kiln, the conveyor trestle, the treatment tank; the Cascade railway station; the Cascade Community Hall (1926); the Top Mill (1926) (de Groot & Benson Pty Ltd et al, 1999: 1-2) Heritage significance undertaken by Mr Ray Fife: Cascade complex is a rare and outstanding example of in situ archaeological remains of the original infrastructure of an integrated steam powered timber production, regional heritage significance (de Groot & Benson Pty Ltd et al, 1999: 4-5) The Back Mill: 1940-1946, steam boiler and engine on site, post, floor and roof remains, some preservable, floor and roof deteriorated (de Groot & Benson Pty Ltd et al, 1999: 8) Waste Conveyor Trestle: sufficient remains in good condition to warrant preservation (de Groot & Benson Pty Ltd et al, 1999: 8) Brick Kiln: relatively sound and stable condition (de Groot & Benson Pty Ltd et al, 1999: 9) The Bottom Mill: 1925-1981, rebuilt at least 3 times, burnt down of film "Winds of Jarrah", only substantial relic is steam boiler, supported by outer steel structure of the firebox (which is unstable) (de Groot & Benson Pty Ltd et al, 1999: 9) Treatment Tanks: 1946 for Bottom Mill to treat timber, deteriorated condition but no structural danger (de Groot & Benson Pty Ltd et al, 1999: 9) Cascade Village Hall: 1926 to establish school, rebuilt 1940s, good condition, can be restored (de Groot & Benson Pty Ltd et al, 1999: 10) The Top Mill: 1926-1961, rail siding built 1931, mill burnt down and rebuilt 1942. Remains not inspected, steam engine, boiler, plainer Canadian saw and some small building remain (de Groot & Benson Pty Ltd et al, 1999: 10) Cascade Railway Station: 1925-1972, not inspected (de Groot & Benson Pty Ltd et al, 1999: 10)
Godden Mackay (1992a) *Little Pier Street Precinct Archaeological Excavation. Volume 3 Trench Reports* Godden Mackay (1992b) *Little Pier Street Precinct Archaeological Excavation. Volume 4 Specialist Report*	Very little evidence of the sawmill shown on an 1888 plan of Sydney. A very woody dark brown deposit [B047] may have been sawmill waste, found in Trench E, Phase IV (1886 – c.1930s) (Mackay, 1992a: 56).
Thorp, Wendy (1987) *Archaeological Report: Rozelle Bay Redevelopment*	During the site survey (second site) significant above ground elements and relics related to the Sydney Saw-milling Company occupation (began 1930s), includes: remnants of timber frame and iron buildings, a hopper and stack, machinery and surface elements, and the electrical power system (Thorp, 1987: 34) Primarily of local significance, demonstrates the importance of the saw-milling industry in the area, surviving technology may be rare or more intact than other examples, only nine saw-milling sites are listed by the National Trust (Thorp, 1987: 4-5)

Report	Findings (referencing sawmills)
Cultural Resources Management (CRM) (2002) *Lismore Railway Station. Report on programme of archaeological monitoring. Nextgen Fibre Optic Cable Project*	Project area within a portion of Twickenham Estate (c.1855-1870s/80s) which had a house, sawmill and other buildings established. In 1952, part of the railway reserve leased for use as a timber yard (CRM, 2002: 1, 6) During monitoring works, no evidence of Twickenham Estate (CRM 2002: 2)
Godden Mackay Pty Ltd (1991) *Chullora Railway Workshops. A description of the building fabric and operations*	Within the Signal Branch Workshops area – Sawmill established 1933-35, timber milling area (including sawmill and carpenters shop) closed 1989 (Godden Mackay Pty Ltd, 1991: 86, 92, 160) The sawmill was located on land sold to News Limited and used as a storage area (Godden Mackay Pty Ltd, 1991: 160)
Varman, Robert (1998a) *Archaeological Zoning Plan: Phillipsburg/ Cockpit Historic Site. Part 1 Historical* Varman, Robert (1998b) *Archaeological Zoning Plan: Phillipsburg/ Cockpit Historic Site. Part 2 Inventory*	Item 34: Yaeman's Water-Powered Saw Mill, industry relating to the later Third Settlement, washed away during 1936 flood. Traces of mill footings and box made of shell-shingle concrete (Varman, 1998a: 35)

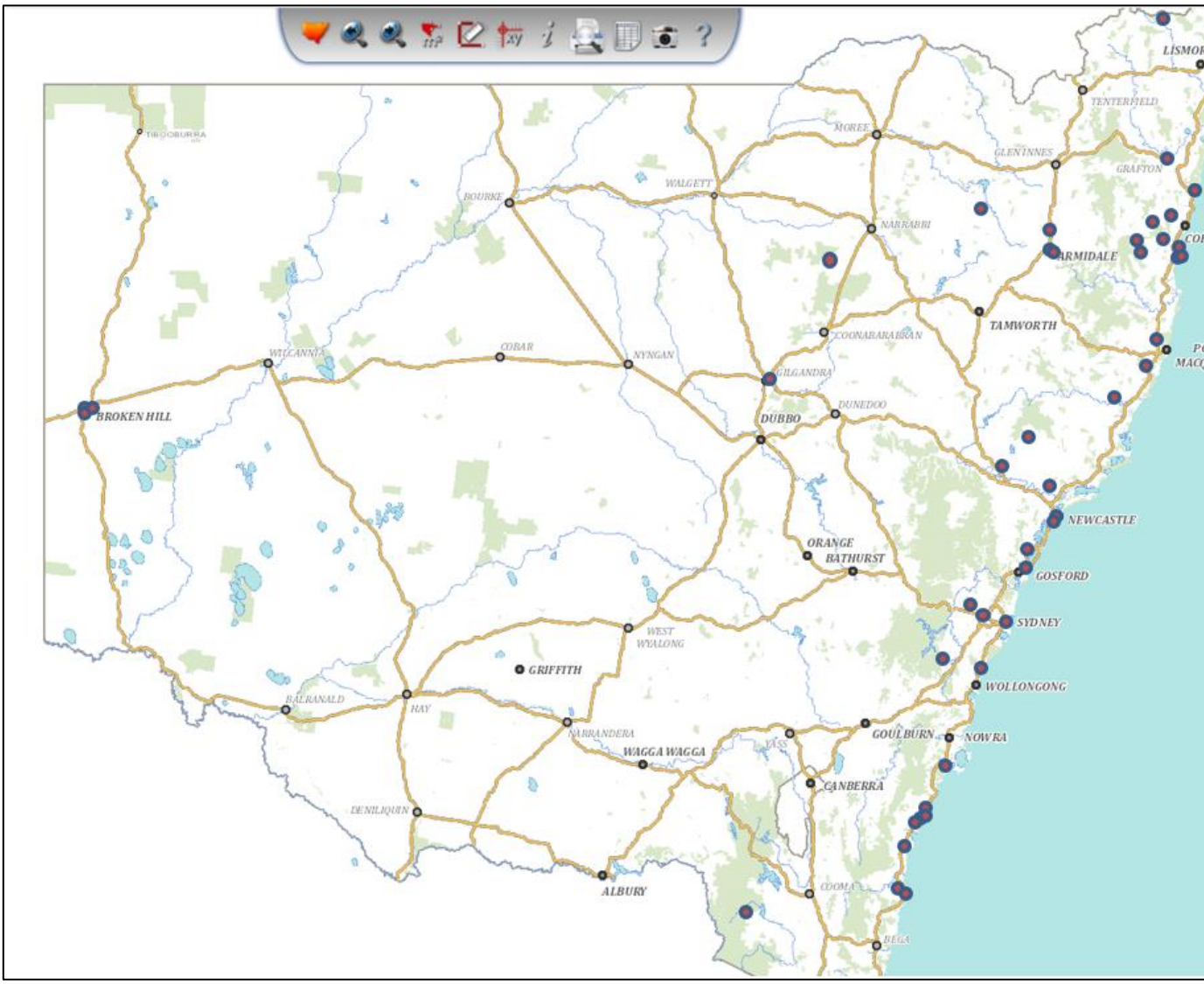

Figure 7.1 Map of NSW showing the distribution of Heritage listed sawmills and sawmill cottages.

8 Appendix B - Archaeological Site Clearance Certificate

To: The Principal's Representative

From: Lian Ramage, Excavation Director, AMBS

On behalf of CPB Contractors Pty Limited (ABN 98 000 893 667) and Ghella Pty Ltd (ABN 85 142 392 461)

This certificate is given in accordance with the "Sydney Metro - Western Sydney Airport, Station Boxes and Tunnelling Works Design and Construction Deed" (Contract No WSA-200-SBT) dated 22 December 2021 (**SBT Contract**). Words defined in the SBT Contract have the same meaning in this certificate.

In accordance with the terms of clause 12.12(b)(ii) of the SBT Contract, we hereby certify that in respect of [Insert details of applicable Artefact Risk Area]:

(a) Archaeological Clearance Works have been carried out and completed in accordance with the requirements of:
(i) section 2.7 of the General Specification;
(ii) the Construction Heritage Management Plan; and
(iii) all applicable Laws and guidelines relating to heritage and conservation;

(b) we are satisfied that:
(i) no further site research and/or testing is required; and
(ii) the tests completed are adequate and the results are satisfactory;

(c) the scope of the SBT Contractor's Activities to be carried out at [Insert details of applicable Artefact Risk Area] is understood and the potential future archaeological impact is assessed as low;

(d) based on the test findings and all available research material:

(i) we have assessed the future archaeological potential as low;
(ii) the implementation of the Sydney Metro Unexpected Heritage Finds Procedure (SM-18-001105232) will provide appropriate archaeological risk mitigation; and
(iii) additional controls such as archaeological monitoring [are / are not] required; and

(e) bulk earthworks can commence at [Insert details of applicable Artefact Risk Area].

……
Signed for and on behalf of
CPB Contractors and Ghella Joint Venture

Annexure G Compliance Tracking

SSI 10051 Planning Approval

Ref	Description	Reference	How Addressed
A1	The Proponent must carry out the CSSI in accordance with the terms of this approval and generally in accordance with: (a) Sydney Metro – Western Sydney Airport Environmental Impact Statement dated 21 October 2020; and (b) Sydney Metro – Western Sydney Airport Submissions Report submitted April 2021.	This Plan	This CEMP provides a framework for ensuring compliance with the requirements of the SSI 10051 Planning Approval and REMMs.
A2	The CSSI must only be carried out in accordance with all procedures, commitments, preventative actions, performance criteria and mitigation measures set out in the documents listed in Condition A1 unless otherwise specified in, or required under, this approval.	This Plan	This CEMP provides a framework for ensuring compliance with the requirements of the SSI 10051 Planning Approval and REMMs.
A3	In the event of an inconsistency between: (a) the conditions of this approval and any document listed in Condition A1, the conditions of this approval will prevail to the extent of the inconsistency; and (b) any document listed in Condition A1, the most recent document will prevail to the extent of the inconsistency. Note: For the purpose of this condition, there is an inconsistency between a term of this approval and any document if it is not possible to comply with both the term and the document.	This Plan	Condition noted.
A4	In the event that there are differing interpretations of the conditions of this approval, including in relation to a condition of this approval, the Planning Secretary's interpretation is final.	This Plan	Condition noted.
A5	The Proponent must comply with all written requirements or directions of the Planning Secretary, including in relation to: (a) the environmental performance of the CSSI; (b) any document or correspondence in relation to the CSSI; (c) any notification given to the Planning Secretary under the terms of this approval; (d) any audit of the construction or operation of the CSSI; (e) the terms of this approval and compliance with the terms of this approval (including anything required to be done under this approval); (f) the carrying out of any additional monitoring or mitigation measures; and (g) in respect of ongoing monitoring and management obligations, compliance with an	Annexure G	Condition noted. In the event that a written requirement or direction is received from the Planning Secretary, relevant information and/or records will be provided to Sydney Metro for submission.

Ref	Description	Reference	How Addressed
	updated or revised version of a guideline, protocol, Australian Standard or policy required to be complied with under the terms of this approval.		
A6	Where the terms of this approval require a document or monitoring program to be prepared, or a review to be undertaken, in consultation with identified parties, evidence of the consultation undertaken must be submitted to the Planning Secretary with the document. The evidence must include: (a) documentation of the engagement with the party identified in the condition of approval that has occurred before submitting the document for approval; (b) a log of the dates of engagement or attempted engagement with the identified party and a summary of the issues raised by them; (c) documentation of the follow-up with the identified party(s) where feedback has not been provided to confirm that the party(s) has none or has failed to provide feedback after repeated requests; (d) outline of the issues raised by the identified party(s) and how they have been addressed; and (e) a description of the outstanding issues raised by the identified party(s) and the reasons why they have not been addressed.	Section 1.4	This CEMP has been prepared in accordance with Conditions C2 and C3. In accordance with the Staging Report, this Plan will be submitted to the ER for endorsement. There are no agency consultation requirements triggered in the preparation of this CEMP.
A7	This approval lapses five (5) years after the date on which it is granted, unless work has physically commenced on or before that date.	Annexure G	Condition noted.
A8	References in the terms of this approval to any guideline, protocol, Australian Standard or policy are to such guidelines, protocols, standards or policies in the form they are in as at the date of this approval.	Annexure G	Condition noted.
A9	Any document that must be submitted or action taken within a timeframe specified in or under the conditions of this approval may be submitted or undertaken within a later timeframe agreed with the Planning Secretary. This condition does not apply to the written notification required in respect of an incident under Condition A39.	Annexure G	Condition noted.
A10	The CSSI may be constructed and operated in stages. Where staged construction and/or operation is proposed, a Staging Report must be prepared. The Staging Report must be submitted to the Planning Secretary for information no later than one (1) month before the lodgement of any CEMP or CEMP sub plan for the first of the proposed stages of construction (or if only staged operation is proposed, one (1) month before the	Section 2.3	The Staging Report is prepared by Sydney Metro. Details on construction staging, as relevant to the SBT Works, are provided in Section 2.3.

Ref	Description	Reference	How Addressed
	commencement of operation of the first of the proposed stages of operation), unless otherwise agreed with the Planning Secretary.		
A11	The Staging Report must: (a) set out how construction of the whole of the CSSI will be staged, including details of work and other activities to be carried out in each stage and the general timing of when construction of each stage will commence and finish; (b) if staged operation is proposed, set out how the operation of the whole of the CSSI will be staged, including details of each stage and the general timing of when operation of each stage will commence; (c) specify conditions that apply to each stage of construction and operation including how compliance with conditions will be achieved across and between each of the stages of the CSSI; (d) set out mechanisms for managing any cumulative impacts arising from the proposed staging; and (e) for the purposes of informing Conditions C2, C7 and C17, include an assessment of the predicted level of environmental risk and potential level of community concern posed by the construction activities required to construct each stage of the CSSI. With respect to (e) above, the risk assessment must use an appropriate process consistent with AS/NZS ISO 31000: 2018; Risk Management - Guidelines and must be endorsed by the ER. Note: 1. A Staging Report may reflect the staged construction and operation of the project through geographical activities, temporal activities or activity-based staging. 2. The risk matrix must reflect the stages of construction identified in the Staging Report	Section 2.3	The Staging Report is prepared by Sydney Metro. Details on construction staging, as relevant to the SBT Works, are provided in Section 2.3.
A12	The CSSI must be staged in accordance with the Staging Report, as submitted to the Planning Secretary for information.	Section 2.3	The Staging Report is prepared by Sydney Metro. Details on construction staging, as relevant to the SBT Works, are provided in Section 2.3.

Ref	Description	Reference	How Addressed
A13	Where staging is proposed, the terms of this approval that apply or are relevant to the work or activities to be carried out in a specific stage must be complied with at the relevant time for that stage.	Section 2.3	The Staging Report is prepared by Sydney Metro. Details on construction staging, as relevant to the SBT Works, are provided in Section 2.3.
A14	Where changes are proposed to the staging of construction or operation, a revised Staging Report must be prepared and submitted to the Planning Secretary for information before the commencement of changes to the stage of construction or the stage of operation.	Section 2.3	The Staging Report is prepared by Sydney Metro. Details on construction staging, as relevant to the SBT Works, are provided in Section 2.3. Where changes are proposed by CPBG, a revised Staging Report will be prepared by Sydney Metro and submitted to the Planning Secretary prior to commencement of the changes.
A15	Where changes are proposed to the risk assessment related to the staging of construction or operation, a revised Staging Report must be submitted to the Planning Secretary for information one (1) month before the lodgement of any CEMP or CEMP sub plan associated with the stage where change in risk assessment is proposed.	Section 2.3	The Staging Report is prepared by Sydney Metro. Details on construction staging, as relevant to the SBT Works, are provided in Section 2.3. Where changes to the risk assessment are proposed by CPBG, a revised Staging Report will be prepared by Sydney Metro and submitted to the Planning Secretary one month prior to lodgement of any CEMP or CEMP sub plan associated with the stage where change in risk assessment is proposed.
A16	The Proponent may submit any strategies, plans or programs required by this approval on a progressive basis, within each stage of the CSSI. Notes: 1. While any strategy, plan or program may be submitted on a progressive basis, the Proponent will need to ensure that the existing activities on site are covered by suitable strategies, plans or programs at all times; and 2. If the submission of any strategy, plan or program is to be submitted on a progressive basis, then the relevant strategy, plan or program must clearly describe the activities to which the strategy, plan or program applies, the relationship of this activity to any future activities within the stage, and the trigger for updating the strategy, plan or program. 3. The staged submission of strategies, plans or programs may reflect the construction and operation of the project through geographical activities, temporal activities or activity-based staging.	Section 2.3	Condition noted. The Staging Report is prepared by Sydney Metro. Details on construction staging, as relevant to the SBT Works, are provided in Section 2.3.

Ref	Description	Reference	How Addressed
A17	Ancillary facilities that are not identified by description and location in the documents listed in Condition A1 can only be established and used in each case if: (a) they are located within or immediately adjacent to the Construction Boundary of the CSSI; and (b) they are not located next to sensitive land use(s) (including where an access road is between the facility and the receiver), unless the landowner and occupier have given written acceptance to the carrying out of the relevant facility in the proposed location; and (c) they have no impacts on Heritage items (including areas of archaeological sensitivity), threatened species, populations or ecological communities beyond the impacts approved under the terms of this approval; and (d) the establishment and use of the facility can be carried out and managed within the outcomes set out in the terms of this approval, including in relation to environmental, social and economic impacts. Note: This condition does not apply to any ancillary facilities or work that are exempt or complying development, established before the commencement of construction under this approval or minor ancillary facilities established under Condition A22.	Section 2.6 Annexure C	The requirements of this condition are reflected in Section 2.6. As detailed in Annexure C, the scope of this CEMP is limited to ancillary facilities that are listed in Condition A1.
A18	Before establishment of any ancillary facility (excluding exempt or complying development, minor ancillary facilities determined by the ER to have minimal environmental impact and those established under Condition A22 and those considered in an approved CEMP), the Proponent must prepare a Site Establishment Management Plan which outlines the environmental management practices and procedures to be implemented for the establishment of the ancillary facilities. The Site Establishment Management Plan must be prepared in consultation with the Relevant Council(s) and relevant government agencies. The Site Establishment Management Plan must include: (a) a description of activities to be undertaken during establishment of the ancillary facility (including scheduling and duration of work to be undertaken at the site); (b) figures illustrating the proposed operational site layout and the location of the closest sensitive land use(s); (c) a program for ongoing analysis of the key environmental risks arising from the site establishment activities described in subsection (a) of this condition, including an initial risk assessment undertaken before the commencement of site establishment work; (d) details of how the site establishment activities described in subsection (a) of this condition will be carried out to: (i) meet the performance outcomes stated in the documents listed in Condition A1; and	Annexure C	Ancillary facilities, including site layouts, were included in the Preparatory CEMP and are similarly detailed within this CEMP (Annexure C). Reflecting the requirements of Condition C3, the Preparatory CEMP was endorsed by the ER prior to commencement of Preparatory Works. Given that the ancillary facilities were included within an endorsed CEMP, a Site Establishment Management Plan is not triggered.

Ref	Description	Reference	How Addressed
	(ii) manage the risks identified in the risk analysis undertaken in subsection (c) of this condition; and (e) a program for monitoring the performance outcomes, including a program for construction noise monitoring, where appropriate or required. Nothing in this condition prevents the Proponent from preparing individual Site Establishment Management Plans for each ancillary facility.		
A19	With the exception of a Site Establishment Management Plan expressly nominated by the Planning Secretary to be endorsed by the ER, all Site Establishment Management Plans must be submitted to the Planning Secretary for approval one (1) month before the establishment of any ancillary facilities.	Annexure C	Ancillary facilities, including site layouts, were included in the Preparatory CEMP and are similarly detailed within this CEMP (Annexure C). Reflecting the requirements of Condition C3, the Preparatory CEMP was endorsed by the ER prior to commencement of Preparatory Works. Given that the ancillary facilities were included within an endorsed CEMP, a Site Establishment Management Plan is not triggered.
A20	A Site Establishment Management Plan expressly nominated by the Planning Secretary to be endorsed by the ER must be submitted to the ER for endorsement one (1) month before the establishment of that ancillary facility or as otherwise agreed with the ER.	Annexure C	Ancillary facilities, including site layouts, were included in the Preparatory CEMP and are similarly detailed within this CEMP (Annexure C). Reflecting the requirements of Condition C3, the Preparatory CEMP was endorsed by the ER prior to commencement of Preparatory Works. Given that the ancillary facilities were included within an endorsed CEMP, a Site Establishment Management Plan is not triggered.
A21	The use of ancillary facility for construction must not commence until the CEMP required by Condition C1 relevant CEMP Sub-plans required by Condition C5 and relevant Construction Monitoring Programs required by Condition C13 have been approved by the Planning Secretary or endorsed by the ER (whichever is applicable). Note: This condition does not apply to Condition A22 or where the use of an ancillary facility is Low Impact Work or for Low Impact Work.	Section 1.4	Ancillary facilities, including site layouts, were included in the Preparatory CEMP and are similarly detailed within this CEMP (Annexure C). The use of ancillary facilities for construction commenced following ER endorsement of the Preparatory CEMP.
A22	Lunch sheds, office sheds, portable toilet facilities and the like, can be established and used where they have been assessed in the documents listed in Condition A1 or satisfy the	Section 2.5	Lunch sheds, office sheds, portable toilet facilities and the like, will be assessed in accordance with the

Ref	Description	Reference	How Addressed
	following criteria: (a) are located within or adjacent to the Construction Boundary; and (b) have been assessed by the ER to have - (i) minimal amenity impacts to surrounding residences and businesses, after consideration of matters such as compliance with the ICNG, traffic and access impacts, dust and odour impacts, and visual (including light spill) impacts, and (ii) minimal environmental impact with respect to waste management and flooding, and (iii) no impacts on biodiversity, soil and water, and Heritage items beyond those already approved under other terms of this approval.		requirements of this condition and endorsed by the ER prior to establishment.
A23	Boundary screening must be erected around ancillary facilities that are adjacent to sensitive land use(s) for the duration that the ancillary facility is in use unless otherwise agreed with relevant affected residents, business operators or landowners.	Annexure B	The requirements of this condition are addressed in the Visual Amenity Management Procedure.
A24	Boundary screening required under Condition A23 must minimise visual impacts on adjacent sensitive land use(s).	Annexure B	The requirements of this condition are addressed in the Visual Amenity Management Procedure.
A25	All Independent Appointments required by the terms of this approval must have regard to the Department's guideline Seeking approval from the Department for the appointment of independent experts (DPIE, 2020) and hold current membership of a relevant professional body, unless otherwise agreed by the Planning Secretary.	Section 4	Sydney Metro is responsible for the engagement of Independent Appointments. Roles and responsibilities of Independent Appointments with respect to the SBT Works are detailed in Section 4.
A26	The Planning Secretary may at any time commission an audit of how an Independent Appointment has exercised their functions. The Proponent must: (a) facilitate and assist the Planning Secretary in any such audit; and (b) make it a term of their engagement of an Independent Appointment that the Independent Appointment facilitate and assist the Planning Secretary in any such audit.	Annexure G	Condition noted.
A27	Upon completion of an audit under Conditions A26 above, the Planning Secretary may withdraw its approval of an Independent Appointment should they consider the Independent Appointment has not exercised their functions in accordance with this approval. Note: Conditions A26 and A27 apply to all Independent Appointments including the ER and Independent Auditor.	Annexure G	Condition noted.

Ref	Description	Reference	How Addressed
A28	Work must not commence until an Environmental Representative (ER) has been nominated by the Proponent and approved by the Planning Secretary.	Annexure G	The ER has been nominated by Sydney Metro and approved by the Planning Secretary.
A29	The proposed ER must be a suitably qualified and experienced person(s) who was not involved in the preparation of the documents listed in Condition A1 and is independent from the design and construction personnel for the CSSI and those involved in the delivery of it.	Annexure G	The ER has been nominated by Sydney Metro and approved by the Planning Secretary in accordance with the requirements of this Condition.
A30	The Proponent may engage more than one ER for the CSSI, in which case the functions to be exercised by an ER under the terms of this approval may be carried out by any ER that is approved by the Planning Secretary for the purposes of the SSI.	Annexure G	The ER (and alternate) has been nominated by Sydney Metro and approved by the Planning Secretary in accordance with the requirements of this Condition.
A31	The ER must meet the requirements of the Department's Environmental Representative Protocol (DPE, 2018).	Section 4.4	The ER has been nominated by Sydney Metro and approved by the Planning Secretary. Roles and responsibilities of the ER are detailed in Section 4.4.
A32	For the duration of the work until the commencement of operation, or as agreed with the Planning Secretary, the approved ER must: (a) receive and respond to communication from the Planning Secretary in relation to the environmental performance of the CSSI; (b) consider and inform the Planning Secretary on matters specified in the terms of this approval; (c) consider and recommend to the Proponent any improvements that may be made to work practices to avoid or minimise adverse impact to the environment and to the community; (d) review documents identified in Conditions A10, A18, A20, C1, C5 and C13 and any other documents that are identified by the Planning Secretary, to ensure they are consistent with requirements in or under this approval and if so: (i) endorse the documents before submission of such documents to the Planning Secretary (if those documents are required to be approved by the Planning Secretary); or (ii) endorse the documents before the implementation of such documents (if those documents are only required to be submitted to the Planning Secretary / Department for information or are not required to be submitted to the Planning Secretary / Department);	Section 4.4	The ER has been nominated by Sydney Metro and approved by the Planning Secretary. Roles and responsibilities of the ER are detailed in Section 4.4.

Ref	Description	Reference	How Addressed
	(iii) provide a written statement to the Planning Secretary advising the documents have been endorsed. (e) for documents that are required to be submitted to the Planning Secretary / Department for information under (d)(ii) above, the documents must be submitted as soon as practicable to the Planning Secretary / Department after endorsement by the ER, unless otherwise agreed by the Planning Secretary; (f) regularly monitor the implementation of the documents listed in Conditions A10, A18, A20, C1, C5 and C13 to ensure implementation is being carried out in accordance with the document and the terms of this approval; (g) as may be requested by the Planning Secretary, help plan or attend audits of the development commissioned by the Department including scoping audits, programming audits, briefings and site visits, but not independent environmental audits required under Condition A36; (h) as may be requested by the Planning Secretary, assist the Department in the resolution of community complaints received directly by the Department; (i) consider or assess the impacts of minor ancillary facilities as required by Condition A22; and (j) consider any minor amendments to be made to the Site Establishment Management Plan, CEMP, CEMP Sub-plans and construction monitoring programs without increasing impacts to nearby sensitive land use(s), and are consistent with the terms of this approval and the Site Establishment Management Plan, CEMP, CEMP Sub-plans and construction monitoring programs approved by the Planning Secretary and, if satisfied such amendment is necessary, approve the amendment. This does not include any modifications to the terms of this approval; (k) 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		

Ref	Description	Reference	How Addressed
	be submitted within seven (7) days following the end of each month for the duration of the ER's engagement for the CSSI or as otherwise agreed by the Planning Secretary; and (l) assess the impacts of activities as required by the Low Impact Work definition. With respect to (d) above, the ER is not required to endorse the specialist content in documents requiring specialist review and / or endorsement.		
A33	The Proponent must provide the ER with all documentation requested by the ER in order for the ER to perform their functions specified in Condition A32 (including preparation of the ER monthly report), as well as: (a) the Complaints Register (to be provided on a weekly basis or as requested); and (b) a copy of any assessment carried out by the Proponent of whether proposed work is consistent with the approval (which must be provided to the ER before the commencement of the subject work).	Section 7.7.3 Section 7.12.3	The requirements of this Condition are included in Section 7.7.3 and Section 7.12.3.
A34	The Department, and relevant Councils must be notified in writing of the date of commencement of construction at least seven (7) days before the commencement of construction.	Section 1.4	The requirements of this condition were satisfied prior to commencement of the Preparatory Works.
A35	If construction of the CSSI is to be staged, the Department, Liverpool City Council and Penrith City Council must be notified in writing at least seven (7) days before the commencement of each stage, of the date of the commencement of that stage.	Section 1.4	DPE and relevant Councils will be notified in writing of the date of date of commencement of the Bulk Excavation and Tunnelling Works at least seven days before the commencement of this sub-stage.
A36	Independent Audits of the CSSI must be conducted and carried out in accordance with the Independent Audit Post Approval Requirements (DPIE, 2020).	Section 7.13.1	Sydney Metro is responsible for the delivery of Independent Audits. The requirement to undertake Independent Audits during the SBT Works is detailed in Section 7.13.1.
A37	Notwithstanding Condition A36, the Proponent may prepare an audit program to outline the scope and timing of each independent audit that will be undertaken during construction. If prepared, the audit program must be developed in consultation with, and approved by, the Planning Secretary prior to commencement of the first audit and implemented throughout construction.	Section 7.13.1	Sydney Metro is responsible for the preparation of an audit program. CPBG will fully participate in Independent Audits as relevant to the SBT Works.

Ref	Description	Reference	How Addressed
A38	Proposed independent auditors must be approved by the Planning Secretary before the commencement of an Independent Audit.	Section 7.13.1	Sydney Metro is responsible for the engagement of Independent Auditors.
A39	The Planning Secretary may require the initial and subsequent Independent Audits to be undertaken at different times to those specified in the Independent Audit Post Approval Requirements (DPIE, 2020), upon giving at least four (4) weeks' notice (or timing as stipulated by the Planning Secretary) to the Proponent of the date upon which the audit must be commenced.	Section 7.13.1	Condition noted.
A40	Independent Audit Reports and the Proponent's response to audit findings must be submitted to the Planning Secretary within two (2) months of undertaking the independent audit site inspection as outlined in the Independent Audit Post Approval Requirements (DPIE, 2020), unless otherwise agreed by the Planning Secretary.	Section 7.13.1	Sydney Metro is responsible for the delivery of Independent Audits. The requirements of this Condition are captured in Section 7.13.1.
A41	The Planning Secretary must be notified via phone or in writing via the Major Projects website as soon as possible and no later than 12 hours after the Proponent becomes aware of an incident. Any notification via phone must be followed up by a notification in writing via the Major Projects website within 24 hours of the initial phone call. The written notification must identify the CSSI (including the application number and the name of the CSSI if it has one) and set out the location and general nature of the incident.	Section 7.10.2	Notification to the Planning Secretary of incidents will be undertaken in accordance with the requirements of this condition.
A43	Subsequent notification must be given and reports submitted in accordance with the requirements set out in Appendix A.	Section 7.10.2	A subsequent notification and report will be submitted to DPE within seven days in accordance with the requirements set out in Appendix A of the Infrastructure Approval.
A44	The Planning Secretary must be notified in writing via the Major Projects website within seven (7) days after the Proponent becomes aware of any non-compliance with the terms of this approval.	Section 7.4.3	Notification to the Planning Secretary of non-compliances will be undertaken in accordance with the requirements of this condition.
A45	A non-compliance notification must identify the CSSI (including the application number for it), set out the condition of approval that the development is non-compliant with, the way in which it does not comply and the reasons for the non-compliance (if known) and what actions have been, or will be undertaken to address the non-compliance.	Section 7.4.3	Notification to the Planning Secretary of non-compliances will be undertaken in accordance with the requirements of this condition.

Ref	Description	Reference	How Addressed
	Note: A non-compliance which has been notified as an incident does not need to also be notified as a non-compliance.		
A46	All Heavy Vehicles used for spoil haulage must be clearly marked on the sides and rear with the project name and application number to enable immediate identification by a person viewing the Heavy Vehicle standing 20 metres away.	Spoil Management Sub-Plan	The requirements of this condition are addressed in the Spoil Management Sub-Plan.
A47	The CSSI name, application number, telephone number, postal address and email address required under Condition B3 must be available on site boundary fencing / hoarding at each ancillary facility before the commencement of construction. This information must also be provided on the website required under Condition B11.	Annexure B	The requirements of this condition are addressed in the Visual Amenity Management Procedure.
B1	The Overarching Community Communication Strategy as provided in the documents listed in Condition A1, or updated Strategy must be implemented for the duration of the work. Should the Overarching Community Communication Strategy be updated, a copy must be provided to the Planning Secretary for information.	Section 7.7.2	Sydney Metro has developed an OCCS for the Sydney Metro Western Sydney Airport project. The OCCS incorporates both on and off-airport works, with the on-airport components being developed in consultation with Western Sydney Airport. In accordance with the OCCS, CPBG have developed a Communication Strategy (M6S1-CPBG-NWW-CYCG-MPL-000900) for the SBT Works. The Communication Strategy provides details on the mechanisms to facilitate communication between project parties, stakeholders and the community in accordance with the Condition B1.
B2	A Complaints Management System must be prepared and implemented before the commencement of any work and maintained for the duration of construction and for a minimum for 12 months following completion of construction of the CSSI.	Section 7.7.3	The Complaints Management System will be established by Sydney Metro prior to commencement of any work. CPBG will implement the Complaints Management System for the duration of the SBT Works.
B3	The following information must be available to facilitate community enquiries and manage complaints before the commencement of work and for 12 months following the completion of construction:	Communication Strategy	As detailed in the Community Communication Strategy (SMWSASBT-CPG-1NL-NL000-CY-PLN-000002), the requirements of this Condition have been satisfied by Sydney Metro.

Ref	Description	Reference	How Addressed
	(a) a 24- hour telephone number for the registration of complaints and enquiries about the CSSI; (b) a postal address to which written complaints and enquires may be sent; (c) an email address to which electronic complaints and enquiries may be transmitted; and (d) a mediation system for complaints unable to be resolved. This information must be accessible to all in the community regardless of age, ethnicity, disability or literacy level.		
B4	A Complaints Register must be maintained recording information on all complaints received about the CSSI during the carrying out of any work and for a minimum of 12 months following the completion of construction. The Complaints Register must record the: (a) number of complaints received; (b) date and time of the complaint; (c) number of people (in the household) affected in relation to a complaint, if relevant; (d) method by which the complaint was made; (e) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect; (f) issue of the complaint; (g) means by which the complaint was addressed and whether resolution was reached, with or without mediation; and (h) if no action was taken, the reason(s) why no action was taken.	Section 7.7.3	Sydney Metro will maintain the Complaints Register during the Project and for a minimum of 12 months following completion of construction. The requirements of this Condition will be captured within the Complaints Register by CPBG.
B5	Complainants must be advised of the following information before, or as soon as practicable after, providing personal information: (a) the Complaints Register may be forwarded to government agencies, including the Department (Department of Planning Industry and Environment, 4 Parramatta Square, 12 Darcy Street, Parramatta NSW 2150), to allow them to undertake their regulatory duties; (b) by providing personal information, the complainant authorises the Proponent to provide that information to government agencies; (c) the supply of personal information by the complainant is voluntary; and (d) the complainant has the right to contact government agencies to access personal information held about them and to correct or amend that information (Collection Statement).	Section 7.7.3	The Collection Statement will be communicated to complainants in accordance with the requirements of this Condition.

Ref	Description	Reference	How Addressed
	The Collection Statement must be included on the Proponent or development website to make prospective complainants aware of their rights under the Privacy and Personal Information Protection Act 1998 (NSW). For any complaints made in person, the complainant must be made aware of the Collection Statement.		
B6	The Complaints Register must be provided to the Planning Secretary upon request, within the timeframe stated in the request. Note: Complainants must be advised that the Complaints Register may be forwarded to Government agencies to allow them to undertake their regulatory duties.	Section 7.7.3	The requirements of this Condition are reflected in Section 7.7.3. Sydney Metro is responsible for submission of the Complaints Register to the Planning Secretary.
B7	A Community Complaints Mediator that is independent of the design and construction personnel must be engaged by the Proponent, upon the referral of the complaint by the ER in accordance with the Overarching Community Communication Strategy.	Section 7.7.3 Communication Strategy	Sydney Metro is responsible for the engagement of the Community Complaints Mediator. Further details on the Community Complaints Mediator are provided in the Communication Strategy.
B8	The role of the Community Complaints Mediator is to provide independent mediation services for any reasonable and unresolved complaint referred by the ER where a member of the public is not satisfied by the Proponent's response. Where a Community Complaints Mediator is required, a mediator accredited under the National Mediator Accreditation System (NMAS), administered by the Mediator Standards Board must be appointed.	Section 7.7.3 Communication Strategy	Sydney Metro is responsible for the engagement of the Community Complaints Mediator. Further details on the Community Complaints Mediator are provided in the Communication Strategy.
B9	The Community Complaints Mediator will: (a) review any unresolved disputes, referred by the ER in accordance with the Overarching Community Communication Strategy; (b) make recommendations to the Proponent to satisfactorily address complaints, resolve disputes or mitigate against the occurrence of future complaints or disputes; and	Section 7.7.3 Communication Strategy	Sydney Metro is responsible for the engagement of the Community Complaints Mediator. Further details on the Community Complaints Mediator are provided in the Communication Strategy.

Ref	Description	Reference	How Addressed
	(c) provide a copy of the recommendations, and the Proponent's response to the recommendations, to the Planning Secretary within one month of the recommendations being made.		
B10	Community Complaints Mediation will not be enacted before the Complaints Management System required by Condition B2 has been executed for a complaint and will not consider issues such as property acquisition, where other dispute processes are provided for in this approval, statute or clear government policy and resolution processes are available, or matters which are not within the scope of this CSSI.	Section 7.7.3 Communication Strategy	Sydney Metro is responsible for the engagement of the Community Complaints Mediator. Further details on the Community Complaints Mediator are provided in the Communication Strategy.
B11	A website or webpage providing information in relation to the CSSI must be established before commencement of work and maintained for the duration of construction, and for a minimum of 24 months following the completion of all stages of construction of the CSSI. Up-to-date information (excluding confidential, private, commercial information or other documents as agreed to by the Planning Secretary) must be published before the relevant work commencing and maintained on the website or dedicated pages including: (a) information on the current implementation status of the CSSI; (b) a copy of the documents listed in Condition A1, and any documentation relating to any modifications made to the CSSI or the terms of this approval; (c) a copy of this approval in its original form, a current consolidated copy of this approval (that is, including any approved modifications to its terms), and copies of any approval granted by the Minister to a modification of the terms of this approval, or links to the referenced documents where available; (d) a copy of each statutory approval, licence or permit required and obtained in relation to the CSSI, or where the issuing agency maintains a website of approvals, licences or permits, a link to that website; (e) a current copy of each document required under the terms of this approval, which must be published within one (1) week of its approval or before the commencement of any work to which they relate or before their implementation, as the case may be; and (f) a copy of the audit reports required under this approval.	Section 1.4	The Project website has been established by Sydney Metro. Reflecting the requirements of this Condition, CPBG will provide Sydney Metro with this CEMP for inclusion on the website.

Ref	Description	Reference	How Addressed
	Where the information / document relates to a particular work or is required to be implemented, it must be published before the commencement of the relevant work to which it relates or before its implementation. All information required in this condition is to be provided on the website or webpage, and easy to navigate.		
C1	Construction Environmental Management Plans (CEMPs) and CEMP Sub-plans must be prepared in accordance with the Construction Environmental Management Framework (CEMF) included in the documents listed in Condition A1 to detail how the performance outcomes, commitments and mitigation measures specified in the documents listed in Condition A1 will be implemented and achieved during construction.	This Plan	This CEMP has been prepared in accordance with the CEMF.
C2	With the exception of any CEMPs expressly nominated by the Planning Secretary to be endorsed by the ER, all CEMPs must be submitted to the Planning Secretary for approval. Note: The Planning Secretary will consider the assessment of the predicted level of environmental risk and potential level of community concern required under Condition A11(e) when deciding whether any CEMP's may be endorsed by the ER	Section 1.4	This CEMP will be submitted to the ER for endorsement no later than one month before the commencement of Bulk Excavation and Tunnelling Works.
C3	The CEMP(s) not requiring the Planning Secretary's approval must be submitted to the ER for endorsement 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. That CEMP must obtain the endorsement of the ER as being consistent with the conditions of this approval and all undertakings made in the documents listed in Condition A1.	Section 1.4	This CEMP will be submitted to the ER for endorsement no later than one month before the commencement of Bulk Excavation and Tunnelling Works.
C4	Any CEMP to be approved by the Planning Secretary must be endorsed by the ER and then submitted to the Planning Secretary for approval no later than one (1) month before the commencement of construction or where construction is staged no later than one (1) month before the commencement of that stage.	Section 1.4	As detailed in the Staging Report, this CEMP is to be submitted to the ER for endorsement; Planning Secretary approval is not required.
C5	Of the CEMP Sub-plans required under Condition C1, the following CEMP Sub-plans must be prepared in consultation with the relevant government agencies identified for each CEMP Sub-plan. Details of issues raised by a government agency during consultation (as required by Condition A6) must be provided with the relevant CEMP Sub-plan when submitted to the	Noise and Vibration	Refer to the respective sub-plan for details on consultation with government agencies and approvals process.

<table>
<tr><th>Ref</th><th>Description</th><th>Reference</th><th>How Addressed</th></tr>
<tr><td></td><td>Planning Secretary / ER (whichever is applicable). Where a government agency(ies) request(s) is not included, the Proponent must provide the Planning Secretary / ER (whichever is applicable) justification as to why.

<table><tr><th></th><th>Required CEMP Sub-plan</th><th>Relevant government agencies to be consulted for each CEMP Sub-plan</th></tr><tr><td>(a)</td><td>Noise and vibration</td><td>Relevant Councils and WaterNSW (in relation to its assets)</td></tr><tr><td>(b)</td><td>Flora and fauna</td><td>DPIE EES, DPI Fisheries, and Relevant Councils</td></tr><tr><td>(c)</td><td>Soil and Water</td><td>DPI Fisheries, and Relevant Councils</td></tr><tr><td>(d)</td><td>Non-Aboriginal heritage</td><td>Relevant Councils, WaterNSW and Heritage NSW</td></tr></table>
Note: CEMP Sub-plan(s) may reflect the construction of the project through geographical activities, temporal activities or activity based staging.</td><td>Management Sub-Plan

Flora and Fauna Management Sub-Plan

Soil and Water Management Sub-Plan</td><td>In accordance with the approved Staging Report, a Non-Aboriginal Heritage Management Sub-Plan was not required to be prepared for the SBT Works. As such, the requirements of Condition C5 were not triggered for Non-Aboriginal heritage.</td></tr>
<tr><td>C9</td><td>Any of the CEMP Sub-plans to be approved by the Planning Secretary must be submitted to the Planning Secretary with, or subsequent to, the submission of the CEMP but in any event, no later than one (1) month before construction or where construction is staged no later than one (1) month before the commencement of that stage.</td><td>Vibration Management Sub-Plan

Flora and Fauna Management Sub-Plan

Soil and Water Management Sub-Plan</td><td>Refer to the respective Sub-Plans for details on the approvals process.</td></tr>
<tr><td>C10</td><td>Construction must not commence until the CEMP and all CEMP Sub-plans have been approved by the Planning Secretary or endorsed by the ER (whichever is applicable), unless otherwise agreed by the Planning Secretary. The CEMP and CEMP Sub-plans, as approved by the Planning Secretary or endorsed by the ER (whichever is applicable), including any minor amendments approved by the ER, must be implemented for the duration of construction.</td><td>Section 1.4</td><td>The Bulk Excavation and Tunnelling Works will not commence until this CEMP has been endorsed by the ER. This CEMP will be implemented for the duration of the SBT Works.</td></tr>
</table>

<table>
<tr><th>Ref</th><th>Description</th><th>Reference</th><th>How Addressed</th></tr>
<tr><td>C13</td><td>The following Construction Monitoring Programs must be prepared in consultation with the relevant government agencies (as required by Condition A6) identified for each to compare actual performance of construction of the CSSI against the performance predicted in the documents listed in Condition A1 or in the CEMP. Where a government agency(ies) request(s) is not included, the Proponent must provide the Planning Secretary / ER (whichever is applicable) justification as to why.
<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>Relevant Councils and WaterNSW (in relation to its assets)</td></tr>
<tr><td>(b)</td><td>Surface water quality</td><td>DPIE Water, DPI Fisheries, and Relevant Councils</td></tr>
<tr><td>(c)</td><td>Groundwater</td><td>DPIE Water</td></tr>
<tr><td>(d)</td><td>Air Quality</td><td>Relevant Councils</td></tr>
</table></td><td>Section 1.4
Annexure H</td><td>The Air Quality Management Procedure and Monitoring Program was prepared in consultation with relevant Councils. The detailed Consultation Report is provided in Annexure H.</td></tr>
<tr><td>C14</td><td>Each Construction Monitoring Program must provide:
(a) details of baseline data available including the period of baseline monitoring;
(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) the reporting of monitoring results and analysis results against relevant criteria;
(h) details of the methods that will be used to analyse the monitoring data;
(i) procedures to identify and implement additional mitigation measures where the results of the monitoring indicated unacceptable project impacts;
(j) a consideration of SMART principles;
(k) any consultation to be undertaken in relation to the monitoring programs; and</td><td>Annexure H</td><td>The requirements of this condition are addressed in the Air Quality Management Procedure and Monitoring Program (Annexure H).</td></tr>
</table>

Ref	Description	Reference	How Addressed
	(l) any specific requirements as required by Conditions C15 to C16.		
C17	With the exception of any Construction Monitoring Programs expressly nominated by the Planning Secretary to be endorsed by the ER, all Construction Monitoring Programs must be submitted to the Planning Secretary for approval.	Section 1.4	In accordance with the Staging Report, the Air Quality Management Procedure and Monitoring Program has been submitted to the ER for endorsement.
C18	The Construction Monitoring Programs not requiring the Planning Secretary's approval must obtain the endorsement of the ER as being in accordance with the conditions of approval and all undertakings made in the documents listed in Condition A1. Any of these Construction Monitoring Programs must be submitted to the ER for endorsement at least one (1) month before the commencement of construction or where construction is staged no later than one (1) month before the commencement of that stage.	Section 1.4	The Air Quality Management Procedure and Monitoring Program was submitted to the ER for endorsement at leave one month before the commencement of the Bulk Excavation and Tunnelling Works.
C19	Any of the Construction Monitoring Programs which require Planning Secretary approval must be endorsed by the ER and then submitted to the Planning Secretary for approval at least one (1) month before the commencement of construction or where construction is staged no later than one (1) month before the commencement of that stage.	Section 1.4	The requirements of this condition are not triggered by the Air Quality Management Procedure and Monitoring Program. Refer to the Soil and Water Management Sub-Plan and the Noise and Vibration Management Sub-Plan for details on how Condition C19 has been addressed for the Groundwater Monitoring Program, Surface Water Quality Monitoring Program and the Noise and Vibration Monitoring Program.
C20	Unless otherwise agreed with the Planning Secretary, construction must not commence until the Planning Secretary has approved, or the ER has endorsed (whichever is applicable), all of the required Construction Monitoring Programs and all relevant baseline data for the specific construction activity has been collected.	Section 1.4	The requirements of this Condition are addressed in Section 1.4.
C21	The Construction Monitoring Programs, as approved by the Planning Secretary or the ER has endorsed (whichever is applicable), including any minor amendments approved by the ER, must be implemented for the duration of construction and for any longer period set out in the monitoring program or specified by the Planning Secretary or the ER (whichever is applicable), whichever is the greater.	Section 1.4	The requirements of this Condition are addressed in Section 1.4.

Ref	Description	Reference	How Addressed
C22	The results of the Construction Monitoring Programs must be submitted to the Planning Secretary, ER and relevant regulatory agencies, for information in the form of a Construction Monitoring Report at the frequency identified in the relevant Construction Monitoring Program. Note: Where a relevant CEMP Sub-plan exists, the relevant Construction Monitoring Program may be incorporated into that CEMP Sub-plan.	Annexure H	The requirements of this condition are addressed in the Air Quality Management Procedure and Monitoring Program (Annexure H).
E1	All reasonably practicable measures must be implemented to minimise the emission of dust and other air pollutants during construction.	Annexure B	The requirements of this Condition are addressed in the Air Quality Management Procedure and Monitoring Program.
E19	The Proponent must not destroy, modify or otherwise physically affect any Heritage item not identified in documents referred to in Condition A1. Unexpected heritage finds identified by the CSSI must be managed in accordance with the Unexpected Heritage Finds and Human Remains Procedure outlined in Conditions E34 to E36. Consideration of avoidance and redesign to protect unexpected finds of state heritage significance must be addressed where this condition applies.	Annexure B	The requirements of this Condition are addressed in the Sydney Metro Unexpected Heritage Finds Procedure (SM-18-001105232) and summarised in the Aboriginal and Historic Heritage Unexpected Finds Workflow (Annexure B).
E20	The dismantling and reassembly of the jib crane at St Marys Station, if required, must only be undertaken under the supervision of a consultant experienced in the conservation of heritage machinery.	Section 6.6.7	The requirements of this Condition are addressed in Section 6.6.7.
E21	The St Marys Goods Shed must not be destroyed, modified or otherwise adversely affected, except as identified in the documents listed in Condition A1.	Section 6.6.7	The requirements of this Condition are addressed in Section 6.6.7.
E22	The Archaeological Research Design included in the documents listed in Condition A1 must be implemented during construction.	Annexure F Section 6.6.4	The Archaeological Method Statement (Annexure F) has been prepared in accordance with the Archaeological Research Design.
E23	Before commencement of archaeological excavation, the Proponent must, in consultation with Heritage NSW, nominate a suitably qualified Excavation Director, who complies with Heritage Council of NSW's Criteria for Assessment of Excavation Director (September 2019), to oversee and advise on matters associated with historical archaeology for the approval of the Planning Secretary. The Excavation Director must be present to oversee excavation,	Annexure F Section 6.6.4	The requirement to engage a suitably qualified Excavation Director prior to commencement of archaeological excavation is addressed in the Archaeological Method Statement (Annexure F) and Section 6.6.4 of this Plan.

Ref	Description	Reference	How Addressed
	advise on archaeological issues, advise on the duration and extent of oversight required during archaeological excavations consistent with the Archaeological Research Design and Excavation Methodology(s) identified in the documents listed in Condition A1. More than one Excavation Director may be engaged for CSSI to exercise the functions required under the conditions of this approval.		
E24	Archival photographic digital recording must be undertaken for all listed heritage items which will be affected by the CSSI. The recordings must be undertaken prior to the commencement of Work which may impact the items and documented in an Archival Recording Report. The recordings must include buildings, structures and landscape features and detailed maps showing the location of features. The archival recording must be prepared in accordance with How to Prepare Archival Records of Heritage Items (NSW Heritage Office, 1998) and Photographic Recording of Heritage Items Using Film or Digital Capture (NSW Heritage Office, 2006).	Section 6.6.3	The requirements of this Condition are addressed in Section 6.6.3.
E25	The Archival Recording Report must be submitted to the Planning Secretary, relevant councils and Heritage NSW for information within 12 months of completing all work described in the documents listed in Condition A1 in relation to heritage items. Copies of the Archival Recording Report must also be provided to relevant local historical societies.	Section 6.6.3	The requirements of this Condition are addressed in Section 6.6.3.
E26	Following completion of all work described in the documents listed in Condition A1 in relation to heritage items, a non-Aboriginal Archaeological Excavation Report including the details of further historical research either undertaken or to be carried out and archaeological excavations (with artefact analysis and identification of a final repository for finds) and addressing the research design, must be prepared in accordance with any guidelines and standards required by the Heritage Council of NSW and Heritage NSW.	Annexure F Section 6.6.4	The requirements of this Condition are addressed in the Archaeological Method Statement (Annexure F) and Section 6.6.4.
E27	The non-Aboriginal Archaeological Excavation Report must be submitted to the Planning Secretary, relevant councils and Heritage NSW for information within 12 months of completing all Work described in the documents listed in Condition A1 in relation to heritage items. Copies of the Report must also be provided to relevant local historical societies and local libraries.	Section 6.6.4	The requirements of this Condition are addressed in Section 6.6.4.

Ref	Description	Reference	How Addressed
E28	All reasonable steps must be taken so as not to harm, modify or otherwise impact Aboriginal objects or places of cultural significance except as authorised by this approval.	Section 6.5	The requirements of this Condition are addressed in Section 6.5.
E29	The Registered Aboriginal Parties (RAPs) must be kept regularly informed about the CSSI. The RAPs must continue to be provided with the opportunity to be consulted about the Aboriginal cultural heritage management requirements of the CSSI throughout construction.	Section 6.5	The requirements of this Condition are addressed in Section 6.5.
E30	The Aboriginal Cultural Heritage Management Plan included in the documents listed in Condition A1 must be updated to include: (a) a methodology for the completion of pedestrian surveys for all areas within the project footprint yet to be surveyed; (b) procedures for undertaking further test excavation and, if necessary, salvage excavations prior to the commencement of works in areas subject to further test excavation; (c) mapping that clearly outlines all areas yet to be subject to survey, test excavations, and salvage excavations; (d) a procedure to update mapping following the completion of survey, test excavations, and salvage excavations that detail the archaeological works conducted across the project footprint; (e) a procedure for updating the predictive model following the identification of new Aboriginal heritage items; and (f) a procedure to report and update the effectiveness of the Aboriginal Cultural Heritage Management Plan following the completion of survey, test excavation activities or significant artefact finds. The updated Plan must be submitted to the Planning Secretary for information prior to works in areas identified for further test excavations. Note: Salvage excavations in the areas identified for salvage in documents in Condition A1, may occur prior to additional test excavations occurring.	Section 6.5	The ACHMP has been prepared by Sydney Metro in accordance with the requirements of this Condition.

Ref	Description	Reference	How Addressed
E31	The updated Aboriginal Cultural Heritage Management Plan must be implemented for the duration of salvage activities and construction.	Section 6.5	The ACHMP has been prepared by Sydney Metro in accordance with the requirements of this Condition.
E33	Where previously unidentified Aboriginal objects or places of cultural significance are discovered, all work must immediately stop in the vicinity of the affected area. Works potentially affecting the previously unidentified objects or places must not recommence until Heritage NSW has been informed. The measures to consider and manage this process must be specified in the Unexpected Heritage Finds and Human Remains Procedure required by Condition E34 and include registration in the Aboriginal Heritage Information Management System (AHIMS), where required.	Annexure B	The requirements of this Condition are addressed in the Sydney Metro Unexpected Heritage Finds Procedure (SM-18-001105232) and summarised in the Aboriginal and Historic Heritage Unexpected Finds Workflow (Annexure B).
E34	An Unexpected Heritage Finds and Human Remains Procedure must be prepared to manage unexpected heritage finds (heritage items and values) in accordance with any guidelines and standards prepared by the Heritage Council of NSW or Heritage NSW.	Annexure B	The requirements of this Condition are addressed in the Sydney Metro Unexpected Heritage Finds Procedure (SM-18-001105232) and summarised in the Aboriginal and Historic Heritage Unexpected Finds Workflow (Annexure B).
E35	The Unexpected Heritage Finds and Human Remains Procedure must be prepared by a suitably qualified and experienced heritage specialist in consultation with the Heritage Council of NSW (with respect to non-Aboriginal cultural heritage) and in relation to Aboriginal cultural heritage, in accordance with the Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW 2010) and submitted to the Planning Secretary for information no later than one (1) month before the commencement of construction.	Annexure B	The requirements of this Condition are addressed in the Sydney Metro Unexpected Heritage Finds Procedure (SM-18-001105232) and summarised in the Aboriginal and Historic Heritage Unexpected Finds Workflow (Annexure B).
E36	The Unexpected Heritage Finds and Human Remains Procedure, as submitted to the Planning Secretary, must be implemented for the duration of construction. Where archaeological investigations have been undertaken as a result of Unexpected Finds notifications then a Final Archaeological Report must be provided in accordance with Heritage Council guidance and standard requirements for final reporting under Excavation Permits. Note: Human remains that are found unexpectedly during the carrying out of work may be under the jurisdiction of the NSW State Coroner and must be reported to the NSW Police	Annexure B	The requirements of this Condition are addressed in the Sydney Metro Unexpected Heritage Finds Procedure (SM-18-001105232) and summarised in the Aboriginal and Historic Heritage Unexpected Finds Workflow (Annexure B).

Ref	Description	Reference	How Addressed
	immediately. Management of human remains in NSW is subject to requirements set out in the Public Health Act 2010 (NSW) and Public Health Regulation 2012 (NSW). Nothing in these conditions prevents separate procedures for the Unexpected Heritage Finds and Human Remains Procedure.		
E38	Work must only be undertaken during the following hours: (a) 7:00am to 6:00pm Mondays to Fridays, inclusive; (b) 8:00am to 1:00pm Saturdays; and (c) at no time on Sundays or public holidays.	Section 2.7	The requirements of this condition are addressed in Section 2.7 and the Noise and Vibration Management Sub-Plan.
E39	Except as permitted by an EPL or approved in accordance with the Out-of-Hours Works Protocol required by Condition E42, highly noise intensive work that result in an exceedance of the applicable NML at the same receiver must only be undertaken: (a) between the hours of 8:00 am to 6:00 pm Monday to Friday; (b) between the hours of 8:00 am to 1:00 pm Saturday; and (c) if continuously, then not exceeding three (3) hours, with a minimum cessation of work of not less than one (1) hour. For the purposes of this condition, 'continuously' includes any period during which there is less than one (1) hour between ceasing and recommencing any of the work.	Section 2.7	The requirements of this condition are addressed in Section 2.7 and the Noise and Vibration Management Sub-Plan.
E40	This approval does not permit blasting.	Noise and Vibration Management Sub-Plan	The requirements of this condition are addressed in the Noise and Vibration Management Sub-Plan.
E41	Notwithstanding Conditions E38 and E39 work may be undertaken outside the hours specified in the following circumstances: (a) Safety and Emergencies, including:	Section 2.7	The requirements of this condition are addressed in Section 2.7 and the Noise and Vibration Management Sub-Plan.

Ref	Description	Reference	How Addressed
	(i) for the delivery of materials required by the NSW Police Force or other authority for safety reasons; or (ii) where it is required in an emergency to avoid injury or the loss of life, to avoid damage or loss of property or to prevent environmental harm; or (b) Low impact, including: (i) construction that causes LAeq(15 minute) noise levels: • no more than 5 dB(A) above the rating background level at any residence in accordance with the ICNG, and • no more than the 'Noise affected' NMLs specified in Table 3 of the ICNG at other sensitive land user(s); and (ii) construction that causes: • continuous or impulsive vibration values, measured at the most affected residence are no more than the preferred values for human exposure to vibration, specified in Table 2.2 of Assessing Vibration: a technical guideline (DEC, 2006), or • intermittent vibration values measured at the most affected residence are no more than the preferred values for human exposure to vibration, specified in Table 2.4 of Assessing Vibration: a technical guideline (DEC, 2006); or (c) By Approval, including: (i) where different construction hours are permitted or required under an EPL in force in respect of the CSSI; or (ii) works which are not subject to an EPL that are approved under an Out-of-Hours Work Protocol as required by Condition E42; or (iii) negotiated agreements with directly affected residents and sensitive land user(s); or (d) By Prescribed Activity, including: (i) tunnelling and ancillary support activities (excluding cut and cover tunnelling and surface works not directly supporting tunneling) are permitted 24 hours a day, seven days a week; or		

Ref	Description	Reference	How Addressed
	(ii) grout batching at the Orchard Hills construction site is permitted 24 hours per day, seven days per week; or (iii) delivery of material that is required to be delivered outside of standard construction hours in Condition E38 to directly support tunnelling activities, except between the hours 10:00 pm and 7:00 am to / from the Orchard Hills ancillary facility; or (iv) haulage of spoil generated through tunnelling is permitted 24 hours per day, seven days per week except between the hours of 10:00 pm and 7:00 am to / from the Orchard Hills construction site; or (v) works within an acoustic enclosure are permitted 24 hours a day, seven days a week where there is no exceedance of noise levels or intermittent vibration levels under Low impact circumstances identified in Condition E41(b), unless otherwise agreed with the Planning Secretary; or (vi) tunnel and underground station box fit out works are permitted 24 hours per day, seven days per week. On becoming aware of the need for emergency work in accordance with (a)(ii) above, the ER, the Planning Secretary and the EPA must be notified of the reasons for such work. The Proponent must use best endeavours to notify as soon as practicable all noise and/or vibration affected sensitive land user(s) of the likely impact and duration of those work. Notes: 1. Tunnelling does not include station box excavation. 2. Tunnelling ancillary support activities includes logistics support and material handling and delivery		
E55	The Proponent must seek the advice of a heritage specialist on methods and locations for installing equipment used for vibration, movement and noise monitoring at Heritage items.	Section 6.6.5	Noise and vibration monitoring requirements, including seeking the advice of a heritage specialist on methods and locations for installing equipment at Heritage items, are addressed in Section 6.6.5.

Ref	Description	Reference	How Addressed
E82	The CSSI must be designed and constructed with the objective of minimising impacts to, and interference with third party property, and that such infrastructure and property is protected during construction.	Section 5.2 Section 7.4.2 Section 6.10	Minimising impacts to, and interference with third party property, will be achieved through the implementation of SEPs (Section 5.2), inspection activities (Section 7.4.2) These requirements are summarised in Section 6.10.
E83	The utilities and services (hereafter "services") potentially affected by construction must be identified to determine requirements for diversion, protection and / or support. Alterations to services must be determined by negotiation between the Proponent and the service providers. Disruption to services resulting from construction must be avoided, wherever possible, and advised to customers where it is not possible.	Section 6.10	Utilities and services potentially affected by the SBT Works will be identified through the Dial Before You Dig and Permit to Excavate process. Alterations to services will be determined in consultation with service providers and disruption will be avoided where possible.
E84	A suitably qualified and experienced person must undertake condition surveys of all buildings, structures, utilities and the like identified in the documents listed in Condition A1 and the further assessment carried out under mitigation measure GW1 of the Submissions Report as being at risk of damage before commencement of any work that could impact on the subject surface / subsurface structure. The results of the surveys must be documented in a Pre-construction Condition Survey Report for each item surveyed. Copies of Pre-construction Condition Survey Reports must be provided to the relevant owners of the items surveyed in the vicinity of the proposed work, and no later than one (1) month before the commencement of the work that could impact on the subject surface / subsurface structure.	Section 6.10	Condition surveys will be undertaken of all buildings, structures and utilities as being at risk of damage before commencement of SBT Works that could impact on the subject surface / subsurface structure. The results of the surveys will be documented in accordance with the requirements of this Condition and provided to the relevant owners no later than one month before the commencement of the relevant works.
E85	Condition surveys of all items for which condition surveys were undertaken in accordance with Condition E84 must be undertaken by a suitably qualified and experienced person after completion of the work identified in Condition E84. The results of the surveys must be documented in a Post-construction Condition Survey Report for each item surveyed. Copies of Post-construction Condition Survey Reports must be provided to the landowners of the items surveyed, and no later than three (3) months following the completion of the work that could impact on the subject surface / subsurface structure.	Section 6.10	Condition surveys for all items for which condition surveys were undertaken in accordance with Condition E84 will be undertaken on completion of the SBT Works. The requirements of this condition are addressed in Section 6.10.

Ref	Description	Reference	How Addressed
E86	The Proponent, where liable, must rectify any property damage caused directly or indirectly (for example from vibration or from groundwater change) by the work at no cost to the owner. Alternatively, the Proponent may pay compensation for the property damage as agreed with the property owner. Rectification or compensation must be undertaken within 12 months of completion of the work identified in Condition E84 unless another timeframe is agreed with the owner of the affected surface or sub-surface structure or recommended by the Independent Property Impact Assessment Panel (IPIAP).	Section 6.10	Where liable, CPBG will rectify or compensate property owners for any damage caused directly or indirectly by the SBT Works. The rectification or compensation will be undertaken within 12 months of completion of the works unless agreed with the property owner.
E88	An IPIAP must be established prior to tunnelling activities commencing. The Planning Secretary must be informed of the members of the IPIAP and must comprise geotechnical and engineering experts independent of the design and construction team. The IPIAP will be responsible for independently verifying condition surveys undertaken under Conditions E84 and E85, the resolution of property damage disputes and the establishment of ongoing settlement monitoring requirements.	Section 6.12.1	Sydney Metro will establish the IPIAP and notify the Planning Secretary of the members of the IPIAP. As detailed in Section 6.12.1, CPBG will provide the IPIAP with any information or documentation it requires to meet its obligations under this Approval.
E89	Either the affected property owner or the Proponent may refer unresolved disputes arising from potential and/or actual property impacts to the IPIAP for resolution. All costs incurred in the establishing and implementing of the panel must be borne by the Proponent regardless of which party makes a referral to the IPIAP. The findings and recommendations of the IPIAP are final and binding on the Proponent.	Section 6.12.1	The requirements of this condition are addressed in Section 6.12.1.
E90	Settlement must be monitored for any period beyond the minimum timeframe requirements of Condition E87 if directed so by the IPIAP following its review of the monitoring data from the period not less than six (6) months after settlement has stabilised, consistent with Condition E87. The results of the monitoring must be made available to the Planning Secretary upon request.	Section 6.12.2	The requirements of this condition are addressed in Section 6.12.2.
E91	Small Business Owners Engagement Plan(s) must be prepared for St Marys and implemented in accordance with the Overarching Community Communication Strategy to minimise impact on small businesses directly affected by construction activities at St Marys during construction. The plan must be prepared and submitted to the Planning Secretary for information before the commencement of construction at St Marys.	Section 7.7	The Small Business Owners Engagement Plan has been prepared and will be implemented in accordance with the Communication Strategy. The plan was submitted to the Planning Secretary prior to commencement of construction at St Marys.

Ref	Description	Reference	How Addressed
E100	A Sustainability Plan must be prepared to achieve an Infrastructure Sustainability Council of Australia (ISCA) Infrastructure Sustainability rating of +75 (Version 1.2) (or equivalent level of performance using a demonstrated equivalent rating tool) or a 5-Star Green Star rating (or equivalent level of performance using a demonstrated equivalent rating tool).	Sustainability Management Plan (SMWSASBT-CPG-1NL-EV-PLN-000001)	The requirements of this Condition are addressed in the Sustainability Management Plan (SMWSASBT-CPG-1NL-EV-PLN-000001).
E101	The Sustainability Plan must be submitted to the Planning Secretary for information within six (6) months of the date of this approval and must be implemented throughout construction and operation. Note: Nothing in this condition prevents the Proponent from preparing separate Sustainability Strategies for the construction and operational stages of the CSSI.	N/A	Sydney Metro is responsible for satisfying the requirements of this condition.
E102	A Water Reuse Strategy must be prepared, which sets out options for the reuse of collected stormwater and groundwater during construction and operation. The Water Reuse Strategy must include, but not be limited to: (a) evaluation of reuse options; (b) details of the preferred reuse option(s), including volumes of water to be reused, proposed reuse locations and/or activities, proposed treatment (if required), and any additional licences or approvals that may be required; (c) measures to avoid misuse of recycled water as potable water; (d) consideration of the public health risks from water recycling; and (e) time frame for the implementation of the preferred reuse option(s). The Water Reuse Strategy must be prepared based on best practice and advice sought from relevant agencies, as required. The Strategy must be applied during construction. Justification must be provided to the Planning Secretary if it is concluded that no reuse options prevail. A copy of the Water Reuse Strategy must be made publicly available.	Section 6.4	The requirements of this Condition are addressed in Section 6.4.

Ref	Description	Reference	How Addressed
	Note: Nothing in this condition prevents the Proponent from preparing separate Water Reuse Strategies for the construction and operational stages of the CSSI.		
E104	The locations of all Heavy Vehicles used for spoil haulage must be monitored in real time and the records of monitoring be made available electronically to the Planning Secretary and the EPA upon request for a period of no less than one (1) year following the completion of construction.	Section 6.2.3 Spoil Management Sub-Plan	The requirements of this Condition are addressed in Section 6.2.3 and the Spoil Management Sub-Plan.
E105	Local roads proposed to be used by Heavy Vehicles to directly access ancillary facilities / construction sites that are not identified in the documents listed in Condition A1 must be approved by the Planning Secretary and be included in the CTMP.	Section 6.2.3	The requirements of this Condition are addressed in Section 6.2.3.
E106	All requests to the Planning Secretary for approval to use local roads under Condition E105 above must include the following: (a) a swept path analysis; (b) demonstration that the use of local roads by Heavy Vehicles for the CSSI will not compromise the safety of pedestrians and cyclists of the safety of two-way traffic flow on two-way roadways; (c) details as to the date of completion of the road dilapidation surveys for the subject local roads; and (d) measures that will be implemented to avoid where practicable the use of local roads past schools, aged care facilities and child care facilities during their peak operation times; and (e) written advice from an appropriately qualified professional on the suitability of the proposed Heavy Vehicle route which takes into consideration items (a) to (d) of this condition.	Section 6.2.3	The requirements of this Condition are addressed in Section 6.2.3.
E107	Before any local road is used by a Heavy Vehicle for the purposes of construction of the CSSI, a Road Dilapidation Report must be prepared for the road. A copy of the Road Dilapidation Report must be provided to the Relevant Road Authority(s) within three (3) weeks of completion of the survey and at no later than one (1) month before the road being used by Heavy Vehicles associated with the construction of the CSSI.	Section 6.10	The requirements of this Condition are addressed in Section 6.10.

Ref	Description	Reference	How Addressed
E108	If damage to roads occurs as a result of the construction of the CSSI, the Proponent must either (at the Relevant Road Authority's discretion): (a) compensate the Relevant Road Authority for the damage so caused; or (b) rectify the damage to restore the road to at least the condition it was in pre-work as identified in the Road Dilapidation Report.	Section 6.10	The requirements of this Condition are addressed in Section 6.10.
E109	Vehicles associated with the project workforce (including light vehicles and Heavy Vehicles) must be managed to: (a) minimise parking on public roads; (b) minimise idling and queueing on state and regional roads; (c) not carry out marshalling of construction vehicles near sensitive use (s); (d) not block or disrupt access across pedestrian or shared user paths at any time unless alternate access is provided; and (e) ensure spoil haulage vehicles adhere to the nominated haulage routes identified in the CTMP.	Section 6.2.2	The requirements of this Condition are addressed in Section 6.2.2.
E110	Access to all utilities and properties must be maintained during works, unless otherwise agreed with the relevant utility owner, landowner or occupier.	Section 6.2.4	The requirements of this Condition are addressed in Section 6.2.4.
E111	The Proponent must maintain access to properties during the entirety of works unless an alternative access is agreed in writing with the landowner(s) whose access is impacted by the CSSI works.	Section 6.2.4	The requirements of this Condition are addressed in Section 6.2.4.
E112	Where construction of the CSSI restricts a property's access to a public road, the Proponent must, until their primary access is reinstated, provide the property with temporary alternate access to an agreed road decided through consultation with the landowner, at no cost to the property landowner, unless otherwise agreed with the landowner.	Section 6.2.4	The requirements of this Condition are addressed in Section 6.2.4.
E113	Any property access physically affected by the CSSI must be reinstated to at least an equivalent standard, unless otherwise agreed by the landowner or occupier. Property access	Section 6.2.4	The requirements of this Condition are addressed in Section 6.2.4.

Ref	Description	Reference	How Addressed
	must be reinstated within one (1) month of the work that physically affected the access is completed or in any other timeframe agreed with the landowner or occupier.		
E114	During construction, all reasonably practicable measures must be implemented to maintain pedestrian, cyclist and vehicular access to, and parking in the vicinity of, businesses and affected properties. Disruptions are to be avoided, and where avoidance is not possible, minimised. Where disruption cannot be minimised, alternative pedestrian, cyclist and vehicular access, and parking arrangements must be developed in consultation with affected businesses and landowners and implemented before the disruption. Adequate signage and directions to businesses must be provided before, and for the duration of, any disruption.	Section 6.2.4	The requirements of this Condition are addressed in Section 6.2.4
E115	Safe pedestrian and cyclist access must be maintained around the St Marys construction site during construction. In circumstances where pedestrian and cyclist access is restricted or removed due to construction activities, a proximate alternate route which complies with the relevant standards, must be provided and signposted before the restriction or removal of the impacted access.	Section 6.2.4	The requirements of this Condition are addressed in Section 6.2.4.
E116	A Traffic and Transport Liaison Group(s) must be established in accordance with the Construction Traffic Management Framework to inform the development of CTMP.	Section 6.2.1	The requirements of this Condition are addressed in Section 6.2.1.
E117	Supplementary analysis and modelling as required by TfNSW and / or the Traffic and Transport Liaison Group(s) must be undertaken to demonstrate that construction and operational traffic can be managed to minimise disruption to traffic network operations including changes to and the management of pedestrian, bicycle and public transport networks, public transport services, and pedestrian and cyclist movements. Revised traffic management measures must be incorporated into the CTMP. Permanent road works included in the CSSI must be designed, constructed and operated with the objective of integrating with existing and proposed road and related transport networks and minimising adverse changes to the safety, efficiency and, accessibility of the network. Design and assessment of related traffic, parking, pedestrian and cycle accessibility impacts and changes shall be undertaken: a) in consultation with, and to the reasonable requirements of the relevant Traffic and Transport Liaison Group;	Section 6.2.6	The requirements of this Condition are addressed in Section 6.2.6.

Ref	Description	Reference	How Addressed
	b) in consideration of existing and future demand, connectivity (in relation to permanent changes), performance and safety requirements; c) to minimise and manage local area traffic impacts; d) to, where possible and appropriate, retain or reinstate parking in St Marys; e) to ensure access is maintained to property and infrastructure f) to address relevant design, engineering and safety guidelines, including Austroads, Australian Standards and TfNSW requirements. Copies of civil, structural and traffic signal design plans shall be submitted to the Relevant Road Authority for consultation during design development and before completion of construction of the CSSI.		
E119	Permanent road works, including vehicular access, signalised intersection works, and works relating to pedestrians, cyclists, and public transport users must be subject to safety audits demonstrating consistency with relevant design, engineering and safety standards and guidelines. Safety audits must be prepared in consultation with the relevant Traffic and Transport Liaison Group before the completion and use of the subject infrastructure and must be made available to the Planning Secretary upon request.	Section 6.2.7	The requirements of this Condition are addressed in Section 6.2.7.
E120	The CSSI must be designed and constructed with the objective of minimising impacts to, and interference with utilities infrastructure, and that such infrastructure and property is protected during construction. Utilities, services and other infrastructure potentially affected by construction must be identified before works affecting the item, to determine requirements for access to, diversion protection, and / or support. The relevant owner(s) and / or provider(s) of services must be consulted to make suitable arrangements for access to diversion, protection, and / or support of the affected infrastructure as required. The Proponent must ensure that disruption to any service is minimised and be responsible for advising local residents and businesses affected before any planned disruption of service.	Section 5.2 Section 7.4.2 Section 6.10	Minimising impacts to, and interference with third party property, will be achieved through the implementation of SEPs (Section 5.2) and inspection activities (Section 7.4.2). Utilities and services potentially affected by the SBT Works will be identified through the Dial Before You Dig and Permit to Excavate process. Alterations to services will be determined in consultation with service providers and disruption will be avoided where possible. These requirements are summarised in Section 6.10.

Revised Environmental Management Measures

Ref	Description	Reference	How Addressed
T2	The Construction Traffic Management Plan for St Marys would be developed to ensure existing transport interchange infrastructure continues to operate effectively within the St Marys station precinct would be developed in consultation with the Traffic and Transport Liaison Group.	Section 6.2	The requirements of this REMM are addressed in Section 6.2.
T3	Coordination with Western Sydney Airport and Transport for NSW would be undertaken through the Traffic and Transport Liaison Group to manage potential cumulative construction traffic impacts with M12 Motorway and Elizabeth Drive.	Section 6.2	The requirements of this REMM are addressed in Section 6.2.
T4	Road Safety Audits would be carried out to address vehicular access and egress, and pedestrian, cyclist and public transport safety. Road Safety Audits would be carried out as per the guidelines outlined in Section 10 of the Construction Traffic Management Framework.	Section 6.2	The requirements of this REMM are addressed in Section 6.2.
T5	Maintain access for pedestrians and cyclists around construction sites as per the guidelines outlined in the Construction Traffic Management Framework. Appropriate signage and line marking would be provided to guide pedestrians and cyclists past construction sites and on the surrounding network to allow access to be maintained.	Section 6.2.4	The requirements of this REMM are addressed in Section 6.2.4.
T9	A construction worker car-parking strategy for St Marys would be prepared in consultation with Penrith City Council and Transport for NSW prior to the commencement of construction works. The strategy would seek to: • minimise overall demand for construction worker car-parking through initiatives such as use of other project construction worksites in combination with shuttle buses, car-pooling and encouraging the use of public transport • minimise potential use of on-street car-parking by construction workers The construction worker car-parking strategy would be implemented throughout construction.	Section 6.2.5	The requirements of this REMM are addressed in Section 6.2.5.
OT2	The project would be designed such that access to properties and existing infrastructure neighbouring the proposed stations would be maintained.	Section 6.2	The requirements of this REMM are addressed in Section 6.2.
NAH1	Potential moveable heritage items would be identified and assessed and a significant fabric salvage schedule would be prepared by an appropriately qualified and experienced heritage specialist for St Marys Railway Station, Bringelly RAAF Base, McGarvie-Smith Farm, and McMasters Farm.	Section 6.6.8	The requirements of this REMM are addressed in Section 6.6.8.

Ref	Description	Reference	How Addressed
	Significant fabric would only be salvaged if it can be salvaged in such a way that it can be reused and is likely to be able to be reused.		
NAH2	Heritage advice would be sought to develop solutions to manage potential ground movement impacts to the St Marys Goods Shed.	Section 6.6.7	The requirements of this REMM are addressed in Section 6.6.7.
NAH3	Archival recording of heritage items which would be impacted or that would have their setting altered, would be carried out in accordance with the NSW Heritage Office's *Photographic Recording of Heritage Items Using Film or Digital Capture* (2006). The following items would be archivally recorded: • St Marys Railway Station • Luddenham Road Alignment • McMaster Farm • McGarvie-Smith Farm • Kelvin Park Group (the State Heritage listed curtilage) • Bringelly RAAF Base.	Section 6.6.3	The requirements of this REMM are addressed in Section 6.6.3.
NAH5	Archaeological investigations would be undertaken in accordance with recommendations in the non-Aboriginal Archaeological Research Design.	Annexure F Section 6.6.4	The requirements of this REMM are addressed in the St Marys Archaeological Method Statement (Annexure F) and Section 6.6.4.
NAH6	The following heritage items would be monitored for potential vibration impacts during construction: a. St Marys Railway Station Group b. Queen Street Post-War Commercial Building c. St Marys Munitions Workers Housing d. McGarvie Smith Farm e. McMaster Farm.	Section 6.6.5	The requirements of this REMM are addressed in Section 6.6.5.
NAH7	If required, the St Marys Station jib crane would be temporarily relocated prior to construction that may impact on this item, safely stored and appropriately maintained and conserved before reinstatement. If relocation is required, a detailed methodology for the removal and reinstatement of the jib crane would be prepared in consultation with an appropriately qualified heritage advisor.	Section 6.6.7	The requirements of this REMM are addressed in Section 6.6.7.

Ref	Description	Reference	How Addressed
NAH9	If suspected human remains or unexpected items of potential heritage significance are discovered within the on-airport area, all activity would cease and the unexpected/chance finds requirements specified in the Western Sydney Airport European and Other Heritage Construction Environmental Management Plan would be followed.	N/A	The scope of this CEMP is limited to off-airport works and as such, the requirements of this REMM are not triggered.
ONAH1	Design development for the project would endeavour to minimise adverse impacts to heritage buildings, elements, fabric, and heritage significant settings and view lines that contribute to the overall heritage significance of heritage items.	Section 6.6.9	The requirements of this REMM are addressed in Section 6.6.9.
ONAH3	Consultation with the Heritage Council and with relevant stakeholders would occur for the design of works that have the potential to impact State significant items including St Marys Railway Station.	Section 6.6.7	The requirements of this REMM are applicable to the design and construction of the St Marys Metro Station and Modifications to the St Marys Railway Station Group, which are not part of the SBT Works scope. If removal of the Jib Crane is required during SBT Works, provision has been made for consultation with Heritage Council in Section 6.6.7.
ONAH5	A conservation management plan would be prepared for St Marys Railway Station, in accordance with NSW Heritage Council guidelines. The plan would address any changes to the station, including updated assessment of significance of elements and recommendations on curtilage changes. It would also provide site specific exemptions and management policies.	Annexure G	The requirements of this REMM are applicable to the design and construction of the St Marys Metro Station and Modifications to the St Marys Railway Station Group, which are not part of the SBT Works scope. As such, this REMM is not triggered by the SBT Works.
ONAH6	Heritage inventory registers for heritage items modified by the project would be updated to document their change in condition following the completion of construction works for the project.	Annexure G	No changes to condition are proposed to listed heritage items. The Bringelly RAAF Base is not heritage listed and has no inventory which would require update. As such, the requirements of this REMM are not triggered by the SBT Works.
ONAH7	An appropriately qualified and suitably experienced heritage architect would be engaged to provide input into design development at St Marys Station.	Annexure G	The requirements of this REMM are applicable to the design and construction of the St Marys Metro Station and Modifications to the St Marys Railway

Ref	Description	Reference	How Addressed
			Station Group, which are not part of the SBT Works scope.
AH1	Aboriginal stakeholder consultation would continue to be carried out in accordance with the *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (NSW Office of Environment and Heritage, 2010). Registered Aboriginal Parties would be provided with opportunities to participate in survey and testing in unverified areas of Aboriginal archaeological sensitivity, archaeological salvage works and unexpected find assessments (if required).	Section 6.5	The requirements of this REMM are addressed in Section 6.5.
AH2	Areas of unverified Aboriginal archaeological sensitivity would be subject to archaeological survey, if required, and test excavation prior to construction in accordance with the Aboriginal Cultural Heritage Management Plan.	Section 6.5	Aboriginal archaeological surveys will be undertaken by Sydney Metro in accordance with the ACHMP.
AH5	All Aboriginal objects recovered from the construction footprint as a result of test excavation and salvage works would be appropriately secured and under the care of the archaeological consultant while options for their long-term management, as determined through consultation with Registered Aboriginal Parties, are being investigated.	Section 6.5	The requirements of this REMM are addressed in Section 6.5.
AH6	Aboriginal Heritage Information Management System site cards would be produced for all newly identified sites other than those identified on Commonwealth land. These should be submitted to the Aboriginal Heritage Information Management System Registrar as soon as practicable within one month of being identified. Newly identified sites within the boundaries of Defence Establishment Orchard Hills (Commonwealth land) would be reported to the Department of Defence to be managed in accordance with the relevant provisions of the Defence Establishment Orchard Hills Heritage Management Plan.	Section 6.5	The requirements of this REMM are addressed in Section 6.5.
AH7	Aboriginal Site Impact Recording forms for sites subject to archaeological salvage would be submitted to the Aboriginal Heritage Information Management System register within one month of the completion of salvage works within their bounds.	Section 6.5	The requirements of this REMM are addressed in Section 6.5.
AH8	If any suspected human remains or unexpected Aboriginal cultural heritage objects are discovered within the on-airport area, all activity would cease and the unexpected finds protocol and discovery of human remains protocol specified in the Western Sydney Airport Aboriginal Cultural Heritage Construction Environmental Management Plan would be followed.	N/A	The scope of this CEMP is limited to off-airport works and as such, the requirements of this REMM are not triggered.

Ref	Description	Reference	How Addressed
AH9	Works within the bounds of existing Aboriginal Heritage Impact Permit areas should be undertaken in accordance with the conditions of those permits and with permission from the relevant Aboriginal Heritage Impact Permit holder. Works undertaken on Defence Establishment Orchard Hills (Commonwealth land) should be undertaken in accordance with the Defence Establishment Orchard Hills Heritage Management Plan.	Section 6.5	The requirements of this REMM are addressed in Section 6.5.
AH10	Impacted Aboriginal Sites would be managed in accordance with the Aboriginal Cultural Heritage Management Plan.	Section 6.5	The requirements of this REMM are addressed in Section 6.5.
AH11	Aboriginal sites located outside of the construction footprint, but within 100m of it, would be clearly demarcated or sign posted to avoid potential impact.	Section 6.5	The requirements of this REMM are addressed in Section 6.5.
AH12	Reporting for all archaeological salvage works completed for the project would include: f. a minimum of one interim Aboriginal archaeological salvage report providing a summary of salvage works completed up to the reporting date, including the results of any post-excavation analyses completed. Interim results may be used to inform consistency assessments and Aboriginal heritage interpretation initiatives an Archaeological Salvage Report detailing the results of the archaeological salvage program (including the results of any post-excavation analyses) would be completed within one year of the completion of the fieldwork component of the program. The Archaeological Salvage Report would be consistent with the best practice guidelines suggested by the Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW (DECCW 2010b) and the Aboriginal Cultural Heritage Standards & Guidelines Kit (NSW NPWS 1997).	Section 6.5	The requirements of this REMM are addressed in Section 6.5.
AH13	Measures to manage and protect the identified cultural values would be developed collaboratively through a consultation process with knowledge holders to inform construction planning and design development.	Section 6.5	The requirements of this REMM are addressed in Section 6.5.
GW1	Further assessment would be undertaken during design development, and prior to construction commencing, to ensure that damage to buildings and structures at risk of ground movement impacts around St Marys, Claremont Meadows, Orchard Hills and Bringelly are avoided or managed.	Section 6.12.2	The requirements of this condition are addressed in Section 6.12.2.

Ref	Description	Reference	How Addressed
	Where building damage risk is rated as slight, moderate or high (as per Rankin 1988), a structural assessment of the affected buildings/structures would be carried out and specific measures implemented to address the risk of damage.		
GW2	Further assessment of road and rail infrastructure and utility assets (including the Warragamba to Prospect Water Supply Pipelines) considered to be at risk from ground movement would be undertaken during design development. Consultation would be undertaken with the infrastructure and asset owners in each case to determine appropriate ground movement criteria for the assessment and, if required, to agree management measures to manage potential impacts.	Section 6.12.2	The requirements of this condition are addressed in Section 6.12.2.
GW3	Further assessment of potential ground movement impacts on the Goods Shed building at St Marys Station, including a building condition survey, would be carried out during design development and prior to the commencement of construction. The assessment would be carried out in consultation with a suitably qualified heritage architect and would identify acceptable ground movement criteria and, if required, feasible measures to reduce or mitigate the effects of ground movement on this structure, Ground movement in the vicinity of the Goods Shed and the condition of the Goods Shed building would be monitored during construction A dilapidation survey of the Goods Shed would be carried out prior to work commencing in the vicinity of the building. At the completion of construction, should there be any damage to the building which is determined to be as a result of the project construction works, the building would be repaired in consultation with a suitably qualified heritage architect.	Section 6.6.7	The requirements of this condition are addressed in Section 6.6.7.
LU2	Where required property adjustments have the potential to impact farm infrastructure (such as fencing or dams) or local access to properties. Consultation with affected property owners would be carried out prior to these works occurring, in order to determine reasonable, feasible and acceptable solutions.	Section 7.7 Communication Strategy	The requirements of this REMM are addressed in the Communication Strategy.
LU3	Where a property would be potentially fragmented by the construction corridor, access to properties would be maintained, in consultation with the landowner(s).	Section 6.2	The requirements of this REMM are addressed in Section 6.2.
OLU1	Where a property would be potentially fragmented by the rail corridor, access to properties would be provided. The location of access to be provided would be agreed in consultation with the landowner(s).	Section 6.2	The requirements of this REMM are addressed in Section 6.2.

Ref	Description	Reference	How Addressed
SE1	Consultation with the local community and project stakeholders would be undertaken to: • identify and deliver opportunities for facilitating local creative and cultural activities in appropriate project locations • identify and deliver initiatives and opportunities to provide a positive contribution to the potentially affected community and affected locations such as temporary public art and targeted community events and programs.	Section 7.7 Communication Strategy	The requirements of this REMM are addressed in the Communication Strategy.
SE3	Where partial property acquisition has been identified, undertake property liaison and consultation activities to minimise disruption to property owners and activities on impacted sites.	Section 7.7 Communication Strategy	The requirements of this REMM are addressed in the Communication Strategy.
AQ1	The Air Quality Management Plan for the project would incorporate the following best-practice odour management measures would be implemented during relevant construction works: • the extent of opened and disturbed contaminated soil at any given time would be minimised • temporary coverings or odour supressing agents would be applied to excavated areas where appropriate • regular odour monitoring would be conducted during excavation to verify that no offensive odours are being generated.	Annexure B	The requirements of this REMM are addressed in the Air Quality Management Procedure and Monitoring Program.
AQ2	Where acoustic sheds are proposed these would be designed and managed to prevent/minimise the escape of dust emissions.	Annexure B	The requirements of this REMM are addressed in the Air Quality Management Procedure and Monitoring Program.
HR2	A Bushfire Management Plan would be prepared and implemented to manage current bushfire risk and identify response actions during construction of the project. The Plan would be prepared in consultation with the NSW Rural Fire Service and Western Sydney Airport. For project areas within Western Sydney International the Plan would be prepared having regard to the existing Western Sydney Airport Site at Badgerys Creek Bushfire Risk Management Plan (Western Sydney Airport Corporation, 2019).	Annexure G	As part of the Emergency Response Plan (SMWSASBT-CPG-1NL-NL000-SF-PLN-00004), a Bushfire Management Plan will be prepared and implemented in accordance with the requirements of this REMM.
HR3	A hazardous materials analysis would be carried out prior to stripping and demolition of structures and buildings which are suspected of containing hazardous materials (particularly asbestos).	Section 6.9	A hazardous materials analysis will be undertaken prior to commencement of stripping and

Ref	Description	Reference	How Addressed
	Hazardous materials and special waste (such as asbestos) would be removed and disposed of in accordance with the relevant legislation, codes of practice and Australian Standards (including the Work Health and Safety and Regulation 2011 (NSW)).		demolition works (Section 6.9). Disposal of materials will be undertaken in accordance with the Waste and Recycling Management Sub-Plan.
CL1	A Cumulative Construction Impacts Management Plan would be developed and would detail co-ordination and consultation requirements with the following stakeholders (as relevant) to manage the interface of projects under construction at the same time: • Western Sydney Airport • Transport for NSW • Western Parkland City Authority • Sydney Water • Emergency service providers • Utility providers Co-ordination and consultation requirements with these stakeholders would be detailed in the plan to include: • provision of regular updates to the detailed construction program, construction sites and haul routes • identification of key interfaces with other construction projects • development of mitigation strategies to manage cumulative impacts associated with these interfaces.	Section 6.11	The Cumulative Construction Impacts Management Plan will be prepared by Sydney Metro. As detailed in Section 6.11, CPBG will undertake the SBT Works in accordance with the Cumulative Construction Impacts Management Plan.

EIS Performance Outcomes

Environmental Performance Objective Topic	Environmental Performance Objective	Reference	How Addressed
Design, place and movement Supporting the provision of successful places - the project is integrated with and enhances the environment where it is located, including improved accessibility and connectivity for communities.	The Applicable – Western Sydney Airport Design Guidelines and Design Quality Framework are implemented to deliver a rail corridor, stations and ancillary facilities that achieve the project vision and design objectives.	Design Management Plan	The requirements of this performance outcome will be captured in the Design Management Plan.
	Design excellence is exhibited in the project to complement the anticipated character of the precincts in which the project is located.		
	Accessibility and connectivity between future communities is supported by the project through opportunities to integrate with key project components such as stations.		
Transport Network connectivity, safety and efficiency of the transport system in the vicinity of the project are managed to minimise impacts. The safety of transport system customers is maintained Impacts on network capacity and the level of service are effectively managed.	Safe and efficient routes are provided for pedestrians, cyclists and road users at/near construction sites.	Section 6.2	The requirements of this performance outcome are addressed in Section 6.2 and Site-specific Construction Traffic Management Plans.
	Access to the existing St Marys Station is maintained while train services are operating.		
	Safe access to properties and businesses is maintained during construction, unless alternatives are agreed with property owners and businesses.		
	Heavy vehicles access the arterial network as soon as practicable on route to, and immediately after leaving, a construction site.		
	The local community and relevant authorities are informed of transport, access and parking changes/impacts to minimise inconvenience to the public.		
	Safe and efficient interchanges are provided between transport modes.		

Environmental Performance Objective Topic	Environmental Performance Objective	Reference	How Addressed
Works are compatible with existing infrastructure and future transport corridors	The project is designed to be compatible with existing infrastructure and future transport corridors.		
Noise and Vibration – Structural Construction noise and vibration (including airborne noise, groundborne noise and blasting) is effectively managed to minimise adverse impacts on acoustic amenity. Construction noise and vibration (including airborne noise, groundborne noise and blasting) are effectively managed to minimise adverse impacts on the structural integrity of buildings and items including Aboriginal places and environmental heritage	Construction noise and vibration impacts on local communities (including airborne noise and ground-borne noise and vibration) are managed in accordance with the Construction Noise and Vibration Standard, the Interim Construction Noise Guideline, and the Airports (Environment Protection) Regulations 1997	Noise and Vibration Management Sub-Plan	The requirements of this performance outcome are included in the Noise and Vibration Management Sub-Plan.
	Structural damage to buildings, heritage items and public utilities and infrastructure, including the Warragamba to Prospect Water Supply Pipelines, from construction vibration to be avoided		
Biodiversity The project design considers all feasible measures to avoid and minimise impacts on terrestrial and aquatic biodiversity	Minimise or where possible avoid impacts on threatened flora and fauna species, and ecological communities listed under the Biodiversity Conservation Act 2016 (NSW) and Environment Protection and Biodiversity Conservation Act 1999 (Cth).	Flora and Fauna Management Sub-Plan	The requirements of this performance outcome are addressed in the Flora and Fauna Management Sub-Plan.
	Manage groundwater drawdown at Orchard Hills to avoid or minimise impacts on groundwater dependent ecosystems	Flora and Fauna Management Sub-Plan Groundwater Monitoring Program	The requirements of this performance outcome are addressed in the Flora and Fauna Management Sub-Plan and the Groundwater Monitoring Program (Annexure A of the Soil and Water Management Sub-Plan.

Environmental Performance Objective Topic	Environmental Performance Objective	Reference	How Addressed
	Re-establish native vegetation in accordance with the National Airports Safeguarding Framework Principles and Guidelines including Guideline C: Managing the Risk of Wildlife Strikes in the Vicinity of Airports (Australian Government, 2014)	Flora and Fauna Management Sub-Plan	The requirements of this performance outcome are addressed in the Flora and Fauna Management Sub-Plan.
	Impacts on threatened ecological communities and threatened species are offset in accordance with the requirements of the NSW Biodiversity Assessment Method (OEH, 2017)	Flora and Fauna Management Sub-Plan	The requirements of this performance outcome are addressed in the Flora and Fauna Management Sub-Plan.
Non-Aboriginal Heritage The design, construction and operation of the project facilitates, to the greatest extent possible, the long term protection, conservation and management of the heritage significance of items of environmental heritage. The design, construction and operation of the project avoids or minimises impacts, to the greatest extent possible, on the heritage significance of environmental heritage.	Impacts on the State heritage significant St Marys Railway Station Group are avoided or minimised so that the overall heritage value of the item is maintained.	Section 6.6 Annexure F	The requirements of this performance outcome are addressed in Section 6.6 and the St Marys Archaeological Method Statement (Annexure F).
	Impacts on non-Aboriginal heritage items and archaeology are minimised or where possible avoided.		
	The design of St Marys Station is sympathetic to retained and adjacent heritage items.		
Aboriginal Heritage The design, construction and operation of the project facilitates, to the greatest extent possible, the long term protection, conservation and management of the heritage significance of items of Aboriginal objects and places. The design, construction and operation of the	The heritage significance of Aboriginal objects and places are protected, conserved and/or managed in order to ensure the project does not diminish the story and cultural understanding associated with the objects and places of Aboriginal people in New South Wales.	Section 6.5	The requirements of this performance outcome are addressed in Section 6.5.
	Impacts on areas of archaeological sensitivity and significance are avoided or minimised, where practical.		

Environmental Performance Objective Topic	Environmental Performance Objective	Reference	How Addressed
project avoids or minimises impacts, to the greatest extent possible, on the heritage significance of Aboriginal objects and places.			
Flooding, Hydrology and Water Quality The project minimises adverse impacts on flooding characteristics Construction and operation of the project avoids or minimises the risk of, and adverse impacts from, infrastructure flooding, flooding hazards, or dam failure. Long term impacts on surface water and groundwater hydrology (including drawdown, flow rates and volumes) are minimised.	Land and property beyond the construction footprint would not be impacted by construction for the 0.5 Exceedances per Year (EY) storm event.	Section 6.8	The requirements of this performance outcome are addressed in Section 6.8.
	No aspect of construction to materially adversely affect existing water quality in receiving waters to a minimum 0.5 EY storm event, or in line with the 'Blue Book' (Managing Urban Stormwater: Soils & Construction Volume 1 (Landcom, 2004))		
	No material change to channel shape within the construction footprint for the 0.5 EY storm event for streams classified first order and higher.		
The environmental values of nearby, connected and affected water sources, groundwater and dependent ecological systems including estuarine and marine water (if applicable) are maintained (where values are achieved) or improved and maintained (where values are not achieved). Sustainable use of water resources. The project is designed, constructed and operated to protect	Water discharged from the project, including runoff from hardstand areas, surface and ground water storages would: • contribute towards achieving ANZECC guideline water quality trigger values for physical and chemical stressors for slightly disturbed ecosystems in lowland rivers in southeast NSW, or • meet any water quality criteria determined in consultation with the NSW Environment Protection Authority (off-airport) where an EPL is required or in consultation with Western Sydney Airport in accordance with the Airports (Environmental Protection) Regulations 1997 (on-airport).	Soil and Water Management Sub-Plan Design Management Plan	The requirements of this performance outcome are addressed in the Soil and Water Management Sub-Plan and the Design Management Plan.
	Drainage from the project (including the stabling and maintenance facility, service facilities and stations) designed in accordance with		

Environmental Performance Objective Topic	Environmental Performance Objective	Reference	How Addressed
the NSW Water Quality Objectives where they are currently being achieved, and contribute towards achievement of the Water Quality Objectives over time where they are currently not being achieved, including downstream of the project to the extent of the project impact including estuarine and marine waters (if applicable).	local council requirements for managing urban stormwater quality and quantity		
	No change to flood hazard vulnerability classification limits for residential and commercial buildings or roads.		
Groundwater and geology Long term impacts on surface water and groundwater hydrology (including drawdown, flow rates and volumes) are minimised.	Structural damage to buildings, heritage items and public utilities and infrastructure, including the Warragamba to Prospect Water Supply Pipelines, from ground movement to be avoided.	Soil and Water Management Sub-Plan	The requirements of this performance outcome are addressed in the Soil and Water Management Sub-Plan.
Soils and contamination The environmental values of land, including soils, subsoils and landforms, are protected. Risks arising from the disturbance and excavation of land and disposal of soil are minimised, including disturbance to acid sulfate soils and site contamination.	Contamination risks to human health and ecological receivers are minimised through effective management of existing contaminated land.	Soil and Water Management Sub-Plan	The requirements of this performance outcome are addressed in the Soil and Water Management Sub-Plan.
	Contaminated land and soil within the footprint of the project is remediated where required, to ensure the land is suitable for the intended future land use.		
Sustainability, climate change and greenhouse gas The project reduces the NSW Government's operating costs and	The project achieves a minimum 'Design' and 'As built' rating score of Leading +75, using the Infrastructure Sustainability Council of Australia Infrastructure Sustainability Rating Scheme Version 1.2 or equivalent	Sustainability Plan	The requirements of this performance outcome are addressed in the Sustainability Plan (refer to Condition 100).

Environmental Performance Objective Topic	Environmental Performance Objective	Reference	How Addressed
ensures the effective and efficient use of resources Conservation of natural resources is maximised.	Sustainability initiatives are incorporated into the planning, design and construction of the project		
	25 per cent of the greenhouse gas emissions associated with consumption of electricity during construction are offset		
The project is designed, constructed and operated to be resilient to the future impacts of climate change	The project is designed to withstand known impacts associated with climate change to year 2100		
Resource management Conservation of natural resources is maximised.	100 per cent of useable spoil is reused in accordance with the spoil reuse hierarchy.	Waste and Recycling Management Sub-Plan	The requirements of this performance outcome are addressed in the Waste and Recycling Management Sub-Plan.
	A minimum 95 per cent recycling target is achieved for construction and demolition waste.		
	Products made from recycled content are prioritised.		
	The use of potable water for non-potable purposes is avoided if non-potable water is available.		
	The reuse of water is maximised, either on-site or off-site.		

Sydney Metro Construction Environmental Management Framework

Ref	Section	Description	Reference
3.1(a)	Environmental and Sustainability Management System	Principal Contractors are required to have a corporate Environmental Management System certified under AS/NZS ISO 14001:2016.	Section 7
3.1(b)	Environmental and Sustainability Management System	Principal Contractors are required to develop a project based Environment and Sustainability Management System (E&SMS). The E&SMS will: i. Be consistent with the Principal Contractors corporate Environmental Management System and AS/NZS ISO 14001:2016; ii. Be supported by a process for identifying and responding to changing legislative or other requirements; iii. Include processes for assessing design or construction methodology changes for consistency against the planning approvals; iv. Include processes for tracking and reporting performance against sustainability and compliance targets; v. Include a procedure for the identification and management of project specific environmental risks and appropriate control measures; and vi. Be consistent with the Sydney Metro – Western Sydney Airport Sustainability Plan and the Sydney Metro Environment and Sustainability Statement of Commitment.	Section 7
3.1 (c)	Environmental and Sustainability Management System	All sub-contractors engaged by the Principal Contractor will be required to work under the Principal Contractor's Environment and Sustainability Management System.	Section 5.6
3.1 (d)	Environmental and Sustainability Management System	The relationship between the Sydney Metro Environment and Sustainability Management System and the Principal Contractor's Environment and Sustainability Management System is shown in Figure 1.	Noted
3.2(a)	Sustainability Management Plan	Principal Contractors are required to prepare and implement a Sustainability Management Plan (SMP) relevant to the scale and nature of the Project Works.	Sustainability Management Plan (SMWSASBT-CPG-1NL-EV-PLN-000001)

Ref	Section	Description	Reference
3.2(b)	Sustainability Management Plan	The SMP must, as a minimum, address and detail [the requirements listed in Section 3.2b of the CEMF].	Sustainability Management Plan (SMWSASBT-CPG-1NL-EV-PLN-000001)
3.3(a)	Construction Workforce Development and Industry Participation Plan	The Workforce Development and Industry Participation Plan will address and detail: i. The proposed response to State and Commonwealth requirements including but not limited to: o NSW Aboriginal Participation in Construction Policy o NSW Infrastructure Skills Legacy Program o Australian Jobs Act – Australian Industry Participation Plan o Western Sydney City Deal ii. Indigenous Participation Plan – National Partnerships Agreement Proposed appropriately skilled key personnel to support delivery of the workforce development and industry participation requirements; iii. Implementation approach, processes and systems to ensure delivery and reporting of workforce development and industry participation priority areas: • Jobs and Industry Participation; • Skills Development; • Diversity and Inclusion including Aboriginal Participation; and • Inspiring Future Talent.	Workforce Development and Industry Participation Plan
3.4(a)	Construction Environmental Management Plan(s)	Sydney Metro will develop the Construction Environmental Management Plans (CEMPs) for the on-airport construction of the rail. These on-airport CEMPs will be developed in consultation with WSA and be consistent with existing WSA CEMPs. Figure 2 displays the relationship between the planning documentation and the environmental documentation required for SMWSA.	On-airport works are outside of the scope of this CEMP.
3.4(b)	Construction Environmental Management Plan(s)	Sydney Metro will submit the on-airport CEMPs to the Commonwealth for approval. The approved SMWSA on-airport CEMPs will be implemented for all on-airport rail construction works and inform the Principal Contractor's environmental documentation where working on the airport site.	On-airport works are outside of the scope of this CEMP.

Ref	Section	Description	Reference
3.4 (c)	Construction Environmental Management Plan(s)	Principal Contractors are required to prepare and implement a Construction Environmental Management Plan (CEMP) relevant to the scale and nature of their off-airport scope of works. The CEMP shall comprise of a main CEMP document, issue specific sub plans, activity specific procedures and site based control maps. The CEMP shall illustrate the relationship between other plans required by the contract, in particular those that relate to design management. The CEMP will address the specific requirements of scope of works and address the off-airport environmental requirements.	This Plan
3.4 (d)	Construction Environmental Management Plan(s)	Depending on the scope and scale of the works, Sydney Metro may decide to streamline the CEMP and sub-plan requirements for off-airport works. For example, depending on the risk associated with particular environmental issues it may be appropriate to remove the need for a sub plan, or replace with a procedure as part of the CEMP. The CEMP and sub-plan requirements from this CEMF for each construction stage / contract will be detailed in the Staging Report / Construction (Rail) Plan for the project.	This Plan
3.4(e)	Construction Environmental Management Plan(s)	Environmental documentation prepared for works within the on-airport site will be in accordance with the approved SMWSA on-airport CEMPs.	On-airport works are outside of the scope of this CEMP.
3.4 (f)	Construction Environmental Management Plan(s)	The Principal Contractor CEMP will cover the requirements of the relevant planning approval documentation, the conditions of all other permits and licences, the Principal Contractor's corporate EMS, the environmental provisions of the contract documentation and this Construction Environmental Management Framework.	This Plan
3.4 (g)	Construction Environmental Management Plan(s)	As a minimum the Principal Contractor CEMP will: i. Include a contract specific environmental policy;	Annexure A
3.4 (g)	Construction Environmental Management Plan(s)	ii. Include a description of activities to be undertaken during construction;	Section 2.4.1
3.4 (g)	Construction Environmental Management Plan(s)	iii. For each plan under the CEMP include a matrix of the relevant SSI Conditions of Approval referencing where each requirement is addressed;	Annexure G

Ref	Section	Description	Reference
3.4 (g)	Construction Environmental Management Plan(s)	iv. For each plan under the CEMP, set objectives and targets, and identify measurable key performance indicators in relation to these;	Section 1.3
3.4 (g)	Construction Environmental Management Plan(s)	v. For each role that has environmental accountabilities or responsibilities, including key personnel, provide a tabulated description of the authority and roles of key personnel, lines of responsibility and communication, minimum skill level requirements and their interface with the overall project organisation structure;	Section 4
3.4 (g)	Construction Environmental Management Plan(s)	vi. Assign the responsibility for the implementation of the CEMP to the Environment Manager, who will have appropriate experience. The Principal Contractor's Project Director will be accountable for the implementation of the CEMP;	Section 4
3.4 (g)	Construction Environmental Management Plan(s)	vii. Identify communication requirements, including liaison with stakeholders and the community;	Section 4 Section 7.7
3.4 (g)	Construction Environmental Management Plan(s)	viii. Include induction and training requirements and a summary of the Training Needs Analysis required in Section 3.11(b);	Section 7.8
3.4 (g)	Construction Environmental Management Plan(s)	ix. Management strategies for environmental compliance and review of the performance of environmental controls;	Section 7.4 Section 7.13
3.4 (g)	Construction Environmental Management Plan(s)	x. Procedures for environmental inspections and monitoring, auditing and review, and reporting on environmental performance including environmental compliance tracking;	Section 5.5 Section 7.4.1 Section 7.4.2 Section 7.13
3.4 (g)	Construction Environmental Management Plan(s)	xi. Include an annual schedule for auditing the CEMP and Sub-Plans that is updated at least monthly;	Section 7.13.1

Ref	Section	Description	Reference
3.4 (g)	Construction Environmental Management Plan(s)	xii. Include procedures for emergency and incident management, non-compliance management, and corrective and preventative action; and	Section 7.4.3 Section 7.10 Annexure B
3.4 (g)	Construction Environmental Management Plan(s)	xii. Include procedures for the control of environmental records.	Section 7.12.1
3.4(h)	Construction Environmental Management Plan(s)	The Principal Contractor CEMP and associated sub-plans will be reviewed by Sydney Metro prior to any construction works commencing. For off-airport works approved under the CSSI, the independent environmental representative (see Section 3.13) will also review the CEMP.	Section 1.4
3.4 (i)	Construction Environmental Management Plan(s)	Where a corresponding systems document exists within the Sydney Metro Integrated Management System, the Principal Contractor's procedures will be required to be consistent with any requirements in those documents.	Annexure B
3.5(a)	Off-Airport Construction Environmental Management Sub-Plans	Subject to Section 3.4(b) the Principal Contractors will prepare issue-specific environmental sub plans to the CEMP which address each of the relevant environmental impacts at a particular site or stage of the project. Issue specific sub plans will include as a minimum: i. Spoil management; ii. Groundwater management; iii. Traffic and transport management; iv. Noise and vibration management; v. Heritage management; vi. Flora and fauna management; vii. Visual amenity management; viii. Soil and water management; ix. Air quality management; and	Section 6 Annexure B

Ref	Section	Description	Reference
		x. Waste management. Some of these sub plans may also be informed by other environmental management documents included in the planning approval, for example the Construction Traffic Management Framework or Construction Noise and Vibration Standard.	
3.5 (b)	Off-Airport Construction Environmental Management Sub-Plans	Additional detail on the minimum requirements for these sub plans is provided in Sections 6 to14 of this CEMF.	Noted.
3.6 (a)	Environmental Procedures and Control Maps	The Principal Contractor will prepare and implement activity specific environmental procedures. These procedures should supplement environmental management sub plans, but may substitute for sub plans in agreement with Sydney Metro if a reasonable risk based justification can be made and the sub plan is not a requirement of any approval.	Annexure B
3.6 (b)	Environmental Procedures and Control Maps	The procedures will include: i. A breakdown of the work tasks relevant to the specific activity and indicate responsibility for each task; ii. Potential impacts associated with each task; iii. A risk rating for each of the identified potential impacts; iv. Mitigation measures relevant to each of the work tasks; and v. Responsibility to ensure the implementation of the mitigation measures.	Annexure B
3.6 (c)	Environmental Procedures and Control Maps	The Principal Contractor will prepare and implement site based, progressive Environmental Control Maps (ECMs) which as a minimum: i. Depicting the current representation of the site; ii. Indicate which environmental procedures, environmental approvals, or licences are applicable; iii. Illustrate the site, showing significant structures, work areas and boundaries; iv. Illustrate the environmental control measures and environmentally sensitive receivers; v. Is endorsed by the Principal Contractors Environmental Manager or delegate;	Section 5.2

Ref	Section	Description	Reference
		vi. Include all the training and competency requirements for relevant workers; and. vii. Be communicated to relevant workers, including sign off the appropriate procedures prior to commencing works on the specific site and / or activity.	
3.7 (a)	Additional Environmental Assessments	Where the requirement for an additional environmental assessment is identified, this will be undertaken prior to undertaking any construction activities. The environmental assessment will include: i. A description of the existing surrounding environment; ii. Details of the ancillary works and construction activities required to be carried out including the hours of works; iii. An assessment of the environmental impacts of the works, including, but not necessarily limited to, traffic, noise and vibration, air quality, soil and water, ecology and heritage; iv. Details of mitigation measures and monitoring specific to the works that would be implemented to minimise environmental impacts; and v. Identification of the timing for completion of the construction works, and how the sites would be reinstated (including any necessary rehabilitation).	Section 7.12.3
3.8 (a)	Cumulative Impacts	A cumulative construction impacts management plan would be developed. The plan would detail co-ordination and consultation requirements with the following stakeholders (as relevant) would occur where required to manage the interface of projects under construction at the same time: i. Western Sydney Airport ii. Transport for NSW iii. Department of Planning, Industry and Environment iv. Western Parkland City Authority (and their contractors) v. Emergency service providers vi. Utility providers	Sydney Metro Cumulative Construction Impacts Management Plan Section 6.11
3.8 (b)	Cumulative Impacts	Co-ordination and consultation requirements with these stakeholders would be detailed in the plan to include: i. provision of regular updates to the detailed construction program, construction sites and haul routes	Sydney Metro Cumulative Construction

<table>
<tr><th>Ref</th><th>Section</th><th>Description</th><th>Reference</th></tr>
<tr><td></td><td></td><td>ii. identification of key interfaces with other construction projects
iii. Development of mitigation strategies to manage cumulative impacts associated with these interfaces.</td><td>Impacts Management Plan
Section 6.11</td></tr>
<tr><td>3.9 (a)</td><td>Condition Surveys</td><td>Prior to the commencement of construction the Principal Contractors are to offer Pre-construction Building Condition Surveys, in writing, to the owners of buildings where there is a potential for construction activities to cause any damage (regardless of severity). If accepted, the Principal Contractor will produce a comprehensive written and photographic condition report produced by an appropriate professional prior to relevant works commencing.</td><td>Section 6.10</td></tr>
<tr><td>3.9 (b)</td><td>Condition Surveys</td><td>Prior to the commencement of construction the Principal Contractor will prepare a Road Dilapidation Report for all local public roads proposed to be used by heavy vehicles. Dilapidation reports are to include other road infrastructure such as signs, curbs, applicable driveways and pedestrian paths.</td><td>Section 6.10</td></tr>
<tr><td>3.10 (a)</td><td>Register of Hold Points</td><td>Principal Contractors will identify hold points, beyond which approval is required to proceed with a certain activity. Example activities include vegetation removal and water discharge. Hold points will be documented in relevant CEMPs.</td><td>Section 5.4</td></tr>
<tr><td>3.10 (b)</td><td>Register of Hold Points</td><td>Table 1.4 provides the structure for the register of hold points as well as a preliminary list of hold points which will be implemented
<table>
<tr><th>Hold Point</th><th>Release of Hold Point</th><th>By Who</th></tr>
<tr><td>Prior to Vegetation Clearing / Ground Disturbance</td><td>Pre-clearing inspection
Erosion and sediment control plan</td><td>Qualified Ecologist
Contractor’s Environmental Manager or delegate</td></tr>
<tr><td>Discharge of water</td><td>Water tested to verify compliance and approval to discharge</td><td>Contractor’s Environment Manager or delegate</td></tr>
</table></td><td>Section 5.4</td></tr>
</table>

Ref	Section	Description			Reference
		Out of hours works	Noise Assessment	Contractor's Environment Manager	
		Use of local roads by heavy vehicles	Road Dilapidation Report	Appropriate Professional nominated by Principal Contractor	
		Construction identified as affecting buildings	Building Condition Survey	Appropriate Professional nominated by Principal Contractor	
3.11 (a)	Training, Awareness and Competence	Principal Contractors are responsible for determining the training needs of their personnel. As a minimum this will include site induction, regular toolbox talks and topic specific environmental training as follows: i. The site induction will be provided to all site personnel and will include, as a minimum: • Training purpose, objectives and key issues; • Contractor's environmental and sustainability policy(s) and key performance indicators; • Due diligence, duty of care and responsibilities; • Relevant conditions of any environmental licence and/or the relevant conditions of approval; • Site specific issues and controls including those described in the environmental procedures; • Reporting procedure(s) for environmental hazards and incidents; and • Communication protocols for interactions with community and stakeholders. ii. Toolbox talks will be held on a regular basis in order to provide a project or site wide update, including any key or recurring environmental issues; and iii. Topic specific environmental training should be based upon, but is not limited to, issue specific sub-plans required under Section 3.5 (a).			Section 7.8
3.11 (b)	Training, Awareness and Competence	Principal Contractors will conduct a Training Needs Analysis which: i. Identifies that all staff are to receive an environmental training;			Section 7.8

Ref	Section	Description	Reference
		ii. Identifies the competency requirements of staff that hold environmental roles and responsibilities documented within the Construction Environmental Management Plan and sub-plans; iii. Identifies appropriate training courses/events and the frequency of training to achieve and/or maintain these competency requirements; and iv. Implements and document as part of the CEMP a training schedule that plans attendance at environmental training events, provides mechanisms to notify staff of their training requirements, and identifies staff who do not attend scheduled training events or who have overdue training requirements.	
3.12 (a)	Emergency and Incident Response	Principal Contractors undertaking off-airport work in accordance with an EPL must develop and implement a Pollution Incident Response Management Plan, in accordance with the requirements of the POEO Act. Contractor's emergency and incident response procedures will also be consistent with any relevant Sydney Metro procedures and, for on-airport works, consistent with the environmental incident and emergency management requirements identified in the Western Sydney Airport Site Environmental Management Framework, and will include: i. Categories for environmental emergencies and incidents; ii. Notification protocols for each category of environmental emergency or incident, including notification to Sydney Metro, WSA (where required for on-airport works) and notification to owners / occupiers in the vicinity of the incident. This is to include relevant contact details; iii. Identification of personnel who have the authority to take immediate action to shut down any activity, or to affect any environmental control measure (including as directed by an authorised officer of any regulator or government department); iv. A process for undertaking appropriate levels of investigation for all incidents and the identification, implementation and assessment of corrective and preventative actions; and v. Notification protocols of incidents to relevant regulators and stakeholders including (but not limited to) the EPA, DPIE, the AEO, WSA and DITRDC for incidents that are made by the Contractor or Sydney Metro.	Section 7.10.2.2 Pollution Incident Response Management Plan Emergency Response Plan (SMWSASBT-CPG-1NL-NL000-SF-PLN-00004)
3.12 (b)	Emergency and Incident Response	The Contractor will make all personnel aware of the plan and their responsibilities.	Section 7.10.2.2 Pollution Incident Response Management Plan

Ref	Section	Description	Reference
			Emergency Response Plan (SMWSASBT-CPG-1NL-NL000-SF-PLN-00004)
3.13 (a)	Independent Environmental Representatives	Sydney Metro will engage Independent Environmental Representatives (ERs) as required under the SSI approval for off-airport works to undertake the following, along with any additional roles as required: i. Review, provide comment on and endorse (where required) any relevant environmental documentation to verify it is prepared in accordance with relevant environmental legislation, planning approval conditions, Environment Protection Licences, relevant standards and this CEMF; ii. Monitor and report on the implementation and performance of the above mentioned documentation and other relevant documentation; iii. Provide independent guidance and advice to Sydney Metro and the Contractors in relation to environmental compliance issues and the interpretation of planning approval conditions; iv. Be the principal point of advice for the DPIE in relation to all questions and complaints concerning the environmental performance of the project; v. Ensure that environmental auditing is undertaken in accordance with all relevant project requirements; and vi. Recommend reasonable steps, including 'stop works', to be taken to avoid or minimise adverse environmental impacts.	Section 4.4
3.14 (a)	Airport Environmental Officer	An Airport Environment Officer (AEO) is responsible for the day to day regulatory oversight of compliance with the Airports (Environment Protection) Regulations 1997 (AEPRs) at Western Sydney International and will have a role in relation to the on-airport works for SWMG. The responsibilities of the AEO in relation to on-airport works of SMWSA include: i. Monitoring compliance with the AEPRs ii. Facilitate an understanding of the obligations of the AEPRs iii. Ensure the best possible outcomes are achieved iv. Complete site inspections to review monitoring requirements and completion of works	On-airport works are outside of the scope of this CEMP.

Ref	Section	Description	Reference
		v. Review and comment on incidents and remedial activities vi. Issue an environment protection order in accordance with Part 7 of the AEPR vii. Issue an infringement notice in response to an offence against the AEPR.	
3.15 (a)	Roles and Responsibilities	In relation to Roles and Responsibilities the Principal Contractor CEMP will: i. Describe the relationship between the Principal Contractor, Sydney Metro, key regulatory stakeholders, the independent environmental representative and the independent certifier; ii. For each role that has environmental accountabilities or responsibilities, including key personnel, provide a tabulated description of the authority and roles of key personnel, lines of responsibility and communication, minimum skill level requirements and their interface with the overall project organisation structure; iii. Provide details of each specialist environment, sustainability or planning consultant who is employed by the Principal Contractor including the scope of their work; and iv. Provide an overview of the role and responsibilities of the Independent Environmental Representative, the Independent Certifier and other regulatory stakeholders.	Section 4
3.15 (b)	Roles and Responsibilities	All sub-contractors engaged by the Principal Contractor will be required to operate within the EMS documentation of that Principal Contractor.	Section 5.6
3.16 (a)	Environmental Monitoring, Inspections and Auditing	Issue specific environmental monitoring will be undertaken as required or as additionally required by any approval, permit or licence conditions	Section 5.5
3.16 (b)	Environmental Monitoring, Inspections and Auditing	The results of any monitoring undertaken as a requirement of a license or permit that is required to be published will be published on the Principal Contractor's, or a project specific, website within 14 days of obtaining the results.	Section 7.13.2
3.16 (c)	Environmental Monitoring, Inspections and Auditing	Environmental inspections will include: i. Surveillance of environmental mitigation measures by the Site Foreman; and ii. Periodic inspections by the Principal Contractor's Environmental Manager (or delegate) to verify the adequacy of all environmental mitigation measures. This will be documented in a formal inspection record.	Section 7.4.2

Ref	Section	Description	Reference
3.16 (d)	Environmental Monitoring, Inspections and Auditing	The results of any monitoring undertaken as a requirement of a license or permit that is required to be published will be published on the Principal Contractor's, or a project specific, website within 14 days of obtaining the results.	Section 5.5
3.16 (e)	Environmental Monitoring, Inspections and Auditing	Principal Contractors must undertake internal environmental audits. The scope will include: i. Compliance with any approval, permit or licence conditions; ii. Compliance with the E&SMS, CEMP, SMP, sub-plans and procedures; iii. Community consultation and complaint response; iv. Environmental training records; and v. Environmental monitoring and inspection results.	Section 7.13.1
3.16 (f)	Environmental Monitoring, Inspections and Auditing	Sydney Metro will also undertake periodic audits of the Principal Contractor's E&SMS and compliance with the environmental aspects of contract documentation, including this CEMF. These audits would cover both on- and off-airport works.	Section 7.13.1
3.16 (g)	Environmental Monitoring, Inspections and Auditing	Off-airport works approved under the SSI approval will be subjected to audits undertaken by the independent environmental auditor. Independent environmental audits will focus on compliance with the planning approval and the conditions of approval. The independent auditor is approved by DPE and an audit schedule will be developed in consultation with the Principal Contractor and Sydney Metro.	Section 7.13.1
3.16 (h)	Environmental Monitoring, Inspections and Auditing	On-airport works approved under the Airport Plan, as varied, will be subject to environmental audits and compliance audits, noting unscheduled audits may also be undertaken. The environmental audits would audit the environmental systems and on-site performance of the on-airport works of SMWSA and be undertaken on a 6 monthly basis.	On-airport works are outside of the scope of this CEMP.
3.17 (a)	Environmental Non-compliances	Principal Contractors will document and detail any non-compliances arising out of the above monitoring, inspections and audits. Sydney Metro will be made aware of all non-compliances in a timely manner.	Section 7.4.3
3.17 (b)	Environmental Non-compliances	Principal Contractors will develop and implement corrective actions to rectify the non-compliances and preventative actions in order to prevent a re-occurrence of the non-compliance. Contractors will also maintain a register of non-compliances, corrective actions and preventative actions.	Section 7.4.3

Ref	Section	Description	Reference
3.17 (c)	Environmental Non-compliances	Sydney Metro may raise non-compliances against environmental requirements. The Environmental Representative and Airport Environmental Officer also have the authority to raise a non-compliance for their respective areas of work.	Section 7.13.1
3.18 (a)	Environmental Records and Compliance Reporting	Principal Contractors will maintain appropriate records of the following: i. Site inspections, audits, monitoring, reviews or remedial actions; ii. Documentation as required by performance conditions, approvals, licences and legislation; iii. Modifications to site environmental documentation (e.g. CEMP, sub-plans and procedures); and iv. Other records as required by this Construction Environmental Management Framework.	Section 7.12.1
3.18 (b)	Environmental Records and Compliance Reporting	Records must be accessible onsite for the duration of works.	Section 7.12.1
3.18 (c)	Environmental Records and Compliance Reporting	Records will be retained by the Principal Contractor for a period of no less than 7 years. Records will be made available in a timely manner to Sydney Metro (or their representative) upon request.	Section 7.12.1
3.18 (d)	Environmental Records and Compliance Reporting	Compliance reports detailing the outcome of any environmental surveillance activity including internal and external audits (refer to Section 3.14) will be produced by the Principal Contractors Environmental Manager or delegate. These reports will be submitted to Sydney Metro at an agreed frequency.	Section 7.13.2
3.19 (a)	Review and Improvement of the Environment & Sustainability Management Systems	Principal Contractors will ensure the continual review and improvement of the management systems. This will generally occur in response to: i. Issues raised during environmental surveillance and monitoring; ii. Expanded scope of works; iii. Environmental incidents; and iv. Environmental non-conformances.	Section 7.13

Ref	Section	Description	Reference
3.19 (b)	Review and Improvement of the Environment & Sustainability Management Systems	A formal review of the management systems by the Principal Contractor's Senior Management Team will also occur on an annual basis, as a minimum. This review shall generate actions for the continual improvement of the systems and supporting management plans.	Section 7.13.3
4.1 (a)	Overview	Throughout construction, Sydney Metro and the Principal Contractors will work closely with stakeholders and the community to ensure they are well informed regarding the construction works.	Section 7.7
4.1 (b)	Overview	Stakeholders and the community will be informed of significant events or changes that affect or may affect individual properties, residences and businesses. These will include: i. Significant milestones; ii. Design changes; iii. Changes to traffic conditions and access arrangements for road users and the affected public; and iv. Construction operations which will have a direct impact on stakeholders and the community including noisy works, interruptions to utility services or construction work outside of normal work hours.	Section 7.7
4.2 (a)	Community Communication Strategy	An Overarching Community Communication Strategy (OCCS) has been developed for SMWSA. The OCCS incorporates both on and off-airport works, with the on-airport components being developed in consultation with WSA.	Section 7.7
4.2 (b)	Community Communication Strategy	Each Principal Contractor would be responsible for implementing their own Community Communication Strategy prepared in accordance with this overarching strategy.	Section 7.7
4.2 (c)	Community Communication Strategy	Key elements of the Community Communication Strategy, which will be implemented at appropriate times in the construction process, include: i. Notification (including targeted letterbox drops and email) of any works that may disturb local residents and businesses (such as noisy activities and night works) at least seven days prior to those works commencing; ii. Notification (including targeted letterbox drops and email) of works that may affect transport (such as road closures, changes to pedestrian routes and changes to bus stops);	Section 7.7

Ref	Section	Description	Reference
		iii. Traffic alerts (via email) to all key traffic and transport stakeholders advising of any changes to access and local traffic arrangements (at least seven days prior to significant events); iv. Print and radio advertisements regarding major traffic changes; v. 24-hour toll-free community project information phone line; vi. Complaints management process; vii. Community information sessions, as required; viii. Regular updates to the Sydney Metro website (sydneymetro.info), including uploading of all relevant documents, and contact details for the stakeholder and community relations team; ix. Provision of information to the Sydney Metro Community Information Centre including community newsletters, information brochures and fact sheets and interactive web-based activities; x. Clear signage at the construction sites; xi. Regular newspaper advertisements in local and metropolitan papers; xii. Regular inter-agency group meetings; xiii. Community, business and stakeholder satisfaction surveys and feedback forms; xiv. Translator and interpreter services; and xv. The Principal Contractor's Community Relations Team will liaise with the Sydney Metro Project Communications team as the point of contact for the community.	
4.3 (a)	Complaint Handling	Community liaison and complaints handling will be undertaken in accordance with the Construction Complaints Management System and will include: i. Principal Contractors will deal with complaints in a responsive manner so that stakeholders' concerns are managed effectively and promptly; and ii. A verbal response will be provided to the complainant as soon as possible and within a maximum of two hours from the time of the complaint (unless the complainant requests otherwise). A detailed written response will then be provided, if required, to the complainant within one week.	Section 7.7.3

Ref	Section	Description	Reference
		iii. Community liaison and complaints handling for construction of on-airport works will be undertaken in accordance with the Integrated Complaint Handling Procedure. This Procedure will include a single integrated complaint handling telephone line and email address for all works on the airport site which will be managed so that any contact made by a stakeholder will be directed to the relevant party responsible for those works so that stakeholder's concerns are managed effectively and promptly.	
4.5 (a)	Business and Property Impacts	Principal Contractors will proactively work with potentially affected stakeholders to identify the likely impacts and put in place measures to minimise impacts.	Section 7.7
4.5 (b)	Business and Property Impacts	Construction works will be undertaken to meet the following objectives: i. Minimise the potential impact of the project to businesses affected by construction works; ii. Ensure businesses are kept informed of the project and consulted in advance of major works or factors that are likely to have a direct impact; iii. Consult with all business directly affected by changes to access arrangements regarding specific requirements at least two weeks prior to those changes coming into effect; and iv. Ensure that business stakeholder enquiries and complaints regarding the project are managed and resolved effectively.	Section 7.7
4.5 (c)	Business and Property Impacts	The Community Communication Strategy (Section 4.2) will document key issues relating to business impacts by locality with a particular focus on proactive consultation with affected businesses. Including: i. Identification of specific businesses which are sensitive to construction activity disturbances; ii. Summary of the commercial character of the locality, its general trading profile (daily and annually) and information gained from the business profiling such as: • Operating hours; • Main delivery times; • Reliance on foot traffic; • Any signage or advertising that may be impacted; • Customer origin; and • Other information specific to the business that will need to be considered in construction planning. iii. Define the roles and responsibilities in relation to the control and monitoring of business disturbances;	Section 7.7 Communication Strategy

Ref	Section	Description	Reference
		iv. Identification of locality specific standard business mitigation measures which would be implemented; v. Maps and diagrams to illustrate the information for easy identification of measures which would be implemented; vi. Description of the monitoring, auditing and reporting procedures; vii. Procedure for reviewing performance and implementing corrective actions; viii. Description of the complaints handling process; and ix. Procedure for community consultation and liaison.	
5.1 (a)	Working Hours	Standard working hours are between 7am – 6pm on weekdays and 8am – 1pm on Saturdays.	Section 2.7
5.1 (b)	Working Hours	Works which can be undertaken outside of standard construction hours without any further approval include: i. Those which have been described and assessed in the environmental assessments. For example, tunnelling and underground excavations and supporting activities or works within Western Sydney International ii. Works which are determined to comply with the relevant Noise Management Level at sensitive receivers; iii. The delivery of materials outside of approved hours as required by the Police or other authorities(including Transport for NSW) for safety reasons; iv. Where it is required to avoid the loss of lives, property and / or to prevent environmental harm in an emergency; and v. Where written agreement is reached with all affected receivers.	Section 2.7
5.1 (c)	Working Hours	Where off-airport works are being undertaken under an Environmental Protection Licence, Principal Contractors may apply for EPA approval to undertake works outside of normal working hours.	Section 2.7 Section 5.3 Section 5.4
5.3	Site Layout	Principal Contractors will consider the following in the layout of construction sites: i. The location of noise intensive works and 24 hour activities in relation to noise sensitive receivers; ii. The location of site access and egress points in relation to noise and light sensitive receivers, especially for sites proposed to be utilised 24 hours per day;	Annexure C Construction Noise and Vibration Management Sub-Plan

Ref	Section	Description	Reference
		iii. The use of site buildings to shield noisy activities from receivers; iv. The use of noise barriers and / or acoustic sheds where feasible and reasonable for sites proposed to be regularly used outside of daytime hours; and v. Aim to minimise the requirement for reversing, especially of heavy vehicles.	
5.4 (a)	Reinstatement	Where measures for reinstatement are not stipulated in the contracts, mitigation measures for reinstatement of construction and ancillary lands will be produced in consultation with Sydney Metro, the landowner and stakeholders.	Measures for reinstatement are not stipulated for the SBT Works. Refer to the Soil and Water Management Sub-Plan
5.4 (b)	Reinstatement	Mitigation measures required for reinstatement will be incorporated into the CEMP and will include as a minimum: i. Principal Contractors will clear and clean all working areas and accesses at project completion; ii. At the completion of construction all plant, temporary buildings or vehicles not required for the subsequent stage of construction will be removed from the site; iii. All land, including roadways, footpaths, loading facilities or other land having been occupied temporarily will be returned to their pre-existing condition or better; and iv. Reinstatement of community spaces, infrastructure and services will occur as soon as possible after completion of construction.	Visual Amenity Management Procedure (Annexure B)
9.1 (a)	Heritage Management Objectives	The following heritage management objectives will apply to construction: i. Embed significant heritage values through any architectural design, education or physical interpretation; ii. Minimise impacts on items or places of heritage value; iii. Avoid accidental impacts on heritage items; iv. Maximise worker's awareness of indigenous and non-indigenous heritage; and v. For on-airport works, the Sydney Metro Western Sydney Airport Aboriginal Cultural Heritage CEMP and the European and Other Heritage CEMP will detail all the heritage management objectives and will be consistent with	Section 6.5 Section 6.6 Aboriginal and Historic Heritage Unexpected Finds Workflow Procedure (Annexure B) ACHMP

Ref	Section	Description	Reference
		the WSA Aboriginal Cultural Heritage CEMP and European and Other Heritage CEMP, including all appendices to these CEMP documents.	
9.2 (a)	Heritage Management Implementation	On-airport management of Aboriginal cultural heritage and European heritage will be achieved through the implementation of the SMWSA Aboriginal Cultural Heritage and the European and Other Heritage CEMPs .Principal Contractors will develop and implement a Heritage Management Plan for all off-airport works. Plans will include as a minimum: i. Evidence of consultation with Registered Aboriginal Parties and the NSW Heritage Council; ii. Identify initiatives that will be implemented for the enhancement of heritage values and minimisation of heritage impacts, including procedures and processes that will be used to implement and document heritage management initiatives; iii. The heritage mitigation measures as detailed in the planning approval documentation; iv. The responsibilities of key project personnel with respect to the implementation of the plan; v. Procedures for interpretation of heritage values uncovered through salvage or excavation during detailed design; vi. Procedures for undertaking salvage or excavation of heritage relics or sites (where relevant), consistent with and any recordings of heritage relics prior to works commencing that would affect them; vii. Details for the short and / or long term management of artefacts or movable heritage; viii. Details of management measures to be implemented to prevent and minimise impacts on heritage items (including further heritage investigations, archival recordings and/or measures to protect unaffected sites during construction works in the vicinity); ix. Procedures for unexpected heritage finds, including procedures for dealing with human remains; x. Heritage monitoring requirements; and xi. Compliance record generation and management.	Section 6.6 Aboriginal and Historic Heritage Unexpected Finds Workflow Procedure (Annexure B) ACHMP
9.2 (b)	Heritage Management Implementation	The Contractor's regular inspections will include checking of Aboriginal and non-Aboriginal heritage mitigation measures.	Section 7.4.2

Ref	Section	Description	Reference
9.2 (c)	Heritage Management Implementation	Compliance records will be retained by the Contractor. These will include: i. Inspections undertaken in relation to heritage management measures; ii. Archival recordings undertaken of any heritage item; iii. Unexpected finds and stop work orders; and iv. Records of any impacts avoided or minimised through design or construction methods.	Section 7.12.1
9.3 (a)	Heritage Mitigation	The on-airport Aboriginal Cultural Heritage and European and Other Heritage CEMPs and the off-airport Heritage Management Plan will include the following mitigation measures as well as relevant Conditions: i. Induction courses for site workers will include training in the identification of Aboriginal artefacts and management of Aboriginal heritage values. ii. Any heritage item not affected by the works will be retained and protected throughout construction; iii. During construction undertake professional archaeological investigation, excavation, and reporting of any historical Indigenous heritage sites of state significance which will be affected. Reporting may be completed as construction progresses; iv. Undertake archival recordings of all non-Indigenous heritage items affected by the works prior to commencement of works; and v. Implement unexpected heritage find procedures for Indigenous and non-Indigenous heritage items.	Section 6.5 Aboriginal and Historic Heritage Unexpected Finds Workflow Procedure (Annexure B) ACHMP
13.1 (a)	Air Quality Management Objectives	The following air quality management objectives will apply to construction: i. Minimise gaseous and particulate pollutant emissions from construction activities as far as feasible and reasonable; ii. Identify and control potential dust and air pollutant sources; and iii. For on-airport works, the Sydney Metro Western Sydney Airport Air Quality CEMP will detail all the air quality management objectives and will be consistent with the WSA Air Quality CEMP including all appendices to the CEMP.	Air Quality Management Procedure and Monitoring Program (Annexure B)

Ref	Section	Description	Reference
13.2 (a)	Air Quality Management Implementation	On-airport management of soil and water will be achieved through the implementation of the SMWSA Soil and Water CEMP and Principal Contractors will develop and implement an Air Quality Management Plan for all off-airport works. Both plans will include, as a minimum: i. The air quality mitigation measures as detailed in the planning approval documentation; ii. The requirements of any approval and applicable licence conditions; iii. Site plans or maps indicating locations of sensitive receivers and key air quality / dust controls; iv. The responsibilities of key project personnel with respect to the implementation of the plan; v. Air quality and dust monitoring requirements; and vi. Compliance record generation and management.	Air Quality Management Procedure and Monitoring Program (Annexure B)
13.2 (b)	Air Quality Management Implementation	Air quality and dust monitoring will involve the following as a minimum: i. Meteorological conditions will be monitored and appropriate responses will be organised and undertaken periodically by the Principal Contractor; ii. Regular visual monitoring of dust generation from work zones; and iii. Monitoring emissions from plant and construction vehicles to ensure they have appropriate emission controls and are being maintained correctly.	Air Quality Management Procedure and Monitoring Program (Annexure B)
13.2 (c)	Air Quality Management Implementation	The following compliance records will be kept by the Principal Contractor: i. Records of any meteorological condition monitoring; ii. Records of any management measures implemented as a result of adverse, windy weather conditions; and iii. Records of air quality and dust inspections undertaken.	Section 7.12.1
13.3 (a)	Air Quality Mitigation	The on-airport Air Quality CEMP and the off-airport Air Quality Management Plan will include the following air quality mitigation measures as well as any relevant Conditions: i. Plant and equipment will be serviced and maintained in good working order to reduce unnecessary emissions from exhaust fumes; ii. Plant and equipment to be switched off engines when not in use;	Air Quality Management Procedure and Monitoring Program (Annexure B)

Ref	Section	Description	Reference
		iii. The avoidance the use of diesel or petrol powered generators and instead using mains electricity or battery powered equipment, where practicable; iv. Appropriate vehicle speeds on sealed and unsealed roads; v. Development and implementation of a construction logistics plan to manage the sustainable delivery of goods and materials; vi. Implementing measures to support and encourage sustainable travel for construction workers to and from the construction sites; vii. Water suppression will be used for active earthwork areas, stockpiles, unsurfaced haul roads and loads of soil being transported to reduce wind-blown dust emissions; viii. Wheel-wash facilities or rumble grids will be provided and used near the site exit points, as appropriate; and ix. Dust extraction and filtration systems will be installed for tunnel excavation works and deep excavation with limited surface exposure	

Sydney Metro General Specification – CEMP Requirements

Ref	Section	Description	Reference
5.1.1(a)	Project Plans	Each Project Plan must contain, as a minimum, the contents specified in this section. [SM-WSA-SBT-GS-2524]	This Plan
5.1.1(b)	Project Plans	The SBT Contractor may elect the format of each Project Plan as appropriate. [SM-WSA-SBT-GS-2525]	This Plan
5.1.1(c)	Project Plans	Each Project Plan may be supported by sub-plans as necessary to address the relevant requirements. [SM-WSA-SBT-GS-2526]	This Plan reflects the requirements of the Staging Report and as such, Sub-plans were not required.
5.1.1(d)	Project Plans	The SBT Contractor must submit any plans required to be made public by Planning Approvals in compliance with the Web Content Accessibility Guidelines (<www.w3.org/W Al/standards-quidelines/wcaq/>). [SM-WSA-SBT-GS-2527]	Section 1.4
5.1.1(e)	Project Plans	The SBT Contractor must include in each Project Plan a cross reference table that maps each assigned requirement to the section in the document where it has been addressed. [SM-WSA-SBT-GS-2528]	Annexure G
5.1.1(f)	Project Plans	Each Project Plan must define the resourcing required to implement the plan, including the qualifications, experience, and authorities for each key resource. [SM-WSA-SBT-GS-2529]	Section 4
5.1.2(a)	Project Plan Submission and Update	All Project Plans identified in this section must be submitted and updated: [SM-WSA-SBT-GS-2531] (i) in accordance with the times set out in Table 3; [SM-WSA-SBT-GS-2532] (ii) as required by clause 11 of this D&C Deed; and [SM-WSA-SBT-GS-2533] (iii) where reasonably required by the Principal or any Authority. [SM-WSA-SBT-GS-2534]	This Plan will be submitted in accordance with this requirement.
5.1.2(b)	Project Plan Submission and Update	Unless otherwise stated in Table 3, the Project Plans must be submitted to the Principal and to the Independent Certifier via the PDCS. [SM-WSA-SBT-GS-2535]	This Plan will be submitted in accordance with this requirement.
5.1.2(c)	Project Plan Submission and Update	The SBT Contractor must undertake the ongoing development, amendment and updating of the Project Plans throughout the duration of the SBT Contractor's Activities to ensure they remain aligned with Project priorities, risk areas and requirements taking into account: [SM-WSA-SBT-GS-2536] (i) status and progress of the SBT Contractor's Activities ; [SM-WSA-SBT-GS-2537] (ii) changes in design and construction processes and conditions ; [SM-WSA-SBTGS-2538]	Section 7.12.2

Ref	Section	Description	Reference
		(iii) lessons learnt during the delivery of the Works; [SM-WSA-SBT-GS-2539] (iv) changes in other related Project Plans; [SM-WSA-SBT-GS-2540] (v) requirements and matters that are not covered by the existing Project Plans; [SM-WSA-SBT-GS-2541] (vi) changes to the Project Plans as required by the Principal under the D&C Deed; and [SM-WSA-SBT-GS-2542] (vii) with respect to the Pandemic Management Plan, COVID-19 Laws, Pandemic Change in Law, Pandemic Relief Events, changing circumstances and WHS advice. [SM-WSA-SBT-GS-5311]	
5.1.2(c)	Project Plan Submission and Update	Ref: 1.10 Project Plan: Construction Environmental Management Plan and Sub-Plans (as identified in the CEMF, CNVS and CTMF) Project Plan submission date: 60 Business Days from the date of this D&C Deed Update frequency: Annually until Completion of the last Portion to achieve Completion or more frequently if required by the CEMF, CNVS or CTMF IC Review: Independent Certifier may review and provide comments [SM-WSA-SBT-GS-2553]	This Plan
5.1.12.1 (a)	Construction Environmental Management Plan and Sub-plans (Off-Airport)	The SBT Contractor must submit a Construction Environmental Management Plan and Sub-Plans to the Principal for Review in accordance with Table 3. [SM-WSA-SBT-GS-2930]	This Plan
5.1.12.1 (b)	Construction Environmental Management Plan and Sub-plans (Off-Airport)	The Construction Environmental Management Plan and Sub-Plans must comply with the Sydney Metro Construction Environmental Management Framework (CEMF) (SM-20-00099351), the Construction Noise and Vibration Standard (CNVS), and the Construction Traffic Management Framework (CTMF). [SM-WSA-SBT-GS-2931]	Section 6.2 Annexure G
5.1.12.1 (c)	Construction Environmental Management Plan and Sub-plans (Off-Airport)	The SBT Contractor must develop, submit for Review, implement and maintain all plans and sub-plans required by the Sydney Metro Construction Environmental Management Framework (CEMF), the Construction Noise and Vibration Standard (CNVS), and the Construction Traffic Management Framework (CTMF). [SM-WSA-SBT-GS-2932]	This Plan

EPBC 2020/8687 Conditions of Approval

Topic	Reference	Condition of Approval	Reference
Biodiversity Management Plan	EPBC10	The approval holder must not commence the action unless the Minister has approved the Biodiversity Management Plan in writing.	The Department of Agriculture, Water and the Environment approved the *Sydney Metro – Western Sydney Airport Off-airport Biodiversity Management Plan*, (Rev 0.5 dated March 2022) on 29 March 2022.
Compensation Measures	EPBC15	Prior to the commencement of clearing of protected matters identified in condition 2 in each stage, as defined in the Staging Plan required under condition 12, the approval holder must: a. determine the offset requirement for protected matters identified in condition 2 to be cleared in that stage in accordance with the NSW Biodiversity Assessment Method and the process set out in the Biodiversity Offset Strategy required under condition 18. b. secure the required offsets for that stage.	To enable Sydney Metro to report on matters of compliance, a hold point has been established prior to clearing. Refer to Section 5.4 and the Flora and Fauna Management Sub-Plan.
Biodiversity Offset Strategy	EPBC20	The approval holder must not commence the action unless the Minister has approved the Biodiversity Offset Strategy in writing.	The Department of Agriculture, Water and the Environment approved the *Sydney Metro – Western Sydney Airport EPBC Biodiversity Offset Strategy for off-airport lands* (Rev 0.6 dated February 2022) on 29 March 2022.
Reporting Non-Compliance	EPBC29	The approval holder must notify the Department in writing of any: incident; non-compliance with the conditions; or non-compliance with the commitments made in plans. The notification must be given as soon as practicable, and no later than 2 business days after becoming aware of the incident or non-compliance. The notification must specify: a. any condition which is or may be in breach b. a short description of the incident and/or non-compliance c. the location (including co-ordinates), date, and time of the incident and/or non-compliance. In the event the exact information cannot be provided, provide the best information available.	Section 7.4.3.2 Section 7.10.2.3

Topic	Reference	Condition of Approval	Reference
Reporting Non-Compliance	EPBC30	The approval holder must provide to the Department the details of any incident or non-compliance with the conditions or commitments made in plans as soon as practicable and no later than 10 business days after becoming aware of the incident or non-compliance, specifying: a. any corrective action or investigation which the approval holder has already taken or intends to take in the immediate future b. the potential impacts of the incident or non-compliance c. the method and timing of any remedial action that will be undertaken by the approval holder.	Section 7.4.2.3 Section 7.10.2.3
Independent Audit	EPBC31	The approval holder must ensure that independent audits of compliance with the conditions are conducted as requested in writing by the Minister.	Section 7.13.1

Annexure H Consultation Report - Air Quality Management Procedure and Monitoring Program

SYDNEY METRO - WESTERN SYDNEY AIRPORT
STATION BOXES AND TUNNELLING WORKS

Consultation Report – Air Quality Management Procedure and Monitoring Program

Sydney Metro Western Sydney Airport Station Boxes and Tunnelling Works

Project number	WSA-200-SBT
Document number	SMWSASBT-CPG-SWD-SW000-EN-RPT-295008
Revision date	25 August 2022
Revision	0

Document approval

Rev	Date	Prepared by	Reviewed by	Approved by	Signature
0	25-Aug-22	D Corish	E Kline	Nil	EKline

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1. Introduction

1.1. Background

The Sydney Metro Western Sydney Airport (the Project) forms part of the broader Sydney Metro network. It involves the construction and operation of a 23km new metro rail line that extends from the existing Sydney Trains suburban T1 Western Line (at St Marys) in the north and the Aerotropolis (at Bringelly) in the south. The alignment includes a combination of tunnels and civil structures, including viaduct, bridges, surface and open-cut troughs between the two tunnel sections

The Sydney Metro Western Sydney Airport EIS was prepared in October 2020 to assess the impacts of construction and operation of the Project and was placed on public exhibition between 21 October 2020 and 2 December 2020. The Project was declared a Critical State Significant Infrastructure (CSSI) Project and is listed in Schedule 5 of State Environmental Planning Policy (State and Regional Development).

The Project was approved by the Minister for Planning and Public Spaces on 23 July 2021 (SSI 10051) under section 5.19 of the *Environmental Planning and Assessment Act 1997* (EP&A Act).

1.2. Scope of the report

Reflecting the requirements of the SSI 10051 Planning Approval, this report has been prepared to provide the evidence of consultation with the identified parties during the development of the Air Quality Management Procedure and Monitoring Program (Rev 4, SMWSASBT-CPG-1NL-EV-RPT-000003) (Subject Document).

2. Consultation Requirements

2.1. SSI 10051 Planning Approval

The Conditions of Approval relevant to stakeholder consultation on the Subject Document are listed in Table 1.

Table 1: Conditions of Approval

Ref	Condition
A6	Where the terms of this approval require a document or monitoring program to be prepared, or a review to be undertaken, in consultation with identified parties, evidence of the consultation undertaken must be submitted to the Planning Secretary with the document. The evidence must include: (a) documentation of the engagement with the party identified in the condition of approval that has occurred before submitting the document for approval; (b) a log of the dates of engagement or attempted engagement with the identified party and a summary of the issues raised by them; (c) documentation of the follow-up with the identified party(s) where feedback has not been provided to confirm that the party(s) has none or has failed to provide feedback after repeated requests; (d) outline of the issues raised by the identified party(s) and how they have been addressed; and (e) a description of the outstanding issues raised by the identified party(s) and the reasons why they have not been addressed.
C13	The following Construction Monitoring Programs must be prepared in consultation with the relevant government agencies (as required by Condition A6) identified for each to compare actual performance of construction of the CSSI against the performance predicted in the documents listed in Condition A1 or in the CEMP. Where a government agency(ies) request(s) is not included, the Proponent must provide the Planning Secretary / ER (whichever is applicable) justification as to why.

	Required Construction Monitoring Programs	Relevant government agencies to be consulted for each Construction Monitoring Program
(a)	Noise and vibration	Relevant Councils and WaterNSW (in relation to its assets)
(b)	Surface water quality	DPIE Water, DPI Fisheries, and Relevant Councils
(c)	Groundwater	DPIE Water
(d)	Air Quality	Relevant Councils

2.2. Revised Environmental Mitigation Measures

There are no Revised Environmental Mitigation Measures (REMMs) relevant to stakeholder consultation on the Subject Document.

3. Consultation summary

In accordance with the SSI 10051 Planning Approval and the REMMs, the Subject Document has been prepared in consultation with the identified parties. A summary of the consultation is provided in Table 2.

Table 2: Stakeholder consultation summary

Stakeholder	Consultation Summary	Status	Reference
Penrith City Council	Issues raised have been adequately addressed in the Subject Document; there are no outstanding issues.	Addressed and closed.	Annexure A
Liverpool City Council	Stakeholder did not provide a response despite repeated requests.	No action required.	Annexure B

Annexure A Penrith City Council Consultation Evidence

Table 3: Consultation Log

In/out	Date and time	Method of contact	Details of contact
Out	23-May-22, 3:27pm	Email	Subject Document provided to stakeholder
In	20-Jun-22, 10:15am	Email	Stakeholder provides comments on the Subject Document.

Table 4: Issues raised by Stakeholder on Subject Documents

Ref	Issues raised	How addressed	Subject Document ref
Air Quality Management Procedure and Monitoring Program			
01	The Environment Team has reviewed the Air Quality Management and Monitoring Procedure prepared by CPB Contractors (dated 4 May 2022, ref SMWSASBT-CPG-1NL-EV-RPT-000003) provided to Council for comment. We are generally satisfactory with the procedure document.	Noted	N/A
02	However, it is noted that the procedure document does not refer directly to any guidelines, policies or standards, such as the NSW Government's Managing Urban Stormwater: Soils and construction documents, also commonly known as the Blue Book.	The Air Quality Management Procedure and Monitoring Program is an Annexure of the Construction Environmental Management Plan (CEMP) and is referenced in Section 6.3 of the CEMP. Section 6.3.1 of the CEMP has been revised to note that the Air Quality Management Procedure and Monitoring Program has been prepared in accordance with the Managing Urban Stormwater: Soils and Construction (Volume 1 of the Blue Book) (Landcom, 2004. It is note that the Blue Book is also referenced in the Soil and Water Management Sub-Plan.	CEMP, Section 6.3.1
03	The Air Quality and Dust Controls section of the procedure states "Stabilise long-term stockpiles (>20 days) with grasses or appropriate soil binding material" as a proposed mitigation measure. Whilst the stabilisation of a stockpile which is unused for greater than 20 days is a recommendation found in the Blue Book, there is no specific reference to a guideline, policy or standard for the amount of ground cover required. Section 7 and Table 7.1 within the Blue Book states that a stockpile or material anticipated to not be used for greater than 20 days should not only be stabilised but should have greater than 50% ground cover as a minimum, as well as	The Air Quality Management Procedure and Monitoring Program (Air Quality and Dust Controls Section) has been revised to include the following statement, "Stabilise long-term stockpiles (>20 days) with grasses or appropriate soil binding material where there is the potential for dust generation (refer to the Blue Book for guidance on preferred soil binding materials). Where a minimum groundcover of 60% has not been achieved within 10 working days of completion of formation, review works and implement additional soil binding measures."	Air Quality Management Procedure and Monitoring Program (Air Quality and Dust Controls Section)

Ref	Issues raised	How addressed	Subject Document ref
	determining which particular soil binding material should be applied under certain circumstances. Therefore, it is recommended that the Air Quality Management and Monitoring Procedure be amended to align with an appropriate guideline, policy or standard (such as the Blue Book) which provides further detail in terms of mitigating potential air pollution impacts on surrounding sensitive receivers.		
04	Furthermore, it is recommended that a detailed site-specific Air Quality Management and Monitoring Procedure (or similar) be prepared for each stage of the SBT works. The detailed plan should: 1. aim to minimise exposure and disturbance of ground where possible; 2. include a site plan for each stage of the development; 3. identify and highlight areas of planned disturbances and preservation; 4. include an established timeline of works at each stage which includes timeframes of which disturbed surfaces are to be temporarily or permanently rehabilitated following completion of works; 5. include specific mitigation measures where appropriate. Acceptable mitigation measures can be found in Table 7.1 and Section 7 of the Blue Book.	As detailed in Section 5.2 of the CEMP, Sensitive Area Maps (SAPs) will be prepared for each SBT worksite. The SEP will provide a practical translation of environmental risks and controls for workers, including training and competency requirements. SAPs are specific to a site or activity and incorporate an illustration of the site (including significant structures, work areas, disturbance areas, areas of preservation and boundaries), identify environmentally sensitive receivers and detail control measures as derived from relevant procedures. SAPs will be prepared progressively for each stage of development, endorsed by the Environment Manager or delegate, and communicated to relevant workers prior to commencing works. The SAPs will include all relevant mitigation measures including minimising the area of disturbance (where relevant).	CEMP, Section 5.2

FW: WSASBT Works . CSSI 15001 Documents for Consultation with Penrith Council.

Reply | Reply All | Forward

BM Billings, Mathew <Mathew.Billings@sclww.com.au>
To Denise Corish; Anstee, Stuart
Cc Shannon, Brendan; Cosier, Joshua

Mon 20/06/2022 11:58 AM

Air Quality Management and Monitoring_PCC Comment_20 June 2022.docx
.docx File

Metro SBT Noise Vibration PCC Comment_20 June 2022.docx
.docx File

From: Billings, Mathew
Sent: Monday, 23 May 2022 3:27 PM
To: Lauren.Vallejo@penrith.city.nsw.gov.au
Cc: Denise Corish <denise.corish@treoenvironment.com>; Cosier, Joshua <Joshua.Cosier@cpbcon.com.au>; kate.o'connell@transport.nsw.gov.au; Raju Divakarla <Raju.Divakarla@transport.nsw.gov.au>; Megan.Mckay3@transport.nsw.gov.au; Graham.Knox5@transport.nsw.gov.au
Subject: WSASBT Works . CSSI 15001 Documents for Consultation with Penrith Council.

Dear Laura

The documents listed below are being issued from The WSASBT Works Contractor to Liverpool City Council for consultation.

The documents have been drafted to meet requirement of Sydney Metro Western Sydney Airport-SSI 1005 and associated contract requirements.

Issue of the Plans for consultation addresses Condition of Approval (CoA) C5
Issue of Monitoring Programs for consultation addresses CoA C13

- *SBT NSW Construction Noise and Vibration Mgt Sub-Plan_Rev A (includes monitoring program) (CoA C5 and C13)*
- *SBT NSW Flora and Fauna Management Plan_Rev A (CoA C5)*
- *Air Quality management and monitoring procedure (CoA C13)*

Please provide all feedback on each documents using a separate comments register (template attached).
Please return the comments register to me on or before COB 17/06/2022.
If you have any questions during the consultation period please do not hesitate to contact me directly

Note.
SBT NSW Soil and Water Management Sub-Plan_Rev A (included monitoring program) (CoA C5 and C13) will follow under separate cover this week - all documents will also be issued via Teambinder

Regards

Mathew Billings
Approvals, Environment and Sustainability Manager

FW: WSASBT Works . CSSI 15001 Documents for Consultation with Penrith Council.

Reply | Reply All | Forward | ...

BM

Billings, Mathew <Mathew.Billings@sclww.com.au>
To Denise Corish; Anstee, Stuart
Cc Shannon, Brendan; Cosier, Joshua

Mon 20/06/2022 11:58 AM

Air Quality Management and Monitoring_PCC Comment_20 June 2022.docx
.docx File

Metro SBT Noise Vibration PCC Comment_20 June 2022.docx
.docx File

From: Lauren Vallejo <Lauren.Vallejo@penrith.city>
Sent: Monday, 20 June 2022 10:15 AM
To: Billings, Mathew <Mathew.Billings@sclww.com.au>
Subject: RE: WSASBT Works . CSSI 15001 Documents for Consultation with Penrith Council.

CAUTION: This email originated from outside of the Organisation.

Hi Matthew

Please find attached Council comments on the following:

- SBT Air Quality Management & Monitoring Procedure
- SBT Construction Noise & Vibration Management Sub-Plan (Revision A)

The Air Quality Management & Monitoring Procedure was not laid out like a standard management plan and subsequently the standard comments template provided to Council was not used.

Please contact myself for any discussion or questions in relation to Council's comments.

Thanks Matthew

Kind Regards
Lauren

Lauren Vallejo
Project Interface - Sydney Metro

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Sydney Metro SBT – Air Quality Management & Monitoring Procedure

20 June 2022

Penrith City Council Comment

The Environment Team has reviewed the Air Quality Management and Monitoring Procedure prepared by CPB Contractors (dated 4 May 2022, ref SMWSASBT-CPG-1NL-EV-RPT-000003) provided to Council for comment. We are generally satisfactory with the procedure document.

However, it is noted that the procedure document does not refer directly to any guidelines, policies or standards, such as the NSW Government's *Managing Urban Stormwater: Soils and construction* documents, also commonly known as the Blue Book.

The Air Quality and Dust Controls section of the procedure states "Stabilise long-term stockpiles (>20 days) with grasses or appropriate soil binding material" as a proposed mitigation measure. Whilst the stabilisation of a stockpile which is unused for greater than 20 days is a recommendation found in the Blue Book, there is no specific reference to a guideline, policy or standard for the amount of ground cover required.

Section 7 and Table 7.1 within the Blue Book states that a stockpile or material anticipated to not be used for greater than 20 days should not only be stabilised but should have greater than 50% ground cover as a minimum, as well as determining which particular soil binding material should be applied under certain circumstances. Therefore, it is recommended that the Air Quality Management and Monitoring Procedure be amended to align with an appropriate guideline, policy or standard (such as the Blue Book) which provides further detail in terms of mitigating potential air pollution impacts on surrounding sensitive receivers.

Furthermore, it is recommended that a detailed site-specific Air Quality Management and Monitoring Procedure (or similar) be prepared for each stage of the SBT works. The detailed plan should:

1. aim to minimise exposure and disturbance of ground where possible;
2. include a site plan for each stage of the development;
3. identify and highlight areas of planned disturbances and preservation;
4. include an established timeline of works at each stage which includes timeframes of which disturbed surfaces are to be temporarily or permanently rehabilitated following completion of works;
5. include specific mitigation measures where appropriate.

Acceptable mitigation measures can be found in Tabe 7.1 and Section 7 of the Blue Book.

Annexure B Liverpool City Council Consultation Evidence

Table 5: Consultation Log

In/out	Date and time	Method of contact	Details of contact
Out	23-May-22, 3:27pm	Email	Subject Documents provided to stakeholder
Out	20-Jul-22, 3:56pm	Email	Request for comments or provide confirmation of no comments
Out	22-Jul-22, 2:15pm	Phone	Request for comments or provide confirmation of no comments
Out	29-Jul-22, 9:16am	Phone	Request for comments or provide confirmation of no comments
Out	4-Aug-22, 8:48am	Email	Request for comments or provide confirmation of no comments
Out	5-Aug-22, 9:15am	Phone	Request for comments or provide confirmation of no comments
Out	23-Aug-22, 3:17pm	Email	Correspondence advising Liverpool City Council that the Subject Documents will be finalised on 25-Aug-2022.

From: Billings, Mathew <Mathew.Billings@sclww.com.au>
Sent: Monday, 23 May 2022 3:27 PM

1

To: Peter Nelson <NelsonP@liverpool.nsw.gov.au>; Stella Qu <QuS@liverpool.nsw.gov.au>
Cc: Denise Corish <denise.corish@treoenvironment.com>; Cosier, Joshua <Joshua.Cosier@cpbcon.com.au>; kate.o'connell@transport.nsw.gov.au; Raju Divakarla <Raju.Divakarla@transport.nsw.gov.au>; Megan.Mckay3@transport.nsw.gov.au; Graham.Knox5@transport.nsw.gov.au
Subject: WSASBT Works . CSSI 15001 Documents for consultation with Liverpool Council. SSD1-25/2020.

Dear Peter

The documents listed below are being issued from The WSASBT Works Contractor to Liverpool City Council for consultation.

The documents have been drafted to meet requirement of Sydney Metro Western Sydney Airport-SSI 1005 and associated contract requirements.

Issue of the Plans for consultation addresses Condition of Approval (CoA) C5
Issue of Monitoring programs for consultation addresses CoA C13

- *SBT NSW Construction Noise and Vibration Mgt Sub-Plan_Rev A (includes monitoring program) (CoA C5 and C13)*
- *SBT NSW Flora and Fauna Management Plan_Rev A (CoA C5)*
- *Air Quality management and monitoring procedure (CoA C13)*

Please provide all feedback on the documents using the comments register (template attached).
Please return the comments register to me on or before COB 17/06/2022.

If you have any questions during the consultation period please do not hesitate to contact me directly.

Note.
SBT NSW Soil and Water Management Sub-Plan_Rev A (included monitoring program) (CoA C5 and C13) will follow under separate cover this week.

Regards

Mathew Billings
Approvals, Environment and Sustainability Manager
Sydney Metro Western Sydney Airport
Station Boxes and Tunnelling Works

Denise Corish

From: Denise Corish
Sent: Wednesday, 20 July 2022 3:56 PM
To: nelsonp@liverpool.nsw.gov.au; 'QuS@liverpool.nsw.gov.au'
Cc: joshua.cosier@cpbcon.com.au
Subject: FW: WSASBT Works . CSSI 15001 Documents for consultation with Liverpool Council. SSD1-25/2020.
Attachments: SBT NSW Construction Noise and Vibration Mgt Sub-Plan_Rev A_Reduced.pdf; Air quality management and monitoring procedure.pdf; stakholder consultation comments register Template LCC.docx; SBT NSW Flora and Fauna Management Plan_Rev A for consultation_reduced.pdf; CSSI 10051 Sydney Metro Western Sydney Airport - Substation Boxes and Tunnelling (SSD1-25/2020) - LCC Consultation

Hi Peter and Stella,
On behalf of CPB Contractors and Ghella JV, I refer to the emails below and attached which provided the following documents to Liverpool City Council for consultation.

- *SBT NSW Construction Noise and Vibration Mgt Sub-Plan_Rev A (includes monitoring program) (CoA C5 and C13) (attached)*
- *SBT NSW Flora and Fauna Management Plan_Rev A (CoA C5) (attached)*
- *Air Quality management and monitoring procedure (CoA C13) (attached)*
- *SBT NSW Soil and Water Management Sub-Plan_Rev A (including the Surface Water Quality Monitoring Program, Rev B) (Condition CoA C5 and C13) – accessible from the following link* https://wetransfer.com/downloads/94a5c947d2195dd0096502f2077ecc0220220720055346/46654ddc4260e33050d93c2821ed151d20220720055406/2b4a39

The extended consultation period for the management plans and monitoring programs was completed on **27 Jun 2022**. Would it be possible for the Council to provide any comments on the documents at the earliest or provide confirmation of no comments?

Thanks in advance,
Denise

Denise Corish
Manager, Environmental Performance and Assurance

RE: WSASBT Works . CSSI 15001 Documents for consultation with Liverpool Council. ...

Reply | Reply All | Forward | ...

DC

Denise Corish
To nelsonp@liverpool.nsw.gov.au; QuS@liverpool.nsw.gov.au
Cc joshua.cosier@cpbcon.com.au

Thu 4/08/2022 8:48 AM

Hi Peter,
Further to our discussions on 22 July 2022 and 29 July 2022, could I trouble you to confirm whether Council has any comments on the following plans that were submitted to Council for consultation on 23 May 2022:

- *SBT NSW Construction Noise and Vibration Mgt Sub-Plan_Rev A (includes monitoring program) (CoA C5 and C13)*
- *Air Quality management and monitoring procedure (CoA C13)*
- *SBT NSW Soil and Water Management Sub-Plan_Rev A (including the Surface Water Quality Monitoring Program, Rev B) (Condition CoA C5 and C13)*

As discussed, it is a requirement of the Planning Approval that we consult with Council on the above documents. Any assistance greatly appreciated to enable the project to complete the pre-construction compliance obligations.

Kind regards,
Denise

treo

Denise Corish
Manager, Environmental Performance and Assurance

RE: WSASBT Works . CSSI 15001 Documents for consultation with Liverpool Council. SS...

Reply | Reply All | Forward

DC

Denise Corish
To nelsonp@liverpool.nsw.gov.au; QuS@liverpool.nsw.gov.au
Cc joshua.cosier@cpbcon.com.au; Mitchell, Stephan; Mitchell, Stephan; Fuda, Emily
Tue 23/08/2022 3:17 PM

Hi Peter,
On behalf of CPB Contractors and Ghella JV, please note that the following plans for the Station Boxes and Tunnelling Works (Sydney Metro Western Sydney Airport) will be finalised on 25 August 2022.

- *SBT NSW Construction Noise and Vibration Mgt Sub-Plan_Rev A (includes monitoring program) (CoA C5 and C13)*
- *Air Quality management and monitoring procedure (CoA C13)*
- *SBT NSW Soil and Water Management Sub-Plan_Rev A (including the Surface Water Quality Monitoring Program, Rev B) (Condition CoA C5 and C13)*

Kind regards,
Denise

Denise Corish
Manager, Environmental Performance and Assurance

M: 0448 039 552
78 Denison Street
Bondi Junction NSW 2022
denise.corish@treoenvironment.com
www.treoenvironment.com

Annexure I Environmental Representative Endorsement