Sydney Metro Western Sydney Airport – CSSI Staging Report

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Revision	Revision Date	Status	Brief Reason for Version	Author Company / Position	Approver Company / Position
1.0	26 July 2021	Final	Submit for ER review and endorsement	Senior Manager Planning Approvals _- WSA, Sydney Metro	Director Environment, Sustainability and Planning – WSA, Sydney Metro
2.0	8 August 2021	Final	Address ER comments and update risk assessments	Senior Manager Planning Approvals _- WSA, Sydney Metro	Director Environment, Sustainability and Planning – WSA, Sydney Metro
3.0	16 August 2021	Final	Address ER comments on risk assessments	Senior Manager Planning Approvals _- WSA, Sydney Metro	Director Environment, Sustainability and Planning – WSA, Sydney Metro
4.0	24 August 2021	Final	Finalise response to ER comments	Senior Manager Planning Approvals _- WSA, Sydney Metro	Director Environment, Sustainability and Planning – WSA, Sydney Metro
5.0	7 February 2022	Final	Update to staging of project	Senior Manager Planning Approvals _- WSA, Sydney Metro	Director Environment, Sustainability and Planning – WSA, Sydney Metro
6.0	12 July 2022	Final	Update to staging of project	Senior Manager Planning Approvals _- WSA, Sydney Metro	Director Environment, Sustainability and Planning – WSA, Sydney Metro
7.0	30 Sept 2022	Final	Correction of minor inconsistencies including update of SBT risk assessment	Senior Manager Environment _- WSA, Sydney Metro	Director Environment, Sustainability and Planning – WSA, Sydney Metro

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1. Definitions and Abbreviations

All terminology in this report is taken to mean the generally accepted or dictionary definition, except where defined in any applicable planning approvals. Relevant acronyms, abbreviations and terms used throughout this report are explained in Table 1-1.

Table 1-1: Acronym, Abbreviation and Term Explanations

Acronym / term	Term
AEW	Advanced and Enabling Works
CEMF	Construction Environmental Management Framework
CEMP	Construction Environmental Management Plan
CoA	Conditions of Approval
Construction	As defined in the CSSI Planning Approval (SSI 10051)
CSSI	Critical State Significant Infrastructure
EIS	Environmental Impact Statement
EPO	Environmental Performance Outcome
EP&A Act	Environmental Planning and Assessment Act 1979 (NSW)
ER	(Independent) Environmental Representative
IPO	Integrated Project Office
Low Impact Works	As defined in the CSSI Planning Approval (SSI 10051)
MSF	Maintenance and Services Facility
Planning Secretary	The Secretary of the NSW Department of Planning, Industry and Environment
REMM	Revised Environmental Mitigation Measure
SBT	Station Boxes and Tunnelling
SCAW	Surface and Civil Alignment Works
SM	Sydney Metro
SMWSA	Sydney Metro Western Sydney Airport
SSTOM	Stations, Systems, Trains and Operations and Maintenance
TfNSW	Transport for New South Wales

2. Introduction

2.1. Purpose of this Report

This report has been prepared and structured to address the Staging Report requirements of the Conditions of Approval (CoA) A10 to A16 and to inform CoA C2, C7 and C17 of the Sydney Metro Western Sydney Airport (SMWSA) planning approval (SSI 10051). Updates will be made as required, particularly following any changes to the delivery strategy and any modifications to the planning approval. Where the Staging Report is amended it will be provided to the Planning Secretary for information.

Table 2-1 cross-references sections in this report that address each CoA requirement relating to the Staging Report.

Table 2-1: Relevant Staging Report requirements from SSI 10051

Planning Approval Condition	Requirement	Staging Report Section
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 commencement of operation of the first of the proposed stages of operation), unless otherwise agreed with the Planning Secretary.	This document
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	a) Section 3.2 b) Section 3.2 c) Appendix B and C d) Section 3.6 e) Appendix F, G, H and I ER endorsement – Appendix J

Planning Approval Condition	Requirement	Staging Report Section
	(e) for the purposes of informing Conditions C2, C7, 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: 2009; Risk Management - Principles and 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*	
A12	The CSSI must be staged in accordance with the Staging Report, as submitted to the Planning Secretary for information.	Section 3.1
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.	Appendix B ,C and D
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 3.1
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 5.1.3

Planning Approval Condition	Requirement	Staging Report Section
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.*	Note: general administrative condition that applies to staged submission of documents rather than preparation of the Staging Report
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 CEMPs may be endorsed by the ER.*	Sections 4.3.1-4.3.5
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 4.3.4
C7	With the exception of any CEMP Sub-plans expressly nominated by the Planning Secretary to be endorsed by the ER, all CEMP Sub-plans must be submitted to the Planning Secretary for approval.	Section 4.3.4

Planning Approval Condition	Requirement	Staging Report Section
C8	The CEMP Sub-plans 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 relevant undertakings made in the documents listed in Condition A1. Any of these CEMP Sub-plans must be submitted to the ER 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.	Section 4.3.4
C9	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.	Section 4.3.4
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 4.3.1
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 allundertakings 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 4.3.4
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 4.3.4

2.2. Background

Sydney Metro – Western Sydney Airport (the project) will involve a new metro railway line around 23 kilometres in length between St Marys in the north and the Aerotropolis Core precinct in the south (the area to be called Bradfield). This will include a section of the alignment which passes through and provides access to Western Sydney International (Nancy-Bird Walton) Airport (Western Sydney International), currently under construction.

Key operational features of the project include:

- around 4.3 kilometres of twin rail tunnels (generally located side by side) between St Marys (the northern extent of the project) and Orchard Hills
- a cut-and-cover tunnel around 350 metres long (including tunnel portal), transitioning to an in-cutting rail alignment south of the M4 Western Motorway at Orchard Hills
- around 10 kilometres of rail alignment between Orchard Hills and Western Sydney International, consisting of a combination of viaduct and surface rail alignment
- around two kilometres of surface rail alignment within Western Sydney International
- around 3.3 kilometres of twin rail tunnels (including tunnel portal) within Western Sydney International
- around three kilometres of twin rail tunnels between Western Sydney International and the Aerotropolis Core
- six new metro stations:
  - four off-airport stations:
    - St Marys (providing interchange with the existing Sydney Trains suburban rail network)
    - Orchard Hills
    - Luddenham Road
    - Aerotropolis Core
  - two on-airport stations:
    - Airport Business Park
    - Airport Terminal
- grade separation of the track alignment at key locations including:
- where the alignment interfaces with existing infrastructure such as the Great Western Highway, M4 Western Motorway, Lansdowne Road, Patons Lane, the Warragamba to Prospect Water Supply Pipelines, Luddenham Road, the future M12 Motorway, Elizabeth Drive, Derwent Road and Badgerys Creek Road
- crossings of Blaxland Creek, Cosgroves Creek, Badgerys Creek and other small waterways to provide flood immunity for the project

- modifications to the existing Sydney Trains station and rail infrastructure at St Marys (where required) to support interchange and customer transfer between the new metro station and the existing Sydney Trains suburban rail network
- a stabling and maintenance facility and operational control centre located to the south of Blaxland Creek and east of the proposed metro track
- new pedestrian, cycle, park-and-ride and kiss-and-ride facilities, public transport interchange infrastructure, road infrastructure and landscaping as part of the station precincts.

The project would also include:

- turnback track arrangements (turnbacks) at St Marys and Aerotropolis Core to allow trains to turn back and run in the opposite direction
- additional track stubs to the east of St Marys Station and south of Aerotropolis Core Station to allow for potential future extension of the line to the north and south respectively without impacting future metro operations
- an integrated tunnel ventilation system including services facilities at Claremont Meadows and Bringelly
- all operational systems and infrastructure such as crossovers, rail sidings, signalling, communications, overhead wiring, power supply, lighting, fencing, security and access tracks/paths
- retaining walls at required locations along the alignment
- environmental protection measures such as noise barriers (if required), on-site water detention, water quality treatment basins and other drainage works.

Off-airport project components

The off-airport components of the project will include the track alignment and associated operational systems and infrastructure north and south of Western Sydney International, four metro stations, the stabling and maintenance facility, two services facilities and a tunnel portal.

On-airport project components

The on-airport components of the project will include the track alignment and associated operational systems and infrastructure within Western Sydney International, two metro stations and a tunnel portal. The on-airport components are subject to approvals from the Commonwealth and are not dealt with in this report.

The key project features as described are indicative only and subject to design development in accordance with the process identified in Chapter 6 (Project development and alternatives) of the Environmental Impact Statement.

Key operational features of the project are shown on Figure 1.

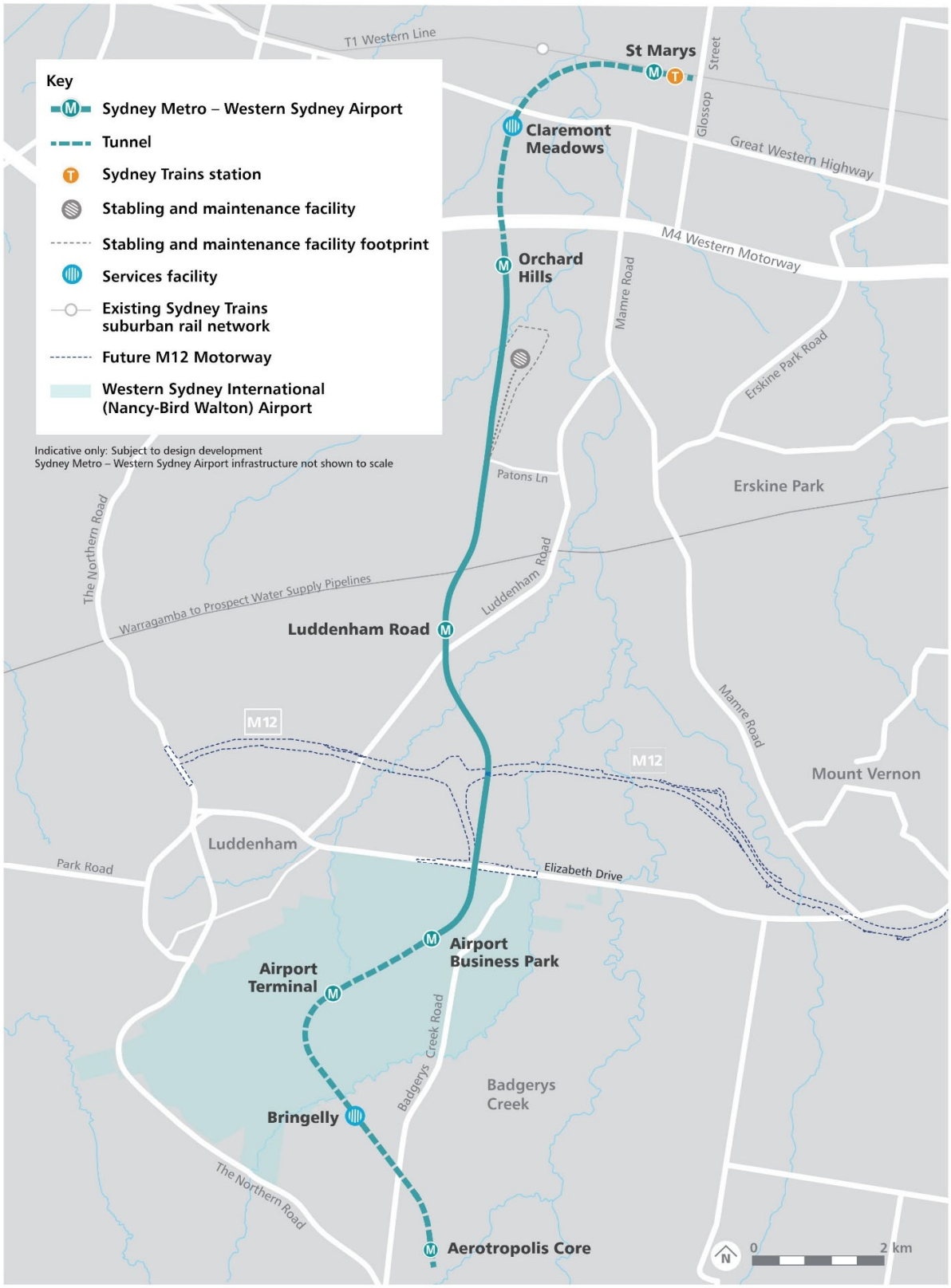

Figure 1: Overview of the project

2.3. Western Sydney Airport Planning Approvals

The three principal statutory schemes that govern the planning and assessment process for the project are:

- the *Environmental Planning and Assessment Act 1979* (NSW) (EP&A Act) - applies to works located on State land outside the boundary of Western Sydney International (off-airport)
- the *Airports Act 1996* (Cth) (Airports Act) - applies to works located within the boundary of Western Sydney International (on-airport)
- the *Environmental Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act):
    - for works located north of Western Sydney International (off-airport), assessment and approval is required under Part 8 and 9 of the EPBC Act to address impacts on listed threatened species and communities and Commonwealth land
    - for the lands located south of Western Sydney International (off-airport), impacts on matters of national environmental significance (MNES) and Commonwealth land have already been assessed and approved under a strategic assessment in accordance with Part 10 of the EPBC Act.

Figure 2 shows the statutory approval regime applicable to different areas of the project areas. This report addresses requirements under the EP&A Act planning approval.

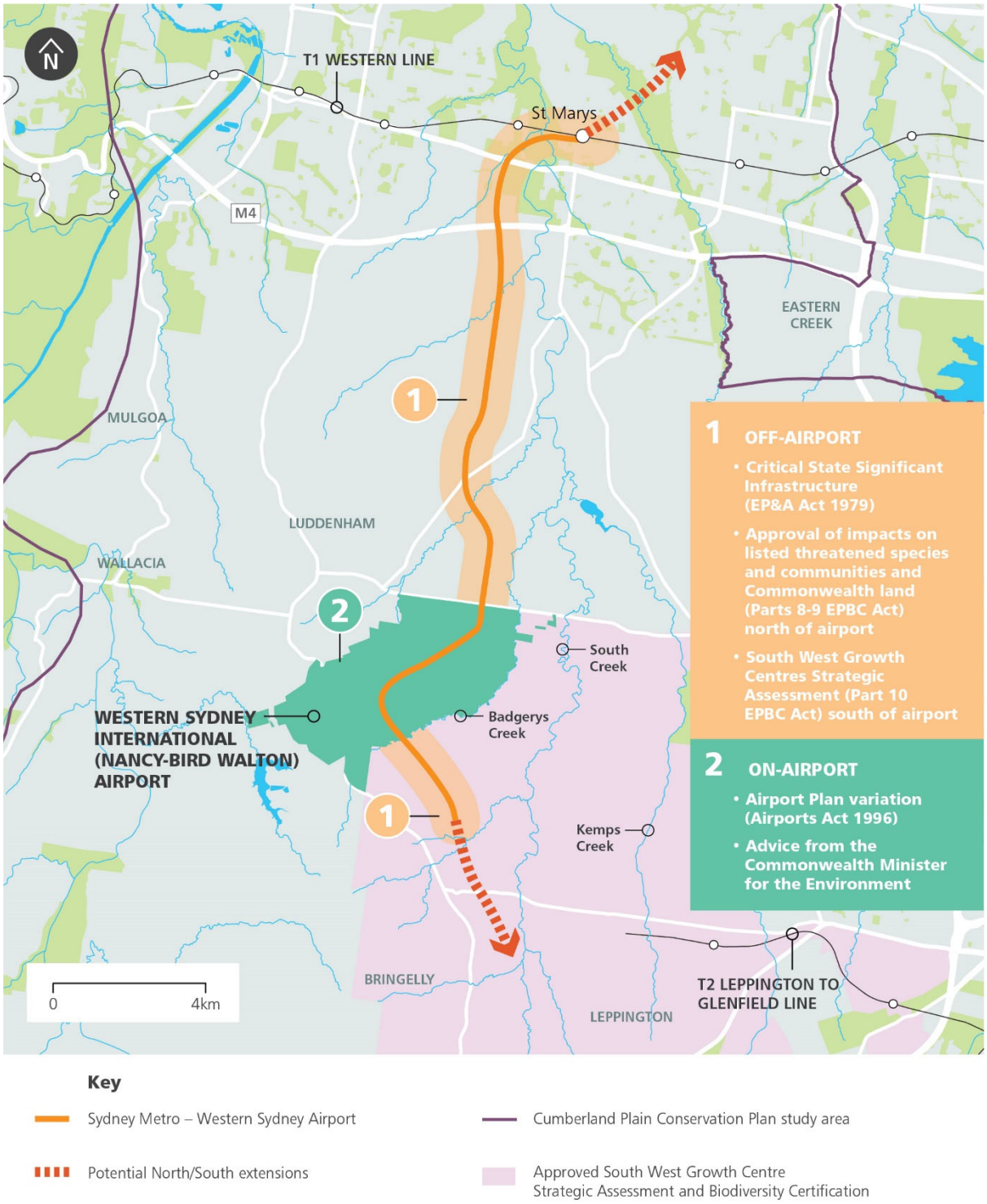

Figure 2 -Sydney Metro Western Sydney Airport Planning Approval Strategy

2.3.1. Related development

The EIS included reference to related development that does not form part of the CSSI and will be subject to separate assessment and planning approvals, including:

- relocation of high voltage power and demolition of incident management centre within rail corridor at St Marys to be undertaken by Sydney Trains
- addition of two levels of commuter car parking at St Marys multi-storey commuter car park to be undertaken by Transport for NSW
- intersection upgrade work at intersection of Gipps Street and Sunflower Drive (north), Claremont Meadows to be undertaken by Transport for NSW
- works to allow permanent access to the rail corridor in St Marys on Glossop Street, St Marys to be undertaken by Transport for NSW
- utility infrastructure (such as road, water, power or other utilities) that may be provided to support the broader Western Parkland City and could be used by the project for construction or operational purposes.

This related development is not subject to the CSSI CoA or this Staging Report.

2.3.2. Exempt and complying development

Exempt development does not require assessment under Part 4 or Part 5 of the EP&A Act. Exempt development is defined in the *State Environmental Planning Policy (Infrastructure) 2007* (ISEPP), the *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008* and under relevant Local Environmental Plans. The Exempt and Complying Codes SEPP also defines complying development. In situations where work is carried out as exempt or complying development, the requirements of the CSSI planning approval do not apply.

Examples of exempt activities already carried out are archaeological, geotechnical and utility investigations to inform the environmental assessment and design of the project. Other exempt development includes demolition of certain structures, installation of fencing and design investigations. Examples of complying development include property maintenance activities where Sydney Metro is the landowner.

Each Stage may utilise exempt provisions available under the ISEPP, Exempt and Complying Development Codes SEPP and other planning instruments, subject to due diligence and environmental assessments of exempt development works being undertaken by Sydney Metro and its contractors prior to works commencing.

3. Project Staging

3.1. Overview

The delivery strategy for SMWSA continues to be refined following feedback received from stakeholder and industry consultation. The project's delivery strategy outlines how Sydney Metro will engage with the market to deliver the project in consideration of sequencing, timing and duration, geographic presence, funding, risk, construction methodology and market-related constraints.

Delivery strategy:

Sydney Metro Western Sydney Airport will be delivered by multiple delivery partners (Principal Contractors). The Delivery Strategy outlines how Sydney Metro will engage with the market to deliver the project in consideration of sequencing, timing and duration, geographic presence, funding, risk, construction methodology and market-related constraints.

Each delivery partner and Sydney Metro are responsible for complying with relevant requirements of any planning approvals that apply to the project. An allocation of responsibilities is defined in contracts between Sydney Metro and delivery partners.

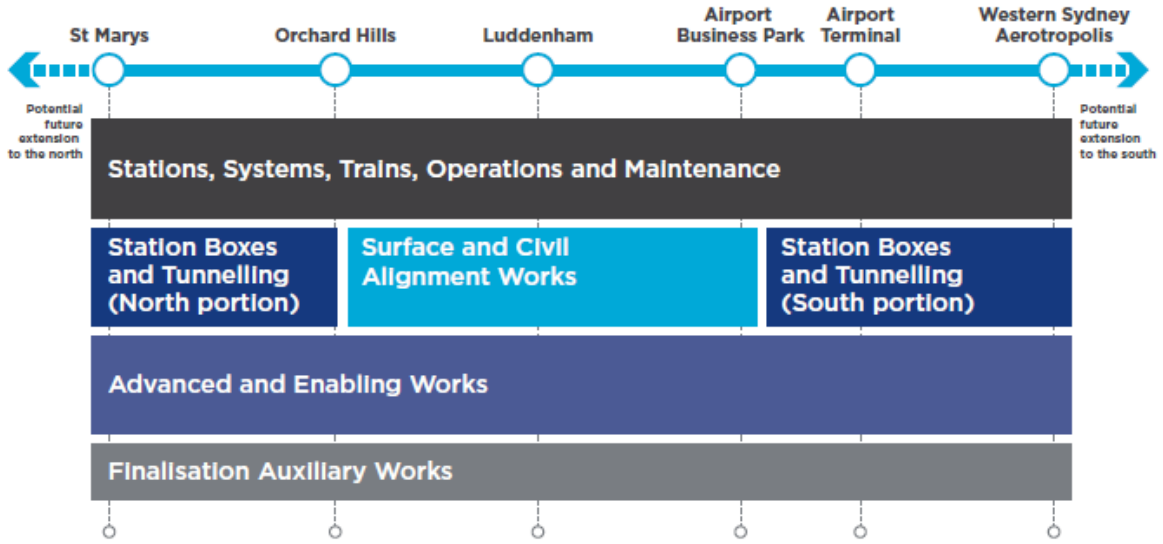

Figure 3 - Sydney Metro Western Sydney Airport Delivery Strategy

3.2. Construction stages

3.2.1. Advanced and Enabling Works (AEW)

Enabling works for the project are required to establish key construction sites and facilitate construction activities. The majority of the enabling works are expected to commence in advance of the main construction works, such as tunnelling and station excavation, while some enabling works would continue concurrently with the main construction works.

Activities within the AEW stage includes construction of:

- enabling works such as site investigation, clearance, demolition and modifications to the existing transport network (such as roads, bus interchanges, lift shaft relocation);
- power supply for Tunnel Boring Machines (TBMs)
  - from Claremont Meadows Substation to Orchard Hills Intermediate Services Facility, with associated underbores under the M4 Motorway at Kent Road;
  - from Kemps Creek Substation to the Western Sydney Airport site with associated underbores under Kemps Creek;
- construction power supply for the below sites:
  - St Marys;
  - Claremont Meadows Services Facility;
  - Airport Business Park;
  - Southern Intermediate Services Facility; and
  - Aerotropolis;
- construction water supply for the below sites:
  - Airport Business Park; and
  - Aerotropolis;
- stormwater diversion at St Marys adjacent to the railway station;
- construction of a pedestrian footbridge between the new St Marys Metro station, Harris Street car-park and existing Sydney Trains platforms at St Marys;
- some demolition works;
- a temporary Integrated Project Office (IPO) at St Marys, to be utilised for the duration of the project;
- concurrent management of work sites; and
- utility diversions and connections as required to facilitate the project, including installation of a new gas main from the on-airport component of the project (subject to separate planning approval) and the existing connection at the intersection of Martin Road and Cuthel Road, Badgerys Creek.

Due to the broad range of activities that will be undertaken within the AEW stage, and the different contractors involved in delivering them, for the purposes of this report and demonstrating compliance with the CSSI planning approval, AEW has been broken into the following sub-stages based on the activities that will be undertaken by different contractors. The naming of the sub-stages reflects the nature of the activities, as follows:

- AEW - Demolition
- AEW – Gas

- AEW - IPO
- AEW – Power
- AEW – Roadworks
- AEW – Footbridge St Marys
- AEW – St Marys Station Lift Relocation
- AEW – St Marys Temporary Bus Interchange
- AEW – Water

As discussed in Section 2.3.1, utility infrastructure (such as road, water, power or other utilities) may also be undertaken under separate assessment and planning approvals in support the broader Western Parkland City and could be used by the project for construction or operational purposes. These works are not considered within the AEW scope that is documented within this Staging Report.

3.2.2. Station Boxes and Tunnelling (SBT)

The SBT stage includes construction of:

- two sections of twin running, tunnel boring machines (TBM), tunnels with a total combined length of approximately 9.8 km, plus associated portal dive structures and tunnel support activities (approximately 6.8km of the running tunnels are located within the land covered by this report)
- station box excavations with temporary ground support at St Marys, Orchard Hills, Western Sydney Airport Terminal (located on land outside of the scope of this report), Western Sydney Aerotropolis and two intermediate service facilities located in Claremont Meadows and Bringelly, one in each of the tunnel sections.

The tunnel and excavation method will be driven by ground conditions likely to be encountered during construction, the project design and program. The methodology described below is indicative and would be developed by the construction contractor(s) when appointed.

Tunnel excavation methodologies for the project will include:

- bored tunnels for the St Marys to Orchard Hills tunnel and the Western Sydney International to Bringelly tunnel
- other techniques including the use of roadheaders or excavators to excavate station boxes, shafts, cross-passages and tunnel stubs.

Construction for the SBT works package has been broken down into activity-based staging, with construction environmental management documentation also reflecting this activity-based staging. The naming of the activity-based sub-stages reflects the nature of the activities:

- SBT - Preparatory Works
    - delivery of materials and equipment to site

- installation of environmental mitigation measures and controls, including erosion and sediment controls and noise barriers, where required
- Non-Aboriginal archaeological investigations and if triggered salvage works at the western end of the St Marys Station Box
- demolition
- vegetation clearing
- site access and other local area works such as property adjustments to access roads, roadways, footpaths, driveways and boundaries
- site establishment works such as fencing, establishment of internal access road, hardstand areas and installation of demountable buildings and amenities
- site levelling/grading, including flood mitigation and drainage
- contamination remediation works and offsite disposal including underground storage tanks and cattle dipping site(s)
- piling and foundation works, including delivery of piling equipment and installation of piling pads
- utility and temporary services work, erection of demountable buildings and noise barriers and
- use of ancillary facilities including onsite parking

- SBT - Bulk Excavation and Tunnelling Works
  - Preparatory Works scope (not completed prior to ER endorsement of the nominated construction environmental management documentation and Planning Secretary approval of the remaining nominated construction environmental management documentation, as set out in Section 4.3.4)
  - remaining temporary piling and permanent piling
  - bulk excavation
  - acoustic shed installation, where required
  - mined and TBM tunnelling and cross passage construction
  - decommissioning of elements that are not handed over to follow-on contractors

In accordance with Condition A11, these activity-based sub-stages have been subject to the risk assessment process outlined in Section 4, with the outcomes of this assessment documented in Appendix G

3.2.3. Surface and Civil Alignment Works (SCAW)

The project will include the construction of bridges and viaducts to cross floodplains, watercourses and existing and proposed permanent infrastructure.

The SCAW stage includes construction of:

- approximately 3.7 kilometres of viaduct structures in three sections
- approximately 6.7 kilometres of formation for the support of on grade railway track in six sections including embankments and cuttings:
- M12 Rail Overbridge, including foundations, bearings, abutments and superstructure.
- Western Sydney Airport drainage swale overbridge, including foundations, bearings, abutments, transitions, superstructure and interfaces with the M12, Elizabeth Drive and Airport access roads.
- civil work for the stabling and maintenance facility at Orchard Hills including earthworks.
- temporary and permanent access roads.

It is anticipated the viaducts and bridges would be constructed using cast in-situ concrete piles, columns and headstocks with precast girders between the columns. The precast viaduct and bridge sections would be manufactured and stored at a dedicated precast facility within Western Sydney International. The precast sections would be transported via trucks on the road network.

The viaduct and bridge construction method would include:

- substructure construction, likely to be from cast in-situ concrete in the following sequence:
  - bored pile construction
  - pile cap construction including localised excavation
  - pier or column construction
  - headstock construction
- construction of the superstructure, likely through the placement of precast concrete segments (typically through the use of a viaduct gantry or crane).

Cast in-situ construction may be employed where the design or the presence of existing infrastructure precludes the use of precast bridge or viaduct segments.

Earthworks (for example, cuttings and embankments) will also be required at locations along the project alignment to achieve required levels for the surface track alignment.

Construction for the SCAW package has been broken down into activity-based staging, with construction environmental management documentation also reflecting this activity-based staging. The naming of the activity-based sub-stages reflects the nature of the activities:

- SCAW – Preparatory Works
  - site establishment works such as fencing, establishment of internal access road, hardstand areas and installation of demountable buildings and amenities for the stabling and maintenance facility at Orchard Hills and the off-airport construction corridor compounds at Elizabeth Drive and M12 bridge
  - installation of environmental mitigation measures and controls, including erosion and sediment controls at the stabling and maintenance facility at Orchard Hills and the off-airport construction corridor compounds at Elizabeth Drive and M12 bridge

- minor vegetation clearing (minimising to the greatest extent practicable the amount of native vegetation that is removed until the Main Excavation and Viaduct Works commence) to establish the stabling and maintenance facility at Orchard Hills and the off-airport construction corridor compounds at Elizabeth Drive and M12 bridge.
- civil work set up for the stabling and maintenance facility at Orchard Hills, which will including clearing and grubbing of a portion of the permanent project footprint, temporary access tracks and stockpiling and stockpiling of imported material
- delivery of materials and equipment to site, including the importation of fill material at stabling and maintenance facility at Orchard Hills
- temporary stockpiling of about 300,000 tonnes of topsoil and fill material at stabling and maintenance facility at Orchard Hills
- contamination remediation works at the stabling and maintenance facility at Orchard Hills and the off-airport construction corridor compounds at Elizabeth Drive and M12 bridge (if identified) and offsite disposal (if required)
- use of ancillary facilities including onsite parking

- SCAW – Main Excavation and Viaduct Works
  - Preparatory Works scope (not completed prior to ER endorsement of the nominated construction environmental management documentation and Planning Secretary approval of the remaining nominated construction environmental management documentation, as set out in Section 4.3.4)
  - viaducts and bridges construction
  - works within riparian zones
  - native vegetation clearing at all other areas not listed in the SCAW – Preparatory Works above
  - bulk excavation
  - decommissioning of elements that are not handed over to follow-on contractors

3.2.4. Stations, Systems, Trains and Operations and Maintenance (SSTOM)

The SSTOM stage will include:

- station design and fit out, urban and landscape design, precinct and transport integration works;
- finishing works and testing and commissioning;
- operation of the Western Sydney Airport metro service

3.2.5. Finalisation Auxiliary Works (FAW)

The FAW stage is still being developed at the time of this report. In accordance with CoA A14, the Staging Report will be revised to include detail on the FAW stage when this information is

available. The revised Staging Report will be submitted to the Planning Secretary for information prior to commencement of the FAW stage.

3.2.6. Operation stages

Staged operation is not currently proposed.

The Stations, Systems, Trains and Operations (SSTOM) stage is the only stage of the project with an operational component (i.e. the project comprises of only one operational stage).

3.3. Indicative timing

Table 3-1 provides an indicative construction timeframe for each SMWSA stage.

Table 3-1: Indicative timeframes for each stage (timings subject to change)

Stage	Construction Commencement Date (bold indicates completed dates) *(italics indicates indicative future dates that are subject to change)*	Construction Completion Date (bold indicates completed dates) *(italics indicates indicative future dates that are subject to change)*
AEW	*Q4 2021*	*Q4 2022*
SBT	*Q1 2022*	*Q4 2024*
SCAW	*Q2 2022*	*Q2 2025*
SSTOM	*Q4 2024*	*Ongoing*

3.4. Works outside of stages

Some low impact works will be undertaken outside of the stages identified in this report.

Where works are undertaken outside of the stages identified but are still subject to CSSI planning approvals, these 'Low Impact (Minor) Works' will not be defined as 'Construction' in accordance with the definition of 'Construction' provided in the CSSI planning approval.

Low Impact (Minor) Works will only occur after the following activities have been undertaken:

- consideration of relevant regulatory requirements
- identification of relevant Conditions of Approval (CoA)s, Environmental Performance Outcomes (EPOs) and Revised Environmental Mitigation Measures (REMMs)
- preparation of a Low Impact (Minor) Works Approval Form by the relevant contractor and approval by Sydney Metro to confirm that the works do not represent 'Construction' in accordance with the applicable planning approval. This application must include (as a minimum):
  - a detailed description of the proposed works,
  - an environmental risk assessment (including identification of actual and potential environmental impacts),
  - identification of mitigation measures to be implemented to address any actual or potential environmental risks and/or impacts (including details on community consultation relevant to the works),

- an Environmental Control Map, and
- endorsement by the Environmental Representative as necessary in accordance with the nature of the Low Impact (Minor) Works and/or the definition of 'Construction' in the CSSI planning approval.

3.5. Applicability and allocation of requirements to project stages

3.5.1. Conditions of Approval, Environmental Performance Outcomes and Revised Environmental Mitigation Measures

The applicability of the CoA, EPO and REMM to each stage and sub-stage of the WSA project are tabled in Appendix B, C and D respectively. Where a requirement is shown to be applicable this means that Sydney Metro, in collaboration with the relevant delivery partner for that Stage, will comply with that requirement during the delivery of work under that Stage.

- where a CoA, EPO or REMM has been determined to be applicable to a stage, it is defined as **Applicable** to that stage. This indicates that the CoA, EPO or REMM will be reviewed and assessed for compliance during the stage.
- where a CoA, EPO or REMM is not applicable to the stage, it is defined as **Not Applicable**. This indicates that the CoA, PO or REMM will not be reviewed and assessed for compliance during the stage.
- where only part of a CoA, EPO or REMM is applicable to the stage, it is defined as **Partial**. This indicates that at least an element of the CoA, EPO or REMM will be reviewed and assessed for compliance during the stage (to the degree explained in Appendix B, C and D).

The CoA, EPO and REMM allocation is then further refined for relevance to the current scope of works during the development of the CEMP and sub-plans. Where a CoA or REMM is deemed not to be relevant to the current scope of works, this will be noted in the CEMP and/or relevant sub-plan/s. Allocation of CoAs, EPOs or REMMs may also be updated through the compliance review process.

In the event of a change to a stage's scope of works, the stage's applicable CEMP and sub-plans will be reviewed and updated as required based on the relevance of the applicable CoA, EPO and REMM to the stage. Where a plan is required to be updated, the updated document will be approved by either the ER (in accordance with CoA A32(j)) or the Planning Secretary (in accordance with CoA C2).

In relation to the requirements of CoA E4, E5, E6 and E7, the applicability of these CoA as set out in this report is consistent with provisions under the *Biodiversity Conservation Act,* which notes that if a requirement to retire credits applies to a stage of a project, then that requirement is postponed until it is proposed to carry out that stage. To give effect to CoA E2, prior to any clearing of native vegetation within a particular stage, the pre-clearing inspection and post-clearing reporting processes outlined in Section 10.2b of the CEMF will be implemented. The pre-clearing inspection process will provide confirmation of the extent of native vegetation clearance to occur within that stage and inform the retirement of required credits prior to commencement of the clearing. For clarity, this means that only the confirmed number of credits required for each stage of works will be retired prior to commencing clearing of native vegetation for that stage.

3.5.2. Construction Environmental Management Framework

Consistency in environmental management across each stage of the project will be achieved through the implementation of the *Sydney Metro Western Sydney Airport Construction Environmental Management Framework* (CEMF). The CEMF formed part of the Sydney Metro Western Sydney Airport planning approval documents and provides a linking document to CEMPs and Sustainability Management Plans (produced by contractors). Construction traffic impacts will be managed through the implementation of the *Sydney Metro Western Sydney Airport Construction Traffic Management Framework* (CTMF) which is a standalone document as are Construction Traffic Management Plans which are prepared and implemented in accordance with the CTMF.

The CEMF details the environmental, stakeholder and community management systems and processes to be implemented throughout construction of the project. More specifically, it details Sydney Metro's minimum requirements for:

- CEMPs and sub-plans,
- Sustainability Management Plans (SMPs) and sub-plans,
- other supporting documentation for each environmental management category (e.g. noise and vibration, visual amenity
- Construction Workforce Development and Industry Participation Plan.

Compliance with the CEMF will help achieve the environmental performance outcomes for the project. These performance outcomes outline the broader objectives to be achieved by Sydney Metro in the design, construction and operation of the project.

3.6. Cumulative impacts

As outlined in Chapter 24 of the Environmental Impact Statement, cumulative impacts may occur during construction stages when projects are constructed or operated concurrently or consecutively. Generally, cumulative impacts would be expected to occur where multiple long-duration construction activities are undertaken close to, and over a similar timescale to, construction activities for the project, or where consecutive construction occur in the same area.

No cumulative impacts are expected to be generated as a result of the proposed staging of the project (i.e. there are not expected to be any cumulative impacts generated as a result of delivering the project through multiple stages / contractors, compared to delivering the project through one stage / contractor). This is due to the construction contract packages being mostly geographically or chronologically separated and staged operation not currently being proposed. The potential for cumulative impacts will be continually monitored by Sydney Metro and the ER during construction, and appropriate mitigation measures will be considered and implemented if required.

4. Risk assessment

The risk assessments documented in this Staging Report have been undertaken within a framework that includes the Sydney Metro Risk Management Standard, the EIS risk analysis, CEMF risk-based approach to streamlining CEMP and CEMP sub-plan requirements and the Staging Report risk assessment requirements of the Sydney Metro- Western Sydney Airport planning approval.

4.1. Sydney Metro risk framework

Sydney Metro is committed to implementing structured, integrated, systematic and proactive risk management to improve its performance and inform decisions which support the achievement of objectives and the prevention of harm. The purpose of the Sydney Metro Risk Management Standard (the Risk Standard) is to define and communicate Sydney Metro's approach, process and procedure in relation to risk management. The Standard is applicable to all functions, projects, operations and activities undertaken by Sydney Metro, including preparation of this report. The Risk Standard is aligned with AS/NZS ISO 31000: 2018; Risk Management.

The Sydney Metro core risk management process, includes:

- Step 1: Establish Context
- Step 2: Risk Identification
- Step 3: Risk Analysis
- Step 4: Risk Evaluation
- Step 5: Risk Treatment
- Step 6: Monitoring, Review and Reporting
- Step 7: Risk Occurrence

Refer to Appendix A for the risk assessment matrix and consequence table that forms part of the Risk Standard.

4.2. Environmental Impact Statement risk analysis

The intent of the Environmental Impact Statement (EIS) environmental risk analysis (assessment) was to identify broad environmental risks associated with the project as a whole by building upon the preliminary environmental risk analysis in the Sydney Metro – Western Sydney Airport Scoping Report. The EIS risk analysis identified a number of risks that required further investigation and implementation of project-specific mitigation measures and performance outcomes. Following consideration of these mitigation measures and performance outcomes, the residual environmental risk was rated for the construction and operation phases of the project. The EIS identified high residual risks during construction for the following topics:

- traffic and transport
- noise and vibration
- biodiversity

- land use and property
- social and economic
- cumulative impacts

4.3. Post approval risk assessment

The planning approval for WSA requires:

- the Staging Report to include an assessment of the predicted level of environmental risk and community concern posed by the construction activities required to construct each stage of the project (Condition A1)
- CEMPs and sub-plans to be prepared in accordance with the CEMF (Condition C1)

This section discusses the implementation of these requirements.

4.3.1. Assessment of predicted environmental risk and potential community concern

For the purposes of informing CoA C2, C7, C17 under the CSSI planning approval, the construction phase residual risks identified in the EIS have been subject to further assessment of the predicted level of environmental risk and potential level of community concern posed by the construction activities that will be undertaken within each stage of the CSSI. For consistency, the risk categories used in the EIS risk analysis have been used in this further assessment.

CoA C2, C7, C17 provide a mechanism for the Planning Secretary to expressly nominate which construction environmental management plans, sub-plans and monitoring programs require the approval of the Planning Secretary, following the outputs of the CEMF risk assessment.

Environmental risk

Initially the EIS project-wide residual risk rating was considered on a stage by stage basis, to assess the inherent (un-mitigated) risk for each stage within the more detailed risk context for the specific activities that will be completed as part of that stage or sub-stage.

The risk assessment to inform CoA C2, C7 and C17 then applied the Sydney Metro Risk Standard and considered:

- the risk context for each construction stage, including duration of potential impacts
- application of revised environmental performance outcomes and mitigation measures, as documented in the Submissions Report
- additional environmental information and data that has been gathered since the exhibition of the EIS and publication of the Submissions Report
- application of available management system controls and appropriate review and approval processes
- level of community concern raised in submissions made during public exhibition of the EIS

- level of certainty over development of detailed design and construction planning and how relevant planning approval requirements will be implemented

This process has either confirmed or re-categorised the residual risk for each environmental aspect, as applied to each of the construction stages rather than project-wide.

Community concern

A total of 40 submissions were received during the public exhibition of the EIS, of which a total of 25 came from community members and community interest groups. Submitter locations for the community submissions were:

- Penrith Local Government Area: 4 submissions
- Liverpool Local Government Area: 3 submissions
- outside of the project area:18 submissions

Concerns raised in these submissions that are relevant to the documents required under CoA C2, C7 and C17 include:

- construction noise and vibration
- parking impacts at St Marys
- flooding impacts
- ground movement
- traffic impacts
- air quality impacts
- biodiversity impacts on native vegetation and riparian areas
- property and land use impacts, including access and acquisition

Based on the number of submissions received and the location of the submitters, the potential level of concern within the communities in which the project will be constructed is considered to be low for the purposes of the risk assessment under CoA A11(e).

The concerns raised in submissions are discussed in more detail in the project's Submissions Report and have been considered as part of the post approval risk assessment.

4.3.2. CEMF environmental management requirements

For the purposes of ensuring compliance with the planning approval conditions and structural consistency between the CEMF requirements and associated sub-plans, Principal Contractors are required to prepare the following management plans:

- **Construction Environmental Management Plan**, which may comprise of:
  - Spoil Management Sub-Plan
  - Groundwater Management Sub-Plan
  - Noise and Vibration Management Sub-Plan

- Heritage Management Sub-Plan
- Flora and Fauna / Biodiversity Management Sub-Plan
- Visual Amenity Management Sub-Plan
- Soil and Water Management Sub-Plan
- Air Quality Management Sub-Plan

- **Sustainability Management Plan** as a stand-alone document which may comprise of:
  - Carbon and Energy Management Sub-Plan
  - Materials Management Sub-Plan
  - Waste (and Recycling) Management Sub-Plan
- **Construction Workforce Development and Industry Participation Plan,** as a stand-alone document which may comprise of:
  - Aboriginal Participation Sub-Plan

Under the SMWSA framework construction traffic is managed through the Construction Traffic Management Framework which is separate to the CEMF. This is reflected in the CoA which require Construction Traffic Management Plans (CTMPs) to be prepared as stand-alone documents. For this reason CTMP review, endorsement and approval is not discussed in this report.

Potential traffic impacts have however been included in the post approval risk assessments to provide a broad consideration of issues that may cause environmental risk and/or community concern.

4.3.3. Streamlining CEMP and sub-plan requirements

The CEMF includes a process by which Sydney Metro may streamline the CEMP and sub-plan requirements depending on the scope and scale of the works within each stage and sub-stage, and for this to be documented in the Staging Report. For example, depending on the risk associated with particular environmental issues or level of certainty over management approach it may be appropriate to remove the need for a sub plan, or replace with a procedure as part of the CEMP. The assessment of predicted environmental risk and potential community concern has been used to inform this streamlining process and subsequent recommendations as to which CEMPs, CEMP sub-plans and monitoring programs do not require the approval of the Planning Secretary.

This Staging Report recommends that the Planning Secretary only holds an approval role where the residual risk is 'High' or 'Very High' for specified CEMPs, sub-plans and/or monitoring programs, which is discussed in more detail below. Refer to Appendix F - I for risk context and assessment for each stage and sub-stage.

WSA contractors are required to adhere to and implement the requirements of the CEMF to a degree that is appropriate to the applicable stage of construction/operation, including the CEMP and sub-plan requirements set out in this report. The different applicability of the CEMF to each stage allows for effective and efficient management of environmental issues that is commensurate to the potential impacts of each stage on each environmental management category (refer to Section 2.2 and 3.4(b) of the CEMF). The requirements of the CEMF have

been allocated to each stage of the project by indicating the applicability of each section of the CEMF to each stage. These allocations are provided in Appendix E.

Table 4-1 and Table 4-2 indicates the applicability of the requirements relating to each CEMF environmental management category to each stage of the project. This includes, as a minimum, for each environmental management category (from the highest risk level to the lowest residual risk level):

- whether a stand-alone 'CEMP sub-plan', 'SMP sub-plan' or 'WFDIP Plan' will be prepared, based on residual risk levels of 'High' or 'Very High'.
- whether the category risks will be addressed in the main CEMP/SMP document in the form of a procedure ('CEMP-P' or 'SMP-P'), based on a residual risk level of 'Medium'.
- whether the category risks will be addressed in the main CEMP/SMP document only ('CEMP' or 'SMP'), based on a residual risk level of 'Low', or
- whether the category risks are not applicable to the stage ('N/A').

This assessment considered each stage's scope of work, relevant CoA, PO and REMM requirements and whether additional environmental management documentation would be required to ensure their effective implementation, the relevant environmental risks and impacts identified in the SMWSA EIS, the level of uncertainty over the development of detailed design and construction planning, and whether there is a need for additional modelling or environmental assessment for that stage or sub-stage.

Due to the number of sub-stages within AEW, the outcomes of this process are presented in a Table 4-1 for AEW and Table 4-2 for remaining stages.

Table 4-1: Applicability of requirements relating to CEMP environmental management categories - AEW

CEMF Environmental Management Category	AEW - Demolition	AEW - Gas	AEW – IPO	AEW - Power	AEW - Roadworks	AEW – St Marys Station Lift Relocation	AEW – Footbridge St Marys	AEW – St Marys Temporary Bus Interchange	AEW - Water
Spoil	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Groundwater	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Noise & Vibration	CEMP*	CEMP*	SEMP	CEMP*	CEMP*	CEMP-P*	CEMP-P*	CEMP-P*	CEMP*
Non-Aboriginal Heritage	CEMP	CEMP	SEMP	CEMP	CEMP	CEMP	CEMP	CEMP	CEMP
Aboriginal Cultural Heritage Management Plan	Implement approved/ updated ACHMP in accordance with CoA	Implement approved/ updated ACHMP in accordance with CoA	Implement approved/ updated ACHMP in accordance with CoA	Implement approved/ updated ACHMP in accordance with CoA	Implement approved/ updated ACHMP in accordance with CoA	Implement approved/ updated ACHMP in accordance with CoA	Implement approved/ updated ACHMP in accordance with CoA	Implement approved/ updated ACHMP in accordance with CoA	Implement approved/ updated ACHMP in accordance with CoA
Flora & Fauna / Biodiversity	CEMP	CEMP	N/A	CEMP	CEMP	CEMP	CEMP	CEMP	CEMP
Visual Amenity	CEMP	CEMP	SEMP	CEMP	CEMP	CEMP	CEMP	CEMP	CEMP
Carbon & Energy	N/A	N/A	SMP	N/A	N/A	N/A	N/A	N/A	N/A

CEMF Environmental Management Category	AEW - Demolition	AEW - Gas	AEW – IPO	AEW - Power	AEW - Roadworks	AEW – St Marys Station Lift Relocation	AEW – Footbridge St Marys	AEW – St Marys Temporary Bus Interchange	AEW - Water
Materials	N/A	N/A	SMP	N/A	N/A	N/A	N/A	N/A	N/A
Soil & Water	CEMP*	CEMP*	SEMP	CEMP*	CEMP*	CEMP*	CEMP*	CEMP*	CEMP*
Air Quality	CEMP*	CEMP*	N/A	CEMP*	CEMP*	CEMP*	CEMP*	CEMP*	CEMP*
Waste (and Recycling)	CEMP	CEMP	SEMP	CEMP	CEMP	CEMP	CEMP	CEMP	CEMP
Bushfire Management Plan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Cumulative Construction Impacts Plan	N/A	N/A	SEMP	N/A	N/A	N/A	N/A	N/A	N/A
Workforce Development	WFDIP Plan	WFDIP Plan	WFDIP Plan	WFDIP Plan	WFDIP Plan	WFDIP Plan	WFDIP Plan	WFDIP Plan	WFDIP Plan

**CEMP/CEMP-P procedure will include monitoring requirements as relevant and proportionate to the potential risk posed by the activities within that sub-stage*

Table 4-2: Applicability of requirements relating to CEMP environmental management categories – SBT, SCAW and SSTOM

CEMF Environmental Management Category	SBT – Preparatory works	SBT – Bulk excavation and tunnelling works	SCAW – Preparatory works	SCAW – Main excavation and viaduct works	SSTOM
Spoil	CEMP	CEMP sub-plan	CEMP sub-plan	CEMP sub-plan	N/A
Groundwater	N/A	CEMP sub-plan and monitoring program	N/A	N/A	CEMP sub-plan and monitoring program
Noise & Vibration	CEMP-P	CEMP sub-plan and monitoring program	CEMP-P	CEMP sub-plan and monitoring program	CEMP sub-plan and monitoring program
Non-Aboriginal Heritage	CEMP-P	CEMP-P	CEMP-P	CEMP sub-plan	CEMP sub-plan
Aboriginal Cultural Heritage Management Plan	Implement approved/ updated ACHMP in accordance with CoA	Implement approved/ updated ACHMP in accordance with CoA	Implement approved/ updated ACHMP in accordance with CoA	Implement approved/ updated ACHMP in accordance with CoA	Implement approved/ updated ACHMP in accordance with CoA
Flora & Fauna / Biodiversity	CEMP-P	CEMP	CEMP-P	CEMP sub-plan	CEMP sub-plan
Visual Amenity	CEMP-P	CEMP-P	CEMP-P	CEMP sub-plan	CEMP sub-plan
Carbon & Energy	SMP sub-plan	SMP sub-plan	SMP sub-plan	SMP sub-plan	SMP sub-plan
Materials	SMP sub-plan	SMP sub-plan	SMP sub-plan	SMP sub-plan	SMP sub-plan
Soil & Water	CEMP-P	CEMP -P and surface water monitoring program	CEMP sub-plan+	CEMP sub-plan and monitoring program	CEMP sub-plan and monitoring program
Air Quality	CEMP-P	CEMP-P and monitoring program	CEMP sub-plan	CEMP sub-plan and monitoring program	CEMP sub-plan and monitoring program
Waste (and Recycling)	CEMP-P	CEMP sub-plan	CEMP-P	CEMP sub-plan	CEMP sub-plan
Bushfire Management Plan	Emergency Response Plan	Emergency Response Plan	Emergency Response Plan	Emergency Response Plan	CEMP sub-plan

CEMF Environmental Management Category	SBT – Preparatory works	SBT – Bulk excavation and tunnelling works	SCAW – Preparatory works	SCAW – Main excavation and viaduct works	SSTOM
Cumulative Construction Impacts Plan	CEMP-P	CEMP-P	CEMP-P	CEMP sub-plan	CEMP sub-plan
Workforce Development	WFDIP Plan	WFDIP Plan	WFDIP Plan	WFDIP Plan	WFDIP Plan

+ *While a CEMP sub-plan is required for Soil and Water management for the SCAW – Preparatory Works stage, it is not subject to the consultation requirements of CoA C5 or C13.*

* *CEMP/CEMP-P procedure will include monitoring requirements as relevant and proportionate to the potential risk posed by the activities within that sub-stage'.*

The plans referenced above are subject to multiple reviews, endorsements and approvals which is set out in Table to Table 4-6. The requirement for these plans to receive these reviews, endorsements and external approvals as indicated in Table 4-3Table to Table 4-6Table is to ensure consistency with the CEMF and achieve the requirements of CoAs A32(d) and (j), C2, C7 and C17.

4.3.4. Reviews, endorsements and approval of management plans

CoA C3, C8, C9 and C19 require management plans and monitoring programs to be submitted to the ER (where ER endorsement only applies) or Planning Secretary (where Planning Secretary approval applies) no later than one month prior to commencement of construction. As the WSA project is staged this timing requirement will be met for each stage and sub-stage, following the express nomination by the Planning Secretary as to which management plans and monitoring programs can be endorsed by the ER only.

As above, this Staging Report recommends that the Planning Secretary only holds an approval role where the residual risk is 'High' or 'Very High' for specified CEMPs, sub-plans and/or monitoring programs. Recommendations for each construction stage are documented in the following tables.

Table 4-3: AEW - Reviews, endorsements and approvals of plans

Plan	Contractor's Internal Review & Approval	Sydney Metro Review	Government Agency / Stakeholder Consultation	ER Review & Endorsement prior to Implementation	ER Review & Endorsement prior to Secretary Submission	Planning Secretary Review & Approval	Approval Authority for Minor/Administrative Updates
Site Establishment Management Plan	✓	✓	✓	✓			ER
Construction Environment Management Plan	✓	✓	•	✓			ER
Updated Aboriginal Cultural Heritage Management Plan	✓	✓	•	•	•	Info only	ER
Sustainability Management Plan	✓	✓	•	•			N/A
Workforce Development & Industry Participation Plan	✓	✓	•	•			N/A

• *At the discretion of Sydney Metro (i.e. not strictly a project requirement).*

Table 4-4: SBT - Reviews, endorsements and approvals of plans

Plan	Contractor's Internal Review & Approval	Sydney Metro Review	Government Agency / Stakeholder Consultation	ER Review & Endorsement prior to Implementation	ER Review & Endorsement prior to Secretary Submission	Planning Secretary Review & Approval	Approval Authority for Minor/Administrative Updates
SBT – Preparatory Works							
Construction Environment Management Plan	✓	✓	•	✓			ER
Updated Aboriginal Cultural Heritage Management Plan	✓	✓	•	•	•	Info only	ER
Sustainability Management Plan	✓	✓	•	•			N/A
Workforce Development & Industry Participation Plan	✓	✓	•	•			N/A

Plan	Contractor's Internal Review & Approval	Sydney Metro Review	Government Agency / Stakeholder Consultation	ER Review & Endorsement prior to Implementation	ER Review & Endorsement prior to Secretary Submission	Planning Secretary Review & Approval	Approval Authority for Minor/Administrative Updates
SBT – Bulk Excavation and Tunnelling Works							
Construction Environment Management Plan	✓	✓	•	✓			ER
Spoil Management Sub-Plan	✓	✓	•	•			•
Groundwater Management Sub-Plan	✓	✓	•*	•*			•*
Groundwater Monitoring Program	✓	✓	✓		✓	✓	ER
Noise & Vibration Management Sub-Plan	✓	✓	✓		✓	✓	ER
Noise and Vibration Monitoring Program	✓	✓	✓		✓	✓	ER
Flora & Fauna / Biodiversity Management Sub-Plan	✓	✓	✓	✓			ER
Visual Amenity Management Sub-Plan	✓	✓	•	•			•
Soil & Water Management Sub-Plan	✓	✓	✓	✓			ER
Surface Water Monitoring Program	✓	✓	✓	✓			ER
Air Quality Management Sub-Plan	✓	✓	•*	•*			•*
Air Quality Monitoring Program	✓	✓	✓	✓			ER
Waste and Recycling Management Sub-Plan	✓	✓	•	•			•
Bushfire Management Plan	✓	✓	•	•			•
Cumulative Construction Impacts Management Plan	✓	✓	•	•			•
Updated Aboriginal Cultural Heritage Management Plan	✓	✓	•	•	•	Info only	ER
Sustainability Management Plan	✓	✓	•	•			N/A

Plan	Contractor's Internal Review & Approval	Sydney Metro Review	Government Agency / Stakeholder Consultation	ER Review & Endorsement prior to Implementation	ER Review & Endorsement prior to Secretary Submission	Planning Secretary Review & Approval	Approval Authority for Minor/Administrative Updates
Workforce Development & Industry Participation Plan	✓	✓	•	•			N/A

• *At the discretion of Sydney Metro (i.e. not strictly a project requirement)*

•* *To facilitate proactive and consistent management of this environmental category, the ER may request to review this sub-plan as part of the review and endorsement of the associated monitoring program. In accordance with CoA A33, this sub-plan must be provided to the ER if requested.*

Table 4-5: SCAW - Reviews, Endorsements and Approvals of Plans

Plan	Contractor's Internal Review & Approval	Sydney Metro Review	Government Agency / Stakeholder Consultation	ER Review & Endorsement prior to Implementation	ER Review & Endorsement prior to Secretary Submission	Planning Secretary Review & Approval	Approval Authority for Minor/Administrative Updates
SCAW – Preparatory Works							
Construction Environment Management Plan	✓	✓	•	✓			ER
Spoil Management Sub-Plan	✓	✓	•	✓			ER
Soil & Water Management Sub-Plan	✓	✓	•	✓			ER
Air Quality Management Sub-Plan	✓	✓	•	✓			ER
Updated Aboriginal Cultural Heritage Management Plan	✓	✓	•	•	•	Info only	ER
Sustainability Management Plan	✓	✓	•	•			N/A
Workforce Development & Industry Participation Plan	✓	✓	•	•			N/A

Plan	Contractor's Internal Review & Approval	Sydney Metro Review	Government Agency / Stakeholder Consultation	ER Review & Endorsement prior to Implementation	ER Review & Endorsement prior to Secretary Submission	Planning Secretary Review & Approval	Approval Authority for Minor/Administrative Updates
SCAW - Main excavation and viaduct works							
Construction Environment Management Plan	✓	✓	•	✓			ER
Spoil Management Sub-Plan	✓	✓	•	•			•
Noise & Vibration Management Sub-Plan	✓	✓	✓		✓	✓	ER
Noise and Vibration Monitoring Program	✓	✓	✓		✓	✓	ER
Non-Aboriginal Heritage Management Sub-Plan	✓	✓	✓	✓			ER
Flora & Fauna / Biodiversity Management Sub-Plan	✓	✓	✓		✓	✓	ER
Visual Amenity Management Sub-Plan	✓	✓	•	•			•
Soil & Water Management Sub-Plan	✓	✓	✓		✓	✓	ER
Surface Water Monitoring Program	✓	✓	✓		✓	✓	ER
Air Quality Management Sub-Plan	✓	✓	•*	•*			•*
Air Quality Monitoring Program	✓	✓	✓	✓			ER
Waste and Recycling Management Sub-Plan	✓	✓	•	•			•
Bushfire Management Plan	✓	✓	•	•			•
Cumulative Construction Impacts Management Plan	✓	✓	•	•			•
Updated Aboriginal Cultural Heritage Management Plan	✓	✓	•	•	•	Info only	ER
Sustainability Management Plan	✓	✓	•	•			N/A
Workforce Development & Industry Participation Plan	✓	✓	•	•			N/A

• *At the discretion of Sydney Metro (i.e. not strictly a project requirement).*

• *To facilitate proactive and consistent management of this environmental category, the ER may request to review this sub-plan as part of the review and endorsement of the associated monitoring program. In accordance with CoA A33, this sub-plan must be provided to the ER if requested.*

Table 4-6: SSTOM - Reviews, Endorsements and Approvals of Plans

Plan	Contractor's Internal Review & Approval	Sydney Metro Review	Government Agency / Stakeholder Consultation	ER Review & Endorsement prior to Implementation	ER Review & Endorsement prior to Secretary Submission	Planning Secretary Review & Approval	Approval Authority for Minor/Administrative Updates
Construction Environment Management Plan	✓	✓	•	✓	✓	✓	ER
Spoil Management Sub-Plan	✓	✓	•	•			•
Groundwater Management Sub-Plan	✓	✓	•*	•*			•*
Groundwater Monitoring Program	✓	✓	✓		✓	✓	ER
Noise & Vibration Management Sub-Plan	✓	✓	✓		✓	✓	ER
Noise and Vibration Monitoring Program	✓	✓	✓		✓	✓	ER
Non-Aboriginal Heritage Management Sub-Plan	✓	✓	✓		✓	✓	ER
Flora & Fauna / Biodiversity Management Sub-Plan	✓	✓	✓		✓	✓	ER
Visual Amenity Management Sub-Plan	✓	✓	•	•			•
Soil & Water Management Sub-Plan	✓	✓	✓		✓	✓	ER
Surface Water Monitoring Program	✓	✓	✓		✓	✓	ER
Air Quality Management Sub-Plan	✓	✓	•*	•*			•*
Air Quality Monitoring Program	✓	✓	✓		✓	✓	ER
Waste and Recycling Management Sub-Plan	✓	✓	•	•			•
Bushfire Management Plan	✓	✓	•	•			•

Plan	Contractor's Internal Review & Approval	Sydney Metro Review	Government Agency / Stakeholder Consultation	ER Review & Endorsement prior to Implementation	ER Review & Endorsement prior to Secretary Submission	Planning Secretary Review & Approval	Approval Authority for Minor/Administrative Updates
Cumulative Construction Impacts Management Plan	✓	✓	•	•			•
Updated Aboriginal Cultural Heritage Management Plan	✓	✓	•	•	•	Info only	ER
Sustainability Management Plan	✓	✓	•	•			N/A
Workforce Development & Industry Participation Plan	✓	✓	•	•			N/A

• *At the discretion of Sydney Metro (i.e. not strictly a project requirement).*

• **To facilitate proactive and consistent management of this environmental category, the ER may request to review this sub-plan as part of the review and endorsement of the associated monitoring program. In accordance with CoA A33, this sub-plan must be provided to the ER if requested.*

4.3.5. Ongoing risk assessments

Ongoing risk analysis will occur during delivery and will be documented in each Principal Contractors CEMP as required by the CEMF. Principal Contractor risk assessments will specify controls to further detail and manage the risks identified within their scope of work and respond to increasing certainty associated with the development of construction planning and detail design as well as outcomes of additional modelling or environmental assessment as relevant. This process may further revise the inherent and residual risk ratings that are documented in this report. The Principal Contractor's CEMP is provided to either the ER for endorsement only or the Planning Secretary for approval following ER endorsement, thereby providing a complete picture in relation to the management of risk prior to the commencement of construction.

5. Compliance

5.1. Updates to the Staging Report

5.1.1. Changes to delivery strategy

This Staging Report addresses the requirements of the planning approval for construction of the project and provides detailed information on the extent to which requirements apply to that stage.

As Sydney Metro Western Sydney Airport progresses it is possible that the delivery strategy will change such that the stages outlined in this report also change. Where this occurs, Sydney Metro will undertake a reallocation exercise to confirm how planning approval requirements apply to new or modified stages and subsequently update this Staging Report.

In accordance with CoA A14, if changes are proposed to the staging of construction or operation, the revised Staging Report will be submitted to the Planning Secretary for information before the commencement of changes to the stage of construction or the stage of operation.

5.1.2. Changes to the planning approval

A review of this report will be undertaken when there are any changes to the planning approval. Approved project modifications and associated construction activities will be reviewed, and if necessary new or modified conditions of approval will be subject to the applicability and allocation processes described in earlier sections of this report.

5.1.3. Changes to the Staging Report risk assessments

Throughout the construction of the project, changes to the Staging Report risk assessment may be necessary, for example in response to gathering of additional environmental monitoring data showing a change in risk profile for a stage or stages, reviews triggered by non-compliances or incidents, progression of construction planning and detailed design for a particular stage, or following audits.

In accordance with CoA A15, if changes are proposed to the risk assessment related to the staging of construction or operation, the revised Staging Report will 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. In accordance with CoA A11, any changes to the risk assessment will use the process set out in this report which is consistent withAS/NZS ISO 31000: 2018; Risk Management - Guidelines and will be endorsed by the ER prior to submission to the Planning Secretary.

5.2. Monitoring of compliance

The CEMF requires contractors to undertake regular onsite environmental inspections to confirm the adequacy of all environmental mitigation measures and to undertake internal audits where required. Furthermore, onsite environmental inspections are regularly undertaken and led by the Environmental Representative across all stages of the project and involve key staff from the contractor, Sydney Metro representatives and the Independent Certifier (where applicable). Environmental Representative led inspections provide professional independent surveillance, guidance and advice on environmental management activities onsite. The extent and/or frequency of these activities may vary depending on the

scale of the works being undertaken by the Principal Contractor but will be appropriate with respect to any relevant environmental risks.

Environmental inspections are supported by a range of other activities, including:

- environmental performance reporting,
- environmental risk assessment reviews,
- regular environment meetings between Sydney Metro and the contractors, in conjunctions with the Environmental representative,
- compliance reviews by the contractors and the Environmental Representatives,
- environmental incident and non-compliance reporting,
- environmental management documentation reviews and endorsements, and
- internal, Sydney Metro or independent environmental auditing.

All environmental issues and general compliance with the planning approval requirements is monitored collaboratively between Sydney Metro, independent parties, and the Principal Contractor through environmental management meetings chaired by Sydney Metro for each Phase in this report. These forums are the cornerstone for developing effective working relationships and sharing knowledge and ideas for improvement.

Appendix A – Risk tables

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

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.

Appendix B – Applicability of SMWSA CoA to each project stage

This table has been based on the latest version of the Sydney Metro - Western Sydney Airport Conditions of Approval as signed by the NSW Minister for Planning on 23 July 2021.

CoA Topic	CoA	AEW - Demolition	AEW – Gas	AEW – IPO	AEW – Power	AEW – Roadworks	AEW – St Marys Station Lift Relocation	AEW – Footbridge St Marys	AEW – St Marys Temporary Bus Interchange	AEW – Water	SBT- Preparatory Works	SBT – Bulk Excavation and Tunnelling	SCAW – Preparatory Works	SCAW – Main excavation and viaduct works	SSTOM
General	A1	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	A2	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	A3	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	A4	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	A5	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	A6	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	A7	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	A8	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	A9	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
Staging	A10	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	A11	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	A12	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	A13	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	A14	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	A15	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	A16	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
Ancillary Facilities & Site Establishment	A17	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	A18	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	A19	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	A20	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	A21	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	A22	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	A23	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	A24	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
Independent Appointments	A25	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	A26	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	A27	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
Environmental Representative	A28	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	A29	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	A30	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	A31	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	A32	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	A33	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable

CoA Topic	CoA	AEW - Demolition	AEW – Gas	AEW – IPO	AEW – Power	AEW – Roadworks	AEW – St Marys Station Lift Relocation	AEW – Footbridge St Marys	AEW – St Marys Temporary Bus Interchange	AEW – Water	SBT- Preparatory Works	SBT – Bulk Excavation and Tunnelling	SCAW – Preparatory Works	SCAW – Main excavation and viaduct works	SSTOM
Notification of Commencement	A34	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	A35	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
Independent Environmental Audit	A36	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	A37	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	A38	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	A39	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	A40	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
Incident and Non-Compliance Notification and Reporting – Incident Notification, Reporting and Response	A41	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	A42	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	A43	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
Non-Compliance Notification	A44	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	A45	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
Identification of Workforce	A46	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	A47	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
Community Communication	B1	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
Complaints Management System	B2	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	B3	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	B4	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	B5	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	B6	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	B7	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable (during construction)
	B8	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	B9	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	B10	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable (during construction)
Provision of Electronic Information	B11	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
Construction Environmental Management Plan	C1	Applicable	Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	C2	Applicable	Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	C3	Applicable	Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	C4	Applicable	Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Not Applicable	Applicable	Not Applicable	Applicable	Applicable
	C5	Risks will be managed in	Risks will be managed in	Not Applicable	Risks will be managed in	Risks will be managed in	Risks will be managed in	Risks will be managed in	Risks will be managed in	Risks will be managed in	Risks will be managed in	Risks will be managed in	Risks will be managed in	Risks will be managed in	Risks will be managed in

CoA Topic	CoA	AEW - Demolition	AEW – Gas	AEW – IPO	AEW – Power	AEW – Roadworks	AEW – St Marys Station Lift Relocation	AEW – Footbridge St Marys	AEW – St Marys Temporary Bus Interchange	AEW – Water	SBT- Preparatory Works	SBT – Bulk Excavation and Tunnelling	SCAW – Preparatory Works	SCAW – Main excavation and viaduct works	SSTOM
		accordance with Table 4-1	accordance with Table 4-1		accordance with Table 4-1	accordance with Table 4-1	accordance with Table 4-1	accordance with Table 4-1	accordance with Table 4-1	accordance with Table 4-1	accordance with Table 4-2	accordance with Table 4-2	accordance with Table 4-1	accordance with Table 4-2	accordance with Table 4-2
	C6	Applicable	Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Risks will be managed in accordance with Table 4-2	Applicable	Risks will be managed in accordance with Table 4-2	Applicable	Applicable
	C7	Applicable	Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	C8	Applicable	Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	C9	Applicable	Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	C10	Applicable	Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	C11	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	C12	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
Construction Monitoring Programs	C13	Risks will be managed in accordance with Table 4-1	Risks will be managed in accordance with Table 4-1	Not Applicable	Risks will be managed in accordance with Table 4-1	Risks will be managed in accordance with Table 4-1	Risks will be managed in accordance with Table 4-1	Risks will be managed in accordance with Table 4-1	Risks will be managed in accordance with Table 4-1	Risks will be managed in accordance with Table 4-1	Risks will be managed in accordance with Table 4-2	Risks will be managed in accordance with Table 4-2	Risks will be managed in accordance with Table 4-2	Risks will be managed in accordance with Table 4-2	Risks will be managed in accordance with Table 4-2
	C14	Risks will be managed in accordance with Table 4-1	Risks will be managed in accordance with Table 4-1	Not Applicable	Risks will be managed in accordance with Table 4-1	Risks will be managed in accordance with Table 4-1	Risks will be managed in accordance with Table 4-1	Risks will be managed in accordance with Table 4-1	Risks will be managed in accordance with Table 4-1	Risks will be managed in accordance with Table 4-1	Risks will be managed in accordance with Table 4-2	Risks will be managed in accordance with Table 4-2	Risks will be managed in accordance with Table 4-2	Risks will be managed in accordance with Table 4-2	Applicable
	C15	Risks will be managed in accordance with Table 4-1	Risks will be managed in accordance with Table 4-1	Not Applicable	Risks will be managed in accordance with Table 4-1	Risks will be managed in accordance with Table 4-1	Risks will be managed in accordance with Table 4-1	Risks will be managed in accordance with Table 4-1	Risks will be managed in accordance with Table 4-1	Risks will be managed in accordance with Table 4-1	Risks will be managed in accordance with Table 4-2	Risks will be managed in accordance with Table 4-2	Risks will be managed in accordance with Table 4-2	Risks will be managed in accordance with Table 4-2	Applicable
	C16	Risks will be managed in accordance with Table 4-1	Risks will be managed in accordance with Table 4-1	Not Applicable	Risks will be managed in accordance with Table 4-1	Risks will be managed in accordance with Table 4-1	Risks will be managed in accordance with Table 4-1	Risks will be managed in accordance with Table 4-1	Risks will be managed in accordance with Table 4-1	Risks will be managed in accordance with Table 4-1	Risks will be managed in accordance with Table 4-2	Risks will be managed in accordance with Table 4-2	Risks will be managed in accordance with Table 4-2	Risks will be managed in accordance with Table 4-2	Applicable
	C17	Risks will be managed in accordance with Table 4-1	Risks will be managed in accordance with Table 4-1	Not Applicable	Risks will be managed in accordance with Table 4-1	Risks will be managed in accordance with Table 4-1	Risks will be managed in accordance with Table 4-1	Risks will be managed in accordance with Table 4-1	Risks will be managed in accordance with Table 4-1	Risks will be managed in accordance with Table 4-1	Risks will be managed in accordance with Table 4-2	Risks will be managed in accordance with Table 4-2	Risks will be managed in accordance with Table 4-2	Risks will be managed in accordance with Table 4-2	Applicable
	C18	Risks will be managed in accordance with Table 4-1	Risks will be managed in accordance with Table 4-1	Not Applicable	Risks will be managed in accordance with Table 4-1	Risks will be managed in accordance with Table 4-1	Risks will be managed in accordance with Table 4-1	Risks will be managed in accordance with Table 4-1	Risks will be managed in accordance with Table 4-1	Risks will be managed in accordance with Table 4-1	Risks will be managed in accordance with Table 4-2	Risks will be managed in accordance with Table 4-2	Risks will be managed in accordance with Table 4-2	Risks will be managed in accordance with Table 4-2	Applicable
	C19	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Not Applicable	Applicable	Applicable
	C20	Applicable	Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	C21	Applicable	Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	C22	Applicable	Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
Operational Environmental Management	D1	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	D2	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	D3	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	D4	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	D5	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	D6	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable

CoA Topic	CoA	AEW - Demolition	AEW – Gas	AEW – IPO	AEW – Power	AEW – Roadworks	AEW – St Marys Station Lift Relocation	AEW – Footbridge St Marys	AEW – St Marys Temporary Bus Interchange	AEW – Water	SBT- Preparatory Works	SBT – Bulk Excavation and Tunnelling	SCAW – Preparatory Works	SCAW – Main excavation and viaduct works	SSTOM
	D7	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	D8	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
Air Quality	E1	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
Biodiversity Credits	E2	Applicable	Applicable	Not Applicable	Applicable	Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	E3	Applicable	Applicable	Not Applicable	Applicable	Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	E4	Not Applicable	Applicable	Not Applicable	Applicable	Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	E5	Not Applicable	Applicable	Not Applicable	Applicable	Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	E6	Not Applicable	Applicable	Not Applicable	Applicable	Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	E7	Not Applicable	Applicable	Not Applicable	Applicable	Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
Key Fish Habitat	E8	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Not Applicable
	E9	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Not Applicable
	E10	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Not Applicable
Nest Boxes	E11	Applicable	Applicable	Not Applicable	Applicable	Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Not Applicable	Applicable	Applicable	Not Applicable
Re-use of Timber	E12	Applicable	Applicable	Not Applicable	Applicable	Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Not Applicable
	E13	Applicable	Applicable	Not Applicable	Applicable	Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Not Applicable
Watercourse Crossing	E14	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Not Applicable	Applicable	Not Applicable
Flooding	E15	Not Applicable	Not Applicable	Applicable	Not Applicable	Applicable	Not Applicable	Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Not Applicable	Applicable	Applicable
	E16	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Not Applicable	Applicable	Applicable
	E17	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Not Applicable	Applicable	Applicable
	E18	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Not Applicable	Applicable	Applicable
Heritage – Non-Aboriginal	E19	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	E20	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable	Not Applicable	Applicable	Applicable	Not Applicable	Not Applicable	Applicable
	E21	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable	Not Applicable	Applicable	Applicable	Not Applicable	Not Applicable	Applicable
	E22	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	E23	Not Applicable	Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	E24	Applicable	Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	E25	Applicable	Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	E26	Applicable	Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	E27	Applicable	Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
Heritage - Aboriginal	E28	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	E29	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	E30	Not Applicable	Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable
	E31	Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable

CoA Topic	CoA	AEW - Demolition	AEW – Gas	AEW – IPO	AEW – Power	AEW – Roadworks	AEW – St Marys Station Lift Relocation	AEW – Footbridge St Marys	AEW – St Marys Temporary Bus Interchange	AEW – Water	SBT- Preparatory Works	SBT – Bulk Excavation and Tunnelling	SCAW – Preparatory Works	SCAW – Main excavation and viaduct works	SSTOM
	E32	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable
	E33	Applicable	Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
Heritage – Unexpected Finds and Human Remains	E34	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	E35	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	E36	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
Noise & Vibration – Land use survey	E37	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
Noise & Vibration – Construction Hours	E38	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
Noise & Vibration – Highly Noise Intensive Work	E39	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	E40	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
Noise & Vibration – Variation to Work Hours	E41	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
Noise & Vibration – Out-of-Hours Work Protocol – Work not subject to an EPL	E42	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
Noise & Vibration – Mitigation – Construction Noise Management Levels and Vibration Criteria	E43	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	E44	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	E45	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
Noise & Vibration – Construction Noise and Vibration Mitigation and Management	E46	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	E47	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	E48	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	E49	Applicable	Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	E50	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Not Applicable	Not Applicable	Not Applicable
	E51	Applicable	Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	E52	Applicable	Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	E53	Applicable	Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
Construction Vibration Mitigation – Heritage Items	E54	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	E55	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Not Applicable	Applicable	Applicable	Applicable
Utility Coordination and Respite	E56	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Not Applicable	Applicable	Applicable	Applicable
Out-of-Hours Works – Community Consultation on Respite	E57	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Not Applicable	Applicable	Applicable	Applicable
Noise Mitigation - Operational Noise	E58	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E59	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable

CoA Topic	CoA	AEW - Demolition	AEW – Gas	AEW – IPO	AEW – Power	AEW – Roadworks	AEW – St Marys Station Lift Relocation	AEW – Footbridge St Marys	AEW – St Marys Temporary Bus Interchange	AEW – Water	SBT- Preparatory Works	SBT – Bulk Excavation and Tunnelling	SCAW – Preparatory Works	SCAW – Main excavation and viaduct works	SSTOM
and Vibration Mitigation Measures	E60	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
Place, Urban Design & Visual Amenity - Construction Sites	E61	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Not Applicable	Applicable	Applicable	Not Applicable	Not Applicable	Applicable
	E62	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
Design Requirements and Strategic Context	E63	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
Design Guidance and Standards - Lighting and Security	E64	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
Design Guidance and Standards - Active Transport	E65	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	E66	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
Design Review Panel and Design Review- Panel Membership	E67	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	E68	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	E69	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	E70	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
Operation of the Design Review Process	E71	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	E72	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	E73	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	E74	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	E75	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	E76	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
Place, Urban Design and Corridor Landscape Plan	E77	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
PUDCLP Documentation	E78	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	E79	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
Operational Maintenance	E80	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable
	E81	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
Socio-economic, land use and property	E82	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	E83	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
Condition Survey	E84	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	E85	Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	E86	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	E87	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	E88	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Not Applicable	Not Applicable	Applicable
	E89	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Not Applicable	Not Applicable	Applicable
	E90	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Not Applicable	Not Applicable	Applicable

CoA Topic	CoA	AEW - Demolition	AEW – Gas	AEW – IPO	AEW – Power	AEW – Roadworks	AEW – St Marys Station Lift Relocation	AEW – Footbridge St Marys	AEW – St Marys Temporary Bus Interchange	AEW – Water	SBT- Preparatory Works	SBT – Bulk Excavation and Tunnelling	SCAW – Preparatory Works	SCAW – Main excavation and viaduct works	SSTOM
Small Business Owners Engagement Plan(s)	E91	Not Applicable	Not Applicable	Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Not Applicable	Applicable	Applicable	Not Applicable	Not Applicable	Applicable
Contaminated sites	E92	Applicable	Applicable	Not Applicable	Applicable	Applicable	Not Applicable	Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Not Applicable
	E93	Applicable	Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Not Applicable
	E94	Applicable	Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Not Applicable
	E95	Applicable	Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Not Applicable
	E96	Applicable	Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Not Applicable
	E97	Applicable	Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Not Applicable
	E98	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	E99	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
Sustainability	E100	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	E101	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	E102	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
Traffic and Transport	E103	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
Management of Heavy Vehicle Movements	E104	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	E105	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	E106	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
Road Dilapidation	E107	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	E108	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
Construction Parking and Access Management	E109	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
Property Access	E110	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	E111	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	E112	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	E113	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	E114	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
Pedestrian and Cyclist Access	E115	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Not Applicable	Not Applicable	Applicable
Road Traffic and Safety	E116	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	E117	Applicable	Applicable	Applicable	Applicable	Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	E118	Applicable	Applicable	Not Applicable	Applicable	Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Not Applicable	Applicable	Not Applicable	Applicable	Applicable
	E119	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable

CoA Topic	CoA	AEW - Demolition	AEW – Gas	AEW – IPO	AEW – Power	AEW – Roadworks	AEW – St Marys Station Lift Relocation	AEW – Footbridge St Marys	AEW – St Marys Temporary Bus Interchange	AEW – Water	SBT- Preparatory Works	SBT – Bulk Excavation and Tunnelling	SCAW – Preparatory Works	SCAW – Main excavation and viaduct works	SSTOM
Utilities Management	E120	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
Utilities Management - Warragamba to Prospect Water Supply Pipeline	E121	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
Waste	E122	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
Waste	E123	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	E124	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	E125	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
Water	E126	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
Water – Construction requirements	E127	Applicable	Applicable	Not Applicable	Applicable	Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
Water – Construction requirements	E128	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	E129	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	E130	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	E131	Applicable	Applicable	Not Applicable	Applicable	Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable
Water - Operational Requirements	E132	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
Groundwater Groundwater	E133	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Not Applicable	Not Applicable	Applicable
Groundwater	E134	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Not Applicable	Not Applicable	Applicable

Appendix C – Applicability of SMWSA PO to each project stage

Environmental Performance Objective Topic	Environmental Performance Objective	AEW - Demolition	AEW – Gas	AEW - IPO	AEW – Power	AEW – Roadworks	AEW – St Marys Station Lift Relocation	AEW – Footbridge St Marys	AEW – St Marys Temporary Bus Interchange	AEW – Water	SBT – Preparatory Works	SBT – Bulk Excavation and Tunnelling Works	SCAW – Preparatory Works	SCAW – Mani excavation and viaduct works	SSTOM
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 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	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Within Western Sydney International, the project is integrated with and supports the outcomes and design objectives set out in the Airport Plan, future master plans for Western Sydney International and design guidelines for Western Sydney International														

Environmental Performance Objective Topic	Environmental Performance Objective	AEW - Demolition	AEW – Gas	AEW - IPO	AEW – Power	AEW – Roadworks	AEW – St Marys Station Lift Relocation	AEW – Footbridge St Marys	AEW – St Marys Temporary Bus Interchange	AEW – Water	SBT – Preparatory Works	SBT – Bulk Excavation and Tunnelling Works	SCAW – Preparatory Works	SCAW – Mani excavation and viaduct works	SSTOM
The project contributes to greener places through supporting the enhancement and provision of green infrastructure	The number of trees within the project area is increased at a ratio of 2:1 (for vegetation removal not subject to biodiversity offset); and tree canopy coverage is increased, using a range of local species, subject to the constraints on tree planting associated with safe airport operations	✓	✓		✓	✓				✓	✓	✓	✓	✓	✓
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	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	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	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Environmental Performance Objective Topic	Environmental Performance Objective	AEW - Demolition	AEW – Gas	AEW - IPO	AEW – Power	AEW – Roadworks	AEW – St Marys Station Lift Relocation	AEW – Footbridge St Marys	AEW – St Marys Temporary Bus Interchange	AEW – Water	SBT – Preparatory Works	SBT – Bulk Excavation and Tunnelling Works	SCAW – Preparatory Works	SCAW – Mani excavation and viaduct works	SSTOM
	Safe and efficient interchanges are provided between transport modes	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Transport interchange facilities provided at station precincts are designed in accordance with the modal access hierarchy						✓	✓	✓				✓	✓	✓
	Each station and station plaza is provided with sufficient customer capacity to achieve a minimum Fruin's Level of Service C (for 2056 demand)						✓	✓							✓
	Stations and interchanges are fully accessible and compliant with the *Disability Discrimination Act 1992* (Cth) and the *Disability Standards for Accessible Public Transport* (Australian Government, 2002)						✓	✓							✓
Works are compatible with existing infrastructure and future transport corridors	The project is designed to be compatible with existing infrastructure and future transport corridors						✓	✓	✓		✓	✓	✓	✓	✓

Environmental Performance Objective Topic	Environmental Performance Objective	AEW - Demolition	AEW – Gas	AEW - IPO	AEW – Power	AEW – Roadworks	AEW – St Marys Station Lift Relocation	AEW – Footbridge St Marys	AEW – St Marys Temporary Bus Interchange	AEW – Water	SBT – Preparatory Works	SBT – Bulk Excavation and Tunnelling Works	SCAW – Preparatory Works	SCAW – Mani excavation and viaduct works	SSTOM
Construction noise and vibration (including airborne noise, ground-borne noise and blasting) is effectively managed to minimise adverse impacts on acoustic amenity Construction noise and vibration (including airborne noise, ground-borne noise and blasting) are effectively managed to minimise adverse impacts on the structural integrity of buildings and items including Aboriginal places and environmental heritage	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	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	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	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Increases in noise emissions and vibration affecting nearby properties and other sensitive receivers	Operational noise and vibration levels from rail operations are managed in accordance with the Rail Infrastructure Noise Guidelines and Airports (Environment Protection) Regulations 1997														✓

Environmental Performance Objective Topic	Environmental Performance Objective	AEW - Demolition	AEW – Gas	AEW - IPO	AEW – Power	AEW – Roadworks	AEW – St Marys Station Lift Relocation	AEW – Footbridge St Marys	AEW – St Marys Temporary Bus Interchange	AEW – Water	SBT – Preparatory Works	SBT – Bulk Excavation and Tunnelling Works	SCAW – Preparatory Works	SCAW – Mani excavation and viaduct works	SSTOM
during operation of the project are effectively managed to protect the amenity and well-being of the community	Operational noise levels for the stabling and maintenance facility, stations and other fixed infrastructure are managed in accordance with the Noise Policy for Industry 2017														✓
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)	✓	✓	✓	✓	✓				✓	✓	✓	✓	✓	✓
	Manage groundwater drawdown at Orchard Hills to avoid or minimise impacts on groundwater dependent ecosystems											✓			
	No removal of any vegetation within the Thompsons Creek riparian zone or any adjacent areas that are non-certified under the South West Growth Area														
	Culverts and bridges would be appropriately sized to maintain fauna habitat connectivity												✓	✓	

Environmental Performance Objective Topic	Environmental Performance Objective	AEW - Demolition	AEW – Gas	AEW - IPO	AEW – Power	AEW – Roadworks	AEW – St Marys Station Lift Relocation	AEW – Footbridge St Marys	AEW – St Marys Temporary Bus Interchange	AEW – Water	SBT – Preparatory Works	SBT – Bulk Excavation and Tunnelling Works	SCAW – Preparatory Works	SCAW – Mani excavation and viaduct works	SSTOM
	Maintain integrity and functionality of rail corridor fencing to minimise wildlife-train collision while providing opportunities for cross-corridor wildlife movement													✓	✓
	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)	✓	✓		✓					✓	✓	✓	✓	✓	✓
Offsets and/or supplementary measures are assured which are equivalent to any residual impacts of project construction and operation	Impacts on threatened ecological communities and threatened species are offset in accordance with the requirements of the NSW Biodiversity Assessment Method (OEH, 2017)	✓	✓	✓	✓	✓				✓	✓	✓	✓	✓	
The design, construction and operation of the project facilitates, to the greatest extent possible, the long term protection, conservation and management of the	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			✓			✓	✓	✓		✓	✓			
	Impacts on non-Aboriginal heritage items and archaeology are minimised or where possible avoided	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Environmental Performance Objective Topic	Environmental Performance Objective	AEW - Demolition	AEW – Gas	AEW - IPO	AEW – Power	AEW – Roadworks	AEW – St Marys Station Lift Relocation	AEW – Footbridge St Marys	AEW – St Marys Temporary Bus Interchange	AEW – Water	SBT – Preparatory Works	SBT – Bulk Excavation and Tunnelling Works	SCAW – Preparatory Works	SCAW – Mani excavation and viaduct works	SSTOM
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	The design of St Marys Station is sympathetic to retained and adjacent heritage items						✓	✓			✓	✓			
	The design of the project incorporates non-Aboriginal heritage interpretation					✓	✓	✓	✓		✓	✓	✓	✓	✓
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	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	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Impacts on areas of archaeological sensitivity and significance are avoided or minimised, where practical	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Environmental Performance Objective Topic	Environmental Performance Objective	AEW - Demolition	AEW – Gas	AEW - IPO	AEW – Power	AEW – Roadworks	AEW – St Marys Station Lift Relocation	AEW – Footbridge St Marys	AEW – St Marys Temporary Bus Interchange	AEW – Water	SBT – Preparatory Works	SBT – Bulk Excavation and Tunnelling Works	SCAW – Preparatory Works	SCAW – Mani excavation and viaduct works	SSTOM
design, construction and operation of the project avoids or minimises impacts, to the greatest extent possible, on the heritage significance of Aboriginal objects and places	The design of the project incorporates Aboriginal heritage interpretation and Aboriginal cultural design principles in consultation with Aboriginal knowledge holders	✓	✓		✓	✓	✓	✓	✓	✓			✓	✓	✓
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	Land and property beyond the construction footprint would not be impacted by construction for the 0.5 Exceedances per Year (EY) storm event		✓	✓	✓	✓				✓	✓	✓	✓	✓	✓
	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	✓	✓	✓	✓	✓				✓	✓	✓	✓	✓	✓

Environmental Performance Objective Topic	Environmental Performance Objective	AEW - Demolition	AEW – Gas	AEW - IPO	AEW – Power	AEW – Roadworks	AEW – St Marys Station Lift Relocation	AEW – Footbridge St Marys	AEW – St Marys Temporary Bus Interchange	AEW – Water	SBT – Preparatory Works	SBT – Bulk Excavation and Tunnelling Works	SCAW – Preparatory Works	SCAW – Mani excavation and viaduct works	SSTOM
and volumes) are minimised The environmental values of nearby, connected and affected water sources, groundwater and dependent ecological systems including estuarine and marine water (if Applicable) are maintained (where values are achieved) or improved and maintained (where values are not	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)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Environmental Performance Objective Topic	Environmental Performance Objective	AEW - Demolition	AEW – Gas	AEW - IPO	AEW – Power	AEW – Roadworks	AEW – St Marys Station Lift Relocation	AEW – Footbridge St Marys	AEW – St Marys Temporary Bus Interchange	AEW – Water	SBT – Preparatory Works	SBT – Bulk Excavation and Tunnelling Works	SCAW – Preparatory Works	SCAW – Mani excavation and viaduct works	SSTOM
achieved) Sustainable use of water resources The project is designed, constructed and operated to protect the NSW Water Quality Objectives where they are currently being achieved, and contribute towards achievement of the Water Quality Objectives over time where they are currently not being achieved, including downstream of the project to the extent of the project impact including estuarine and marine waters (if Applicable)	Drainage from the project (including the stabling and maintenance facility, service facilities and stations) designed in accordance with local council requirements for managing urban stormwater quality and quantity		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Environmental Performance Objective Topic	Environmental Performance Objective	AEW - Demolition	AEW – Gas	AEW - IPO	AEW – Power	AEW – Roadworks	AEW – St Marys Station Lift Relocation	AEW – Footbridge St Marys	AEW – St Marys Temporary Bus Interchange	AEW – Water	SBT – Preparatory Works	SBT – Bulk Excavation and Tunnelling Works	SCAW – Preparatory Works	SCAW – Mani excavation and viaduct works	SSTOM
	For all land currently flooded up to the one per cent annual exceedance probability event, no change to peak flood levels up to the following limits, unless otherwise agreed with the affected property owner: • residential, commercial, critical infrastructure – no new above floor flooding, maximum change of 10 millimetres for existing flooded buildings and maximum of 50 millimetres for properties where flooding is below floor level • roads – maximum change of 50 millimetres • Crown land open space, farming, grazing and cropping land – maximum change of 200 millimetres		✓		✓	✓				✓		✓	✓	✓	✓
	Where flood water velocities are currently below one metre per second (m/s), the project is designed and operated to ensure they remain below one metre per second. Where velocities are above one m/s, an increase of no more than 20 per cent is permitted		✓		✓	✓				✓		✓	✓	✓	✓

Environmental Performance Objective Topic	Environmental Performance Objective	AEW - Demolition	AEW – Gas	AEW - IPO	AEW – Power	AEW – Roadworks	AEW – St Marys Station Lift Relocation	AEW – Footbridge St Marys	AEW – St Marys Temporary Bus Interchange	AEW – Water	SBT – Preparatory Works	SBT – Bulk Excavation and Tunnelling Works	SCAW – Preparatory Works	SCAW – Mani excavation and viaduct works	SSTOM
	No change to flood hazard vulnerability classification limits for residential and commercial buildings or roads		✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	No change to flood hazard vulnerability classification limits for all land types as a result of the location of the permanent spoil placement areas at Western Sydney International											✓		✓	✓
	No change to the one per cent annual exceedance probability duration of inundation up to the following limits: • residential, commercial, critical infrastructure – no increase for above floor flooding • roads – maximum change of 10 per cent increase in duration • agricultural land for cropping – dependant on cropping type		✓		✓	✓			✓	✓		✓	✓	✓	✓

Environmental Performance Objective Topic	Environmental Performance Objective	AEW - Demolition	AEW – Gas	AEW - IPO	AEW – Power	AEW – Roadworks	AEW – St Marys Station Lift Relocation	AEW – Footbridge St Marys	AEW – St Marys Temporary Bus Interchange	AEW – Water	SBT – Preparatory Works	SBT – Bulk Excavation and Tunnelling Works	SCAW – Preparatory Works	SCAW – Mani excavation and viaduct works	SSTOM
	For moderate and high fragility watercourses impacted by the project (as defined by the NSW River Styles mapping (NSW, Department of Planning, Industry and Environment 2019)), maintain existing flow regimes and velocities as best as possible to preserve and minimise changes to the watercourses		✓		✓					✓				✓	✓
	Critical infrastructure (including stations entries and tunnel portals) to have immunity against the probable maximum flood event						✓	✓				✓		✓	✓
Long term impacts on surface water and groundwater hydrology (including drawdown, flow rates and volumes) are minimised	Groundwater availability and quality for water supply and environmental benefit (e.g. groundwater dependent ecosystems) is not affected beyond the requirements outlined in the NSW Aquifer Interference Policy		✓		✓		✓	✓		✓		✓		✓	✓
	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	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
The environmental values of land, including soils, subsoils and landforms, are protected	Contamination risks to human health and ecological receivers are minimised through effective management of existing contaminated land	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Environmental Performance Objective Topic	Environmental Performance Objective	AEW - Demolition	AEW – Gas	AEW - IPO	AEW – Power	AEW – Roadworks	AEW – St Marys Station Lift Relocation	AEW – Footbridge St Marys	AEW – St Marys Temporary Bus Interchange	AEW – Water	SBT – Preparatory Works	SBT – Bulk Excavation and Tunnelling Works	SCAW – Preparatory Works	SCAW – Mani excavation and viaduct works	SSTOM
Risks arising from the disturbance and excavation of land and disposal of soil are minimised, including disturbance to acid sulfate soils and site contamination	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	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
The project reduces the NSW Government's operating costs and ensures the effective and efficient use of resources Conservation of natural resources is maximised	The 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 initiatives are incorporated into the planning, design and construction of the project	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	100 per cent of the greenhouse gas emissions associated with consumption of electricity during operation are offset														✓
	25 per cent of the greenhouse gas emissions associated with consumption of electricity during construction are offset							✓			✓	✓	✓	✓	✓

Environmental Performance Objective Topic	Environmental Performance Objective	AEW - Demolition	AEW – Gas	AEW - IPO	AEW – Power	AEW – Roadworks	AEW – St Marys Station Lift Relocation	AEW – Footbridge St Marys	AEW – St Marys Temporary Bus Interchange	AEW – Water	SBT – Preparatory Works	SBT – Bulk Excavation and Tunnelling Works	SCAW – Preparatory Works	SCAW – Mani excavation and viaduct works	SSTOM
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							✓			✓	✓	✓	✓	✓
Conservation of natural resources is maximised	100 per cent of useable spoil is reused in accordance with the spoil reuse hierarchy	✓	✓		✓	✓	✓	✓		✓	✓	✓	✓	✓	
	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	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Environmental Performance Objective Topic	Environmental Performance Objective	AEW - Demolition	AEW – Gas	AEW - IPO	AEW – Power	AEW – Roadworks	AEW – St Marys Station Lift Relocation	AEW – Footbridge St Marys	AEW – St Marys Temporary Bus Interchange	AEW – Water	SBT – Preparatory Works	SBT – Bulk Excavation and Tunnelling Works	SCAW – Preparatory Works	SCAW – Mani excavation and viaduct works	SSTOM
Cumulative Impacts	**Cumulative impacts are managed through coordination of construction activities and communication processes with nearby projects (Western Sydney International, M12 Motorway, The Northern Road, St Marys Intermodal and St Marys Commuter Car Park Expansion)**	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Appendix D – Applicability of SMWSA REMM to each project stage

REMMs category	REMM #	AEW - Demolition	AEW – Gas	AEW – IPO	AEW – Power	AEW – Roadworks	AEW – St Marys Station Lift Relocation	AEW – Footbridge St Marys	AEW – St Marys Temporary Bus Interchange	AEW – Water	SBT - Preparatory Works	SBT – Bulk Excavation and Tunnelling	SCAW - Preparatory Works	SCAW – Main excavation and viaduct works	SSTOM
Transport – construction	T1	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	T2	Applicable	Not Applicable	Applicable	Applicable	Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Not Applicable	Not Applicable	Applicable
	T3	Applicable	Applicable	Not Applicable	Applicable	Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	T4	Applicable	Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	T5	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	T6	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	T7	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
	T8	Not Applicable	Applicable	Not Applicable	Applicable	Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	T9	Not Applicable	Not Applicable	Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable	Not Applicable	Applicable	Applicable	Not Applicable	Not Applicable	Applicable
Transport – operation	OT1	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	OT2	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	OT3	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	OT4	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Noise and vibration – construction	NV1	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Not Applicable	Not Applicable	Applicable
	NV2	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
Noise and vibration – operation	ONV1	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
Biodiversity – construction	FF1	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	FF2	Applicable	Applicable	Not Applicable	Applicable	Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	FF3	Not Applicable	Applicable	Not Applicable	Applicable	Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable
	FF4	Applicable	Applicable	Not Applicable	Applicable	Applicable	Not Applicable	Applicable	Not Applicable	Applicable	Applicable	Applicable	Not Applicable	Applicable	Applicable
	FF5	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
	FF6	Not Applicable	Applicable	Not Applicable	Applicable	Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	FF7	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Not Applicable
	FF8	Not Applicable	Applicable	Not Applicable	Applicable	Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Not Applicable
	FF9	Not Applicable	Applicable	Not Applicable	Applicable	Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Not Applicable
	FF10	Not Applicable	Applicable	Not Applicable	Applicable	Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	FF11	Applicable	Applicable	Not Applicable	Applicable	Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
Biodiversity – operation	OFF1	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable
	OFF2	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable
Non-Aboriginal heritage – construction	NAH1	Applicable	Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	NAH2	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Not Applicable	Not Applicable	Applicable
	NAH3	Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	NAH4	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED
	NAH5	Applicable	Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable

REMMs category	REMM #	AEW - Demolition	AEW – Gas	AEW – IPO	AEW – Power	AEW – Roadworks	AEW – St Marys Station Lift Relocation	AEW – Footbridge St Marys	AEW – St Marys Temporary Bus Interchange	AEW – Water	SBT - Preparatory Works	SBT – Bulk Excavation and Tunnelling	SCAW - Preparatory Works	SCAW – Main excavation and viaduct works	SSTOM
	NAH6	Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Not Applicable
	NAH7	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
	NAH8	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Not Applicable
	NAH9	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
Non-Aboriginal heritage – operation	ONAH1	Not Applicable	Not Applicable	Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	ONAH2	Not Applicable	Not Applicable	Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Not Applicable	Not Applicable	Applicable
	ONAH3	Not Applicable	Not Applicable	Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable	Not Applicable	Applicable	Applicable	Not Applicable	Applicable	Applicable
	ONAH4	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	ONAH5	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Not Applicable	Not Applicable	Applicable
	ONAH6	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable
	ONAH7	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Not Applicable	Applicable	Applicable
Aboriginal heritage – construction	AH1	Partial	Partial	Not Applicable	Partial	Partial	Applicable	Applicable	Partial	Partial	Partial	Partial	Partial	Partial	Partial
	AH2	Applicable	Applicable	Not Applicable	Applicable	Applicable	Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	AH3	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED
	AH4	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED
	AH5	Applicable	Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	AH6	Applicable	Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	AH7	Applicable	Applicable	Not Applicable	Applicable	Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	AH8	Applicable	Applicable	Not Applicable	Applicable	Applicable	Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	AH9	Applicable	Applicable	Not Applicable	Applicable	Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	AH10	Applicable	Applicable	Applicable	Applicable	Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	AH11	Applicable	Applicable	Applicable	Applicable	Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	AH12	Applicable	Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	AH13	Applicable	Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
Aboriginal heritage – operation	OAH1	Applicable	Applicable	Not Applicable	Applicable	Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
Flooding, hydrology and water quality – construction	HYD1	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	HYD2	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable
	HYD3	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable
	WQ1	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	WQ2	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Not Applicable	Applicable	Applicable
	WQ3	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable
Flooding, hydrology and water quality – operation	OHYD1	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable
	OHYD2	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Not Applicable	Not Applicable	Applicable
	OHYD3	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	OHYD4	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Not Applicable
	OWQ1	Not Applicable	Applicable	Not Applicable	Applicable	Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable

REMMs category	REMM #	AEW - Demolition	AEW – Gas	AEW – IPO	AEW – Power	AEW – Roadworks	AEW – St Marys Station Lift Relocation	AEW – Footbridge St Marys	AEW – St Marys Temporary Bus Interchange	AEW – Water	SBT - Preparatory Works	SBT – Bulk Excavation and Tunnelling	SCAW - Preparatory Works	SCAW – Main excavation and viaduct works	SSTOM
	OWQ2	Not Applicable	Applicable	Not Applicable	Applicable	Applicable	Not Applicable	Applicable	Not Applicable	Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	OWQ3	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	OWQ4	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Not Applicable
	OWQ5	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	OWQ6	Applicable	Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	OWQ7	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Not Applicable	Applicable	Applicable
Groundwater and geology – construction	GW1	Not Applicable	Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable
	GW2	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Not Applicable	Applicable	Applicable
	GW3	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Not Applicable	Not Applicable	Applicable
	GW4	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	GW5	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Not Applicable	Applicable	Applicable
	GW6	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Not Applicable	Applicable	Applicable
Groundwater and geology – operation	OGW1	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Not Applicable	Applicable	Applicable
Soils and contamination – construction	SC1	Applicable	Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	SC2	Applicable	Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	SC3	Applicable	Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	SC4	Applicable	Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	SC5	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	SC6	Applicable	Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable
	SC7	Applicable	Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	SC8	Applicable	Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	SC9	Applicable	Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	SC10	Applicable	Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	SC11	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Sustainability, climate change and greenhouse gas – construction	SUS1	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	SUS2	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	SUS3	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	GHG1	Applicable	Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
Sustainability, climate change and greenhouse gas – operation	OSUS1	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	OSUS2	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable
	OGHG1	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable
Resource management – construction	WR1	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	WR2	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	WR3	Applicable	Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
Resource management – operation	OWR1	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable

REMMs category	REMM #	AEW - Demolition	AEW – Gas	AEW – IPO	AEW – Power	AEW – Roadworks	AEW – St Marys Station Lift Relocation	AEW – Footbridge St Marys	AEW – St Marys Temporary Bus Interchange	AEW – Water	SBT - Preparatory Works	SBT – Bulk Excavation and Tunnelling	SCAW - Preparatory Works	SCAW – Main excavation and viaduct works	SSTOM
Land use and property – construction	LU1	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	LU2	Applicable	Applicable	Not Applicable	Applicable	Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	LU3	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
Land use and property – operation	OLU1	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	OLU2	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
Landscape and visual – construction	LV1	Applicable	Applicable	Applicable	Applicable	Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	LV2	Applicable	Applicable	Applicable	Applicable	Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	LV3	Not Applicable	Not Applicable	Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Not Applicable	Applicable	Applicable
Landscape and visual – operation	OLV1	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
	OLV2	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable
	OLV3	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Not Applicable	Applicable
	OLV4	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	OLV5	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable
	OLV6	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	OLV7	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable
Social and economic – construction	SE1	Applicable	Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	SE2	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED
	SE3	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
Air quality – construction	AQ1	Applicable	Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	AQ2	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Not Applicable	Not Applicable	Applicable
	AQ3	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
Hazard and risk – construction	HR1	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	HR2	Applicable	Applicable	Not Applicable	Applicable	Applicable	Not Applicable	Not Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable
	HR3	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Not Applicable	Applicable	Applicable
	HR4	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable
Hazard and risk – operation	OHR1	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable
	OHR2	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable
	OHR3	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable
	OHR4	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Applicable	Applicable
Cumulative impacts – construction	CL1	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable	Applicable

Appendix E - Applicability of SMWSA CEMF to each project stage

CEMF Topic	CEMF Section	AEW - Demolition	AEW – Gas	AEW – IPO	AEW – Power	AEW – Roadworks	AEW – St Marys Station Lift Relocation	AEW – Footbridge St Marys	AEW – St Marys Temporary Bus Interchange	AEW – Water	SBT – Preparatory Works	SBT – Bulk Excavation and Tunnelling	SCAW - Preparatory Works	SCAW – Main excavation and viaduct works	SSTOM
Introduction	1.1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	1.2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	1.3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Legislative and Other Requirements	2.2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	2.3										✓	✓	✓	✓	✓
	2.4														
	2.5	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	2.6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Environmental Management Requirements	3.1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	3.2			✓	✓		✓	✓			✓	✓	✓	✓	✓
	3.3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	3.4	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	3.5	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	3.6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

CEMF Topic	CEMF Section	AEW - Demolition	AEW – Gas	AEW – IPO	AEW – Power	AEW – Roadworks	AEW – St Marys Station Lift Relocation	AEW – Footbridge St Marys	AEW – St Marys Temporary Bus Interchange	AEW – Water	SBT – Preparatory Works	SBT – Bulk Excavation and Tunnelling	SCAW - Preparatory Works	SCAW – Main excavation and viaduct works	SSTOM
	3.7	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	3.8	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	3.9	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	3.10	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	3.11	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	3.12	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	3.13	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	3.14														
	3.15	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	3.16	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	3.17	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	3.18	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	3.19	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Stakeholder and Community Involvement	4.1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	4.2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	4.3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

CEMF Topic	CEMF Section	AEW - Demolition	AEW – Gas	AEW – IPO	AEW – Power	AEW – Roadworks	AEW – St Marys Station Lift Relocation	AEW – Footbridge St Marys	AEW – St Marys Temporary Bus Interchange	AEW – Water	SBT – Preparatory Works	SBT – Bulk Excavation and Tunnelling	SCAW - Preparatory Works	SCAW – Main excavation and viaduct works	SSTOM
	4.4	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	4.5	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
General Site Works	5.1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	5.2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	5.3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	5.4	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Spoil Management	6.1	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	6.2	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	6.3	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Groundwater Management	7.1		✓		✓	✓	✓	✓		✓	✓	✓		✓	
	7.2		✓		✓	✓	✓	✓		✓		✓		✓	
	7.3		✓		✓	✓	✓	✓		✓		✓		✓	
Construction Noise and Vibration	8.1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	8.2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	8.3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	9.1	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	

CEMF Topic	CEMF Section	AEW - Demolition	AEW – Gas	AEW – IPO	AEW – Power	AEW – Roadworks	AEW – St Marys Station Lift Relocation	AEW – Footbridge St Marys	AEW – St Marys Temporary Bus Interchange	AEW – Water	SBT – Preparatory Works	SBT – Bulk Excavation and Tunnelling	SCAW - Preparatory Works	SCAW – Main excavation and viaduct works	SSTOM
Heritage Management	9.2	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	
	9.3	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	
Flora and Fauna Management	10.1		✓	✓	✓	✓				✓	✓	✓	✓	✓	✓
	10.2		✓		✓	✓				✓	✓	✓	✓	✓	✓
	10.3		✓		✓	✓				✓	✓	✓	✓	✓	✓
Visual Amenity Management	11.1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	11.2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	11.3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Soil and Water Management	12.1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	12.2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	12.3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Air Quality	13.1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	13.2	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	13.3	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Waste Management	14.1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	14.2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

CEMF Topic	CEMF Section	AEW - Demolition	AEW – Gas	AEW – IPO	AEW – Power	AEW – Roadworks	AEW – St Marys Station Lift Relocation	AEW – Footbridge St Marys	AEW – St Marys Temporary Bus Interchange	AEW – Water	SBT – Preparatory Works	SBT – Bulk Excavation and Tunnelling	SCAW - Preparatory Works	SCAW – Main excavation and viaduct works	SSTOM
	14.3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Appendix F – AEW risk context and risk assessment

Risk Context for AEW – applicable to all sub-stages

Potential risks	Risk Context
Transport - construction	AEW activities have a high potential to cause temporary traffic, transport and parking impacts on the surrounding community without controls due to the requirements for lane closures, use of heavy vehicles, alterations to access and removal of parking. Traffic will be managed in accordance with a standalone Construction Traffic Management Plan (CTMP) that is consistent with the Sydney Metro Construction Traffic Management Framework (CTMF) and traffic mitigation measures as outlined in the SMWSA Submissions Report.
Noise and vibration - construction	AEW activities have a high potential to cause noise and vibration impacts on the surrounding community without controls due to the proximity of plant and equipment to residential areas. St Marys Station Lift Relocation and St Marys Temporary Bus Interchange are the two sub-stages that are predicted to have higher noise impacts during construction, however these will be short-term and discrete pieces of work.
Biodiversity – construction	It is not expected that any vegetation clearance requiring offset will occur within AEW scope of works. Minor vegetation clearance is proposed at Aerotropolis Core, along the Kemps Creek utilities route and potentially a few street trees at St Marys near the lift shaft and temporary bus interchange.
Non-Aboriginal heritage - construction	It is not expected that any listed heritage items will be impacted by the works excluding the lift relocation works and a small part of the temporary bus interchange works which are within the State Heritage Curtilage. The Archaeological Research Design found that potential for relics in these areas is limited and could be managed through the Sydney Metro Unexpected Heritage Finds Procedure. Items and locations that have potential heritage value will be managed in accordance with the relevant CoA, EPOs and REMMs.
Aboriginal heritage – construction	The ACHMP, as updated in accordance with CoA, will be implemented for all works associated with the project. The ACHMP provides certainty over the known areas of archaeological sensitivity and the procedures that will be implemented.
Flooding, Hydrology and Water Quality – construction	Some AEW worksites will be within areas affected by the probable maximum flood (PMF). Temporary water quality impacts may be caused due to spills, erosion, and discharge of contaminated water. Trenching works will progressively expose and backfill soil along the route, limiting the exposed area and reducing the risk of erosion and sediment impacts.
Groundwater and Geology - construction	The majority of works in the AEW package will only require shallow excavations and are not expected to encounter groundwater. Utility works will require an under bore under the M4 at a depth of 15 metres and also horizontal directional drilling under creeks. Due to the methodology, any changes to groundwater would be relatively small and water levels at this location are expected to recover during the operational phase.
Soils and contamination - construction	Most excavations would be relatively shallow and only impact a small area. Utility works will progressively expose and backfill soil along the routes, limiting the risk of water quality impacts. While soil is exposed, rainfall has the potential to cause sedimentation to enter into adjacent stormwater systems. Several areas of contamination have been identified at St Marys, Aerotropolis Core, and Orchard Hills. The lift shaft and TBI works are outside locations identified as an area of environmental concern (AEC). Utility works at Aerotropolis Core and Orchard Hills are not expected to have a high risk of contamination as only a small portion of the route enter areas of environmental concern. Demolition of building, structures and underground storage tanks at Aerotropolis Core have potential to cause localised contamination, including asbestos in existing buildings and structures

Potential risks	Risk Context
Sustainability, climate change and greenhouse gas - construction	Due to the small scale of AEW works and the short-term temporary nature of the individual construction work, it is considered that greenhouse gas emissions would be minimal and the works are unlikely to be affected by the impacts of climate change.
Resource management - construction	Waste generated as part of AEW would undergo waste classification prior to transportation and disposal. Other materials would be classified into waste streams, recycled or transported off-site for disposal.
Land use and property - construction	Sydney Metro would acquire the land for the temporary bus interchange and some demolition of residential and other smaller structures would be undertaken, but otherwise would have no property impacts associated with the AEW works. Access to properties would be maintained.
Landscape and Visual Impact - construction	Minor temporary visual impacts would occur with respect to construction sites and the visibility of plant and equipment in residential areas. Minor vegetation clearance is proposed at Aerotropolis Core, along the Kemps Creek utilities route and potentially a few street trees at St Marys near the lift shaft and temporary bus interchange.
Social and economic - construction	While construction activities will be temporary, there will be localised amenity impacts on residential receivers and social infrastructure as well as traffic impacts and loss of parking.
Air Quality - construction	Ground disturbing works and the use of plant and light vehicles could mobilise dust in work areas, and due to the proximity of these works to residential receivers it is likely dust impacts would occur without controls.
Hazard and risk - construction	Transport and storage of hazardous substances and dangerous goods will be limited for AEW works and potential risks would be managed in accordance with NSW guidelines including the Storage and Handling of Dangerous Goods Code of Practice (WorkCover NSW, 2005) and applying SEPP 33 (Department of Planning, 2011) as required. Some works areas are located within bushfire prone land. Bushfire risk will be minimised through standard site management practices, presence of fire appliances (e.g. extinguisher) in risk areas as well as compliance with utility provider guidelines and total fire ban controls in extreme weather events.
Cumulative impacts - construction	Some of the AEW works will interact with external projects such as Western Sydney Airport and the Multistorey car park upgrade at St Marys although the majority of AEW will not interact with other external projects. Cumulative impacts are expected to be minimal given the limited and temporary nature of the works.

Risk Assessment for AEW – Demolition								
Risk Area	**Risk Statements**	**C**	**L**	**Inherent Risk Rating**	**Controls**	**C**	**L**	**Residual Risk Rating**
Transport - construction	A lack of mitigation measures and management systems in relation to traffic management leads to frequent non-compliance with the Planning Approval.	C5	L4	Low	• CTMF/CTMP	C5	L5	Low
Noise and vibration - construction	A lack of mitigation measures and management systems in relation to Noise and Vibration management leads to unreasonable impacts on residents and businesses, and structural damage to buildings or heritage items.	C4	L3	Med	• CNVS • Standard and project specific mitigation measures • Included in CEMP risk assessment	C5	L5	Low
Biodiversity – construction	A lack of mitigation measures and management systems in relation to biodiversity management leads to unreasonable impacts to flora and fauna, spread of weeds and pathogens, and unintended vegetation clearance.	C5	L6	Low	• Standard and project specific mitigation measures • Replacement of street trees 2:1 / certified areas • Included in CEMP risk assessment	C6	L6	Low
Non-Aboriginal heritage - construction	A lack of mitigation measures and management systems in relation to Heritage management leads to poor integration of heritage values in design and impacts on heritage items outside of what has been approved.	C5	L6	Low	• Unexpected Finds Procedure • Standard and project specific mitigation measures • Included in CEMP risk assessment	C5	L6	Low

Risk Assessment for AEW – Demolition								
Risk Area	**Risk Statements**	**C**	**L**	**Inherent Risk Rating**	**Controls**	**C**	**L**	**Residual Risk Rating**
Aboriginal heritage – construction	A lack of mitigation measures and management systems in relation to Heritage management leads to poor integration of heritage values in design and impacts on heritage items outside of what has been approved.	C5	L6	Low	• Unexpected Finds Procedure • Approved / updated ACHMP	C5	L6	Low
Flooding, Hydrology and Water Quality – construction	A lack of mitigation measures and management systems in relation to soil and water management leads to unexpected pollution events, water quality impacts on adjacent water bodies, and soil erosion.	C5	L4	Low	• Standard and project specific mitigation measures • Included in CEMP risk assessment	C5	L5	Low
Groundwater and Geology - construction	A lack of mitigation measures and management systems in relation to groundwater management leads to groundwater drawdown, groundwater pollution and impacts of groundwater dependant ecosystems.	C5	L4	Low	• Standard and project specific mitigation measures • Included in CEMP risk assessment	C5	L4	Low
Soils and contamination - construction	A lack of mitigation measures and management systems in relation to soil and water management leads to unexpected pollution events, water quality impacts on adjacent water bodies, and soil erosion.	C3	L5	Medium	• Unexpected Contaminated Land and Asbestos Finds Procedure • Standard and project specific mitigation measures, including discharge hold point • Included in CEMP risk assessment	C5	L4	Low

Risk Assessment for AEW – Demolition								
Risk Area	**Risk Statements**	**C**	**L**	**Inherent Risk Rating**	**Controls**	**C**	**L**	**Residual Risk Rating**
Sustainability, climate change and greenhouse gas - construction	A lack of mitigation measures and management systems in relation to Sustainability, climate change and greenhouse gas leads to excessive greenhouse generation, and a lack of consideration of potential climate change risks.	C5	L3	Med	• Included in CEMP risk assessment	C6	L5	Low
Resource management - construction	A lack of mitigation measures and management systems in relation to waste management leads to excessive waste generation, and inappropriate waste classification and disposal.	C4	L5	Low	• Waste Classification Procedure • Standard and project specific mitigation measures • Included in CEMP risk assessment	C5	L5	Low
Land use and property - construction	A lack of mitigation measures and management systems in relation to land use and property lead to land use and property impacts outside of project approval.	N/A	N/A	N/A	• Standard and project specific mitigation measures • Included in CEMP risk assessment	N/A	N/A	N/A
Landscape and Visual Impact - construction	A lack of mitigation measures and management systems in relation to visual amenity management leads to unreasonable visual impacts on the surrounding community, landscape features and poor landscape design outcomes.	C5	L5	Low	• Standard and project specific mitigation measures • Included in CEMP risk assessment	C6	L5	Low

Risk Assessment for AEW – Demolition								
Risk Area	**Risk Statements**	**C**	**L**	**Inherent Risk Rating**	**Controls**	**C**	**L**	**Residual Risk Rating**
Social and economic - construction	Amenity impacts not appropriately mitigated or managed lead to unreasonable impacts on the community. A lack of mitigation measures and management systems in relation to community management results in community concern.	C5	L5	Low	• Standard and project specific mitigation measures – amenity impacts • OCCS; SBMP • Included in CEMP risk assessment	C6	L4	Low
Air Quality - construction	A lack of mitigation measures and management systems in relation to air quality management leads to unreasonable particulate pollutant emissions from construction activities.	C5	L4	Low	• Standard and project specific mitigation measures • Included in CEMP risk assessment	C6	L5	Low
Hazard and risk - construction	A lack of management systems in relation to hazards and risks leads to breaches of legislation and environmental standards	C3	L2	High	• NSW guidelines • Included in CEMP risk assessment	C4	L5	Low
Cumulative impacts - construction	A lack of management systems in relation to cumulative impacts leads to excessive impacts on local community	C5	L4	Low	• Included in CEMP risk assessment	C5	L4	

Risk Assessment for AEW – Gas								
Risk Area	**Risk Statements**	**C**	**L**	**Inherent Risk Rating**	**Controls**	**C**	**L**	**Residual Risk Rating**
Transport - construction	A lack of mitigation measures and management systems in relation to traffic management leads to frequent non-compliance with the Planning Approval.	C5	L3	Medium	• CTMF/CTMP	C6	L4	Low
Noise and vibration - construction	A lack of mitigation measures and management systems in relation to Noise and Vibration management leads to unreasonable impacts on residents and businesses, and structural damage to buildings or heritage items.	C5	L3	Medium	• Standard and project specific mitigation measures • Included in CEMP risk assessment	C5	L4	Low
Biodiversity – construction	A lack of mitigation measures and management systems in relation to biodiversity management leads to unreasonable impacts to flora and fauna, spread of weeds and pathogens, and unintended vegetation clearance.	C5	L4	Low	• Standard and project specific mitigation measures • Replacement of street trees 2:1 / certified areas • Included in CEMP risk assessment	C6	L4	Low
Non-Aboriginal heritage - construction	A lack of mitigation measures and management systems in relation to Heritage management leads to poor integration of heritage values in design and impacts on heritage items outside of what has been approved.	C5	L5	Low	• Unexpected Finds Procedure • Standard and project specific mitigation measures • Included in CEMP risk assessment	C6	C6	Low

Risk Assessment for AEW – Gas								
Risk Area	**Risk Statements**	**C**	**L**	**Inherent Risk Rating**	**Controls**	**C**	**L**	**Residual Risk Rating**
Aboriginal heritage – construction	A lack of mitigation measures and management systems in relation to Heritage management leads to poor integration of heritage values in design and impacts on heritage items outside of what has been approved.	C5	L3	Medium	• Unexpected Finds Procedure • Approved / updated ACHMP	C5	L4	Low
Flooding, Hydrology and Water Quality – construction	A lack of mitigation measures and management systems in relation to soil and water management leads to unexpected pollution events, water quality impacts on adjacent water bodies, and soil erosion.	C5	L3	Medium	• Standard and project specific mitigation measures • Included in CEMP risk assessment	C5	L5	Low
Groundwater and Geology - construction	A lack of mitigation measures and management systems in relation to groundwater management leads to groundwater drawdown, groundwater pollution and impacts of groundwater dependant ecosystems.	C5	L4	Low	• Standard and project specific mitigation measures • Included in CEMP risk assessment	C6	L5	Low
Soils and contamination - construction	A lack of mitigation measures and management systems in relation to soil and water management leads to unexpected pollution events, water quality impacts on adjacent water bodies, and soil erosion.	C4	L3	Medium	• Unexpected Contaminated Lands and Asbestos Finds Procedure • Standard and project specific mitigation measures, including discharge hold point • Included in CEMP risk assessment	C5	L4	Low

Risk Assessment for AEW – Gas								
Risk Area	**Risk Statements**	**C**	**L**	**Inherent Risk Rating**	**Controls**	**C**	**L**	**Residual Risk Rating**
Sustainability, climate change and greenhouse gas - construction	A lack of mitigation measures and management systems in relation to Sustainability, climate change and greenhouse gas leads to excessive greenhouse generation, and a lack of consideration of potential climate change risks.	C5	L4	Low	• Included in CEMP risk assessment	C6	L5	Low
Resource management - construction	A lack of mitigation measures and management systems in relation to waste management leads to excessive waste generation, and inappropriate waste classification and disposal.	C5	L4	Low	• Waste Classification Procedure • Standard and project specific mitigation measures • Included in CEMP risk assessment	C6	L5	Low
Land use and property - construction	A lack of mitigation measures and management systems in relation to land use and property lead to land use and property impacts outside of project approval.	C5	L5	Low	• Standard and project specific mitigation measures • Included in CEMP risk assessment	C6	L5	Low
Landscape and Visual Impact - construction	A lack of mitigation measures and management systems in relation to visual amenity management leads to unreasonable visual impacts on the surrounding community, landscape features and poor landscape design outcomes.	C5	L3	Medium	• Standard and project specific mitigation measures • Included in CEMP risk assessment	C6	L4	Low
Social and economic - construction	Amenity impacts not appropriately mitigated or managed lead to unreasonable impacts on the community. A lack of mitigation measures and management systems in relation to community management results in community concern.	C5	L3	Medium	• Standard and project specific mitigation measures – amenity impacts • OCCS; SBMP • Included in CEMP risk assessment	C6	L5	Low

Risk Assessment for AEW – Gas								
Risk Area	**Risk Statements**	**C**	**L**	**Inherent Risk Rating**	**Controls**	**C**	**L**	**Residual Risk Rating**
Air Quality - construction	A lack of mitigation measures and management systems in relation to air quality management leads to unreasonable particulate pollutant emissions from construction activities.	C5	L3	Medium	• Standard and project specific mitigation measures • Included in CEMP risk assessment	C6	L5	Low
Hazard and risk - construction	A lack of management systems in relation to hazards and risks leads to breaches of legislation and environmental standards	C5	L4	Low	• NSW guidelines • Included in CEMP risk assessment	C5	L4	Low
Cumulative impacts - construction	A lack of management systems in relation to cumulative impacts leads to excessive impacts on local community	C5	L4	Low	• Included in CEMP risk assessment	C5	L4	Low

Risk Assessment for AEW – IPO								
Risk Area	**Risk Statements**	**C**	**L**	**Inherent Risk Rating**	**Controls**	**C**	**L**	**Residual Risk Rating**
Transport - construction	A lack of mitigation measures and management systems in relation to traffic management leads to frequent non-compliance with the Planning Approval.	C5	L3	Medium	• CTMF/CTMP	C6	L4	Low
Noise and vibration - construction	A lack of mitigation measures and management systems in relation to Noise and Vibration management leads to unreasonable impacts on residents and businesses, and structural damage to buildings or heritage items.	C5	L3	Medium	• Standard and project specific mitigation measures • Included in SEMP risk assessment	C5	L4	Low
Biodiversity – construction	A lack of mitigation measures and management systems in relation to biodiversity management leads to unreasonable impacts to flora and fauna, spread of weeds and pathogens, and unintended vegetation clearance.	C5	L5	Low	• Standard and project specific mitigation measures • Replacement of street trees 2:1 / certified areas • Included in SEMP risk assessment	C6	L5	Low
Non-Aboriginal heritage - construction	A lack of mitigation measures and management systems in relation to Heritage management leads to poor integration of heritage values in design and impacts on heritage items outside of what has been approved.	C4	L4	Medium	• Unexpected Finds Procedure • Standard and project specific mitigation measures • Included in SEMP risk assessment	C6	L5	Low
Aboriginal heritage – construction	A lack of mitigation measures and management systems in relation to Heritage management leads to poor integration of heritage values in design and impacts on heritage items outside of what has been approved.	C5	L4	Low	• Unexpected Finds Procedure • Approved / updated ACHMP	C5	L5	Low

Risk Assessment for AEW – IPO								
Risk Area	**Risk Statements**	**C**	**L**	**Inherent Risk Rating**	**Controls**	**C**	**L**	**Residual Risk Rating**
Flooding, Hydrology and Water Quality – construction	A lack of mitigation measures and management systems in relation to soil and water management leads to unexpected pollution events, water quality impacts on adjacent water bodies, and soil erosion.	C5	L4	Low	• Standard and project specific mitigation measures • Included in SEMP risk assessment	C5	L5	Low
Groundwater and Geology - construction	A lack of mitigation measures and management systems in relation to groundwater management leads to groundwater drawdown, groundwater pollution and impacts of groundwater dependant ecosystems.	C5	L5	Low	• Standard and project specific mitigation measures • Included in SEMP risk assessment	C5	L6	Low
Soils and contamination - construction	A lack of mitigation measures and management systems in relation to soil and water management leads to unexpected pollution events, water quality impacts on adjacent water bodies, and soil erosion.	C4	L4	Medium	• Unexpected Contaminated Lands and Asbestos Finds Procedure • Standard and project specific mitigation measures, including discharge hold point • Included in SEMP risk assessment	C4	L5	Low
Sustainability, climate change and greenhouse gas - construction	A lack of mitigation measures and management systems in relation to Sustainability, climate change and greenhouse gas leads to excessive greenhouse generation, and a lack of consideration of potential climate change risks.	C5	L4	Low	• Included in SEMP risk assessment	C5	L5	Low

Risk Assessment for AEW – IPO								
Risk Area	**Risk Statements**	**C**	**L**	**Inherent Risk Rating**	**Controls**	**C**	**L**	**Residual Risk Rating**
Resource management - construction	A lack of mitigation measures and management systems in relation to waste management leads to excessive waste generation, and inappropriate waste classification and disposal.	C5	L4	Low	• Waste Classification Procedure • Standard and project specific mitigation measures • Included in SEMP risk assessment	C5	L5	Low
Land use and property - construction	A lack of mitigation measures and management systems in relation to land use and property lead to land use and property impacts outside of project approval.	C5	L5	Low	• Standard and project specific mitigation measures • Included in SEMP risk assessment	C5	L5	Low
Landscape and Visual Impact - construction	A lack of mitigation measures and management systems in relation to visual amenity management leads to unreasonable visual impacts on the surrounding community, landscape features and poor landscape design outcomes.	C4	L3	Medium	• Standard and project specific mitigation measures • Included in SEMP risk assessment	C4	L5	Low
Social and economic - construction	Amenity impacts not appropriately mitigated or managed lead to unreasonable impacts on the community. A lack of mitigation measures and management systems in relation to community management results in community concern.	C4	L3	Medium	• Standard and project specific mitigation measures – amenity impacts • OCCS; SBMP • Included in SEMP risk assessment	C4	L5	Low
Air Quality - construction	A lack of mitigation measures and management systems in relation to air quality management leads to unreasonable particulate pollutant emissions from construction activities.	C5	L3	Medium	• Standard and project specific mitigation measures • Included in SEMP risk assessment	C5	L5	Low

Risk Assessment for AEW – IPO								
Risk Area	**Risk Statements**	**C**	**L**	**Inherent Risk Rating**	**Controls**	**C**	**L**	**Residual Risk Rating**
Hazard and risk - construction	A lack of management systems in relation to hazards and risks leads to breaches of legislation and environmental standards	C5	L4	Low	• NSW guidelines • Included in SEMP risk assessment	C5	L5	Low
Cumulative impacts - construction	A lack of management systems in relation to cumulative impacts leads to excessive impacts on local community	C5	L4	Low	• Included in SEMP risk assessment	C5	L4	Low

Risk Assessment for AEW – Power								
Risk Area	**Risk Statements**	**C**	**L**	**Inherent Risk Rating**	**Controls**	**C**	**L**	**Residual Risk Rating**
Transport - construction	A lack of mitigation measures and management systems in relation to traffic management leads to frequent non-compliance with the Planning Approval.	C5	L3	Medium	• CTMF/CTMP	C6	L4	Low
Noise and vibration - construction	A lack of mitigation measures and management systems in relation to Noise and Vibration management leads to unreasonable impacts on residents and businesses, and structural damage to buildings or heritage items.	C5	L5	Medium	• Standard and project specific mitigation measures • Included in CEMP risk assessment	C5	L4	Low
Biodiversity – construction	A lack of mitigation measures and management systems in relation to biodiversity management leads to unreasonable impacts to flora and fauna, spread of weeds and pathogens, and unintended vegetation clearance.	C5	L4	Medium	• Standard and project specific mitigation measures • Replacement of street trees 2:1 / certified areas • Included in CEMP risk assessment	C5	L5	Low
Non-Aboriginal heritage - construction	A lack of mitigation measures and management systems in relation to Heritage management leads to poor integration of heritage values in design and impacts on heritage items outside of what has been approved.	C5	L5	Low	• Unexpected Finds Procedure • Standard and project specific mitigation measures • Included in CEMP risk assessment	C5	L6	Low

Risk Assessment for AEW – Power								
Risk Area	**Risk Statements**	**C**	**L**	**Inherent Risk Rating**	**Controls**	**C**	**L**	**Residual Risk Rating**
Aboriginal heritage – construction	A lack of mitigation measures and management systems in relation to Heritage management leads to poor integration of heritage values in design and impacts on heritage items outside of what has been approved.	C4	L3	Medium	• Unexpected Finds Procedure • Approved / updated ACHMP	C5	L4	Low
Flooding, Hydrology and Water Quality – construction	A lack of mitigation measures and management systems in relation to soil and water management leads to unexpected pollution events, water quality impacts on adjacent water bodies, and soil erosion.	C4	L4	Medium	• Standard and project specific mitigation measures • Included in CEMP risk assessment	C5	L5	Low
Groundwater and Geology - construction	A lack of mitigation measures and management systems in relation to groundwater management leads to groundwater drawdown, groundwater pollution and impacts of groundwater dependant ecosystems.	C5	L3	Medium	• Standard and project specific mitigation measures • Included in CEMP risk assessment	C5	L5	Low
Soils and contamination - construction	A lack of mitigation measures and management systems in relation to soil and water management leads to unexpected pollution events, water quality impacts on adjacent water bodies, and soil erosion.	C4	L3	Medium	• Unexpected Contaminated Land and Asbestos Finds Procedure • Standard and project specific mitigation measures, including discharge hold point • Included in CEMP risk assessment	C5	L4	Low

Risk Assessment for AEW – Power								
Risk Area	**Risk Statements**	**C**	**L**	**Inherent Risk Rating**	**Controls**	**C**	**L**	**Residual Risk Rating**
Sustainability, climate change and greenhouse gas - construction	A lack of mitigation measures and management systems in relation to Sustainability, climate change and greenhouse gas leads to excessive greenhouse generation, and a lack of consideration of potential climate change risks.	C5	L4	Low	• Included in CEMP risk assessment	C6	L4	Low
Resource management - construction	A lack of mitigation measures and management systems in relation to waste management leads to excessive waste generation, and inappropriate waste classification and disposal.	C5	L4	Low	• Waste Classification Procedure • Standard and project specific mitigation measures • Included in CEMP risk assessment	C6	L5	Low
Land use and property - construction	A lack of mitigation measures and management systems in relation to land use and property lead to land use and property impacts outside of project approval.	C5	L5	Low	• Standard and project specific mitigation measures • Included in CEMP risk assessment	C6	L5	Low
Landscape and Visual Impact - construction	A lack of mitigation measures and management systems in relation to visual amenity management leads to unreasonable visual impacts on the surrounding community, landscape features and poor landscape design outcomes.	C5	L3	Medium	• Standard and project specific mitigation measures • Included in CEMP risk assessment	C6	L4	Low

Risk Assessment for AEW – Power								
Risk Area	**Risk Statements**	**C**	**L**	**Inherent Risk Rating**	**Controls**	**C**	**L**	**Residual Risk Rating**
Social and economic - construction	Amenity impacts not appropriately mitigated or managed lead to unreasonable impacts on the community. A lack of mitigation measures and management systems in relation to community management results in community concern.	C5	L3	Medium	• Standard and project specific mitigation measures – amenity impacts • OCCS; SBMP • Included in CEMP risk assessment	C6	L5	Low
Air Quality - construction	A lack of mitigation measures and management systems in relation to air quality management leads to unreasonable particulate pollutant emissions from construction activities.	C5	L3	Medium	• Standard and project specific mitigation measures • Included in CEMP risk assessment	C6	L5	Low
Hazard and risk - construction	A lack of management systems in relation to hazards and risks leads to breaches of legislation and environmental standards	C5	L4	Low	• NSW guidelines • Included in CEMP risk assessment	C5	L5	Low
Cumulative impacts - construction	A lack of management systems in relation to cumulative impacts leads to excessive impacts on local community	C5	L4	Low	• Included in CEMP risk assessment	C5	L5	Low

Risk Assessment for AEW – Roadworks								
Risk Area	**Risk Statements**	**C**	**L**	**Inherent Risk Rating**	**Controls**	**C**	**L**	**Residual Risk Rating**
Transport - construction	A lack of mitigation measures and management systems in relation to traffic management leads to frequent non-compliance with the Planning Approval.	C4	L3	Med	• CTMF/CTMP	C5	L4	Low
Noise and vibration - construction	A lack of mitigation measures and management systems in relation to Noise and Vibration management leads to unreasonable impacts on residents and businesses, and structural damage to buildings or heritage items.	C5	L3	Med	• Standard and project specific mitigation measures • Included in CEMP risk assessment	C5	L5	Low
Biodiversity – construction	A lack of mitigation measures and management systems in relation to biodiversity management leads to unreasonable impacts to flora and fauna, spread of weeds and pathogens, and unintended vegetation clearance.	C5	L6	Low	• Standard and project specific mitigation measures • Replacement of street trees 2:1 / certified areas • Included in CEMP risk assessment	C6	L6	Low
Non-Aboriginal heritage - construction	A lack of mitigation measures and management systems in relation to Heritage management leads to poor integration of heritage values in design and impacts on heritage items outside of what has been approved.	C6	L6	Low	• Unexpected Finds Procedure • Standard and project specific mitigation measures • Included in CEMP risk assessment	C6	L6	Low

Risk Assessment for AEW – Roadworks								
Risk Area	**Risk Statements**	**C**	**L**	**Inherent Risk Rating**	**Controls**	**C**	**L**	**Residual Risk Rating**
Aboriginal heritage – construction	A lack of mitigation measures and management systems in relation to Heritage management leads to poor integration of heritage values in design and impacts on heritage items outside of what has been approved.	C4	L6	Low	• Unexpected Finds Procedure • Approved / updated ACHMP	C5	L6	Low
Flooding, Hydrology and Water Quality – construction	A lack of mitigation measures and management systems in relation to soil and water management leads to unexpected pollution events, water quality impacts on adjacent water bodies, and soil erosion.	C4	L3	Med	• Standard and project specific mitigation measures • Included in CEMP risk assessment	C5	L5	Low
Groundwater and Geology - construction	A lack of mitigation measures and management systems in relation to groundwater management leads to groundwater drawdown, groundwater pollution and impacts of groundwater dependant ecosystems.	C5	L3	Med	• Standard and project specific mitigation measures • Included in CEMP risk assessment	C6	L4	Low
Soils and contamination - construction	A lack of mitigation measures and management systems in relation to soil and water management leads to unexpected pollution events, water quality impacts on adjacent water bodies, and soil erosion.	C4	L3	Med	• Unexpected Contaminated Land and Asbestos Finds Procedure • Standard and project specific mitigation measures • Included in CEMP risk assessment	C5	L4	Low

Risk Assessment for AEW – Roadworks								
Risk Area	**Risk Statements**	**C**	**L**	**Inherent Risk Rating**	**Controls**	**C**	**L**	**Residual Risk Rating**
Sustainability, climate change and greenhouse gas - construction	A lack of mitigation measures and management systems in relation to Sustainability, climate change and greenhouse gas leads to excessive greenhouse generation, and a lack of consideration of potential climate change risks.	C5	L3	Med	• Included in CEMP risk assessment	C6	L5	Low
Resource management - construction	A lack of mitigation measures and management systems in relation to waste management leads to excessive waste generation, and inappropriate waste classification and disposal.	C5	L4	Low	• Waste Classification Procedure • Standard and project specific mitigation measures • Included in CEMP risk assessment	C5	L5	Low
Land use and property - construction	A lack of mitigation measures and management systems in relation to land use and property lead to land use and property impacts outside of project approval.	N/A	N/A	N/A	• N/A	N/A	N/A	N/A
Landscape and Visual Impact - construction	A lack of mitigation measures and management systems in relation to visual amenity management leads to unreasonable visual impacts on the surrounding community, landscape features and poor landscape design outcomes.	C4	L3	Med	• Standard and project specific mitigation measures • Included in CEMP risk assessment	C5	L4	Low

Risk Assessment for AEW – Roadworks								
Risk Area	**Risk Statements**	**C**	**L**	**Inherent Risk Rating**	**Controls**	**C**	**L**	**Residual Risk Rating**
Social and economic - construction	Amenity impacts not appropriately mitigated or managed lead to unreasonable impacts on the community. A lack of mitigation measures and management systems in relation to community management results in community concern.	C5	L3	Med	• Standard and project specific mitigation measures – amenity impacts • OCCS; SBMP • Included in CEMP risk assessment	C5	L4	Low
Air Quality - construction	A lack of mitigation measures and management systems in relation to air quality management leads to unreasonable particulate pollutant emissions from construction activities.	C5	L3	Med	• Standard and project specific mitigation measures • Included in CEMP risk assessment	C6	L5	Low
Hazard and risk - construction	A lack of management systems in relation to hazards and risks leads to breaches of legislation and environmental standards	C5	L4	Low	• NSW guidelines • Included in CEMP risk assessment	C5	L5	Low
Cumulative impacts - construction	A lack of management systems in relation to cumulative impacts leads to excessive impacts on local community	C5	L4	Low	• Included in CEMP risk assessment	C5	L5	Low

Risk Assessment for AEW – St Marys Station Lift Relocation								
Risk Area	**Risk Statements**	**C**	**L**	**Inherent Risk Rating**	**Controls**	**C**	**L**	**Residual Risk Rating**
Transport - construction	A lack of mitigation measures and management systems in relation to traffic management leads to frequent non-compliance with the Planning Approval.	C5	L1	High	• CTMF/CTMP	C5	L7	Low
Noise and vibration - construction	A lack of mitigation measures and management systems in relation to Noise and Vibration management leads to unreasonable impacts on residents and businesses, and structural damage to buildings or heritage items.	C4	L3	Medium	• Standard and project specific mitigation measures • Included in CEMP risk assessment	C5	L3	Medium
Biodiversity – construction	A lack of mitigation measures and management systems in relation to biodiversity management leads to unreasonable impacts to flora and fauna, spread of weeds and pathogens, and unintended vegetation clearance.	C5	L5	Low	• Standard and project specific mitigation measures • Replacement of street trees 2:1 / certified areas • Included in CEMP risk assessment	C5	L6	Low
Non-Aboriginal heritage - construction	A lack of mitigation measures and management systems in relation to Heritage management leads to poor integration of heritage values in design and impacts on heritage items outside of what has been approved.	C3	L3	High	• Unexpected Finds Procedure • Standard and project specific mitigation measures • Included in CEMP risk assessment	C5	L4	Low

Risk Assessment for AEW – St Marys Station Lift Relocation								
Risk Area	**Risk Statements**	**C**	**L**	**Inherent Risk Rating**	**Controls**	**C**	**L**	**Residual Risk Rating**
Aboriginal heritage – construction	A lack of mitigation measures and management systems in relation to Heritage management leads to poor integration of heritage values in design and impacts on heritage items outside of what has been approved.	C4	L6	Low	• Unexpected Finds Procedure • Approved / updated ACHMP	C5	L6	Low
Flooding, Hydrology and Water Quality – construction	A lack of mitigation measures and management systems in relation to soil and water management leads to unexpected pollution events, water quality impacts on adjacent water bodies, and soil erosion.	C4	L5	Low	• Standard and project specific mitigation measures • Included in CEMP risk assessment	C5	L5	Low
Groundwater and Geology - construction	A lack of mitigation measures and management systems in relation to groundwater management leads to groundwater drawdown, groundwater pollution and impacts of groundwater dependant ecosystems.	C4	L5	Low	• Standard and project specific mitigation measures • Included in CEMP risk assessment	C4	L5	Low
Soils and contamination - construction	A lack of mitigation measures and management systems in relation to soil and water management leads to unexpected pollution events, water quality impacts on adjacent water bodies, and soil erosion.	C5	L3	Medium	• Unexpected Contaminated Land and Asebestos Finds Procedure • Standard and project specific mitigation measures • Included in CEMP risk assessment	C5	L4	Low

Risk Assessment for AEW – St Marys Station Lift Relocation								
Risk Area	**Risk Statements**	**C**	**L**	**Inherent Risk Rating**	**Controls**	**C**	**L**	**Residual Risk Rating**
Sustainability, climate change and greenhouse gas - construction	A lack of mitigation measures and management systems in relation to Sustainability, climate change and greenhouse gas leads to excessive greenhouse generation, and a lack of consideration of potential climate change risks..	C5	L4	Low	• Included in CEMP risk assessment	C6	L4	Low
Resource management - construction	A lack of mitigation measures and management systems in relation to waste management leads to excessive waste generation, and inappropriate waste classification and disposal.	C5	L4	Low	• Waste Classification Procedure • Standard and project specific mitigation measures • Included in CEMP risk assessment	C6	L5	Low
Land use and property - construction	A lack of mitigation measures and management systems in relation to land use and property lead to land use and property impacts outside of project approval.	C5	L4	Low	• Standard and project specific mitigation measures • Included in CEMP risk assessment	C6	L5	Low
Landscape and Visual Impact - construction	A lack of mitigation measures and management systems in relation to visual amenity management leads to unreasonable visual impacts on the surrounding community, landscape features and poor landscape design outcomes.	C5	L3	Medium	• Standard and project specific mitigation measures • Included in CEMP risk assessment	C5	L5	Low

Risk Assessment for AEW – St Marys Station Lift Relocation								
Risk Area	**Risk Statements**	**C**	**L**	**Inherent Risk Rating**	**Controls**	**C**	**L**	**Residual Risk Rating**
Social and economic - construction	Amenity impacts not appropriately mitigated or managed lead to unreasonable impacts on the community. A lack of mitigation measures and management systems in relation to community management results in community concern.	C5	L3	Medium	• Standard and project specific mitigation measures – amenity impacts • OCCS; SBMP • Included in CEMP risk assessment	C5	L4	Low
Air Quality - construction	A lack of mitigation measures and management systems in relation to air quality management leads to unreasonable particulate pollutant emissions from construction activities.	C5	L3	Medium	• Standard and project specific mitigation measures • Included in CEMP risk assessment	C5	L4	Low
Hazard and risk - construction	A lack of management systems in relation to hazards and risks leads to breaches of legislation and environmental standards	N/A	N/A	Low	• NSW guidelines • Included in CEMP risk assessment	N/A	N/A	Low
Cumulative impacts - construction	A lack of management systems in relation to cumulative impacts leads to excessive impacts on local community	C5	L3	Medium	• Included in CEMP risk assessment	C5	L4	Low

Risk Assessment for AEW – Footbridge St Marys								
Risk Area	**Risk Statements**	**C**	**L**	**Inherent Risk Rating**	**Controls**	**C**	**L**	**Residual Risk Rating**
Transport - construction	A lack of mitigation measures and management systems in relation to traffic management leads to frequent non-compliance with the Planning Approval.	C5	L1	High	• CTMF/CTMP	C5	L7	Low
Noise and vibration - construction	A lack of mitigation measures and management systems in relation to Noise and Vibration management leads to unreasonable impacts on residents and businesses, and structural damage to buildings or heritage items.	C4	L3	Medium	• Standard and project specific mitigation measures • Included in CEMP risk assessment	C5	L3	Medium
Biodiversity – construction	A lack of mitigation measures and management systems in relation to biodiversity management leads to unreasonable impacts to flora and fauna, spread of weeds and pathogens, and unintended vegetation clearance.	C5	L5	Low	• Standard and project specific mitigation measures • Replacement of street trees 2:1 / certified areas • Included in CEMP risk assessment	C5	L6	Low
Non-Aboriginal heritage - construction	A lack of mitigation measures and management systems in relation to Heritage management leads to poor integration of heritage values in design and impacts on heritage items outside of what has been approved.	C3	L3	High	• Unexpected Finds Procedure • Standard and project specific mitigation measures • Included in CEMP risk assessment	C5	L4	Low

Risk Assessment for AEW – Footbridge St Marys								
Risk Area	**Risk Statements**	**C**	**L**	**Inherent Risk Rating**	**Controls**	**C**	**L**	**Residual Risk Rating**
Aboriginal heritage – construction	A lack of mitigation measures and management systems in relation to Heritage management leads to poor integration of heritage values in design and impacts on heritage items outside of what has been approved.	C4	L6	Low	• Unexpected Finds Procedure • Approved / updated ACHMP	C5	L6	Low
Flooding, Hydrology and Water Quality – construction	A lack of mitigation measures and management systems in relation to soil and water management leads to unexpected pollution events, water quality impacts on adjacent water bodies, and soil erosion.	C4	L5	Low	• Standard and project specific mitigation measures • Included in CEMP risk assessment	C5	L5	Low
Groundwater and Geology - construction	A lack of mitigation measures and management systems in relation to groundwater management leads to groundwater drawdown, groundwater pollution and impacts of groundwater dependant ecosystems.	C4	L5	Low	• Standard and project specific mitigation measures • Included in CEMP risk assessment	C4	L5	Low
Soils and contamination - construction	A lack of mitigation measures and management systems in relation to soil and water management leads to unexpected pollution events, water quality impacts on adjacent water bodies, and soil erosion.	C5	L3	Medium	• Unexpected Contaminated Land and Asebestos Finds Procedure • Standard and project specific mitigation measures • Included in CEMP risk assessment	C5	L4	Low

Risk Assessment for AEW – Footbridge St Marys								
Risk Area	**Risk Statements**	**C**	**L**	**Inherent Risk Rating**	**Controls**	**C**	**L**	**Residual Risk Rating**
Sustainability, climate change and greenhouse gas - construction	A lack of mitigation measures and management systems in relation to waste management leads to excessive waste generation, and inappropriate waste classification and disposal.	C5	L4	Low	• Offset of 25% of greenhouse gas emissions • Included in CEMP risk assessment	C6	L4	Low
Resource management - construction	A lack of mitigation measures and management systems in relation to waste management leads to excessive waste generation, and inappropriate waste classification and disposal.	C5	L4	Low	• Waste Classification Procedure • Standard and project specific mitigation measures • Included in CEMP risk assessment	C6	L5	Low
Land use and property - construction	A lack of mitigation measures and management systems in relation to land use and property lead to land use and property impacts outside of project approval.	C5	L4	Low	• Standard and project specific mitigation measures • Included in CEMP risk assessment	C6	L5	Low
Landscape and Visual Impact - construction	A lack of mitigation measures and management systems in relation to visual amenity management leads to unreasonable visual impacts on the surrounding community, landscape features and poor landscape design outcomes.	C5	L3	Medium	• Standard and project specific mitigation measures • Included in CEMP risk assessment	C5	L5	Low
Social and economic - construction	Amenity impacts not appropriately mitigated or managed lead to unreasonable impacts on the community. A lack of mitigation measures and management systems in relation to community management results in community concern.	C5	L3	Medium	• Standard and project specific mitigation measures – amenity impacts • OCCS; SBMP • Included in CEMP risk assessment	C5	L4	Low

Risk Assessment for AEW – Footbridge St Marys								
Risk Area	**Risk Statements**	**C**	**L**	**Inherent Risk Rating**	**Controls**	**C**	**L**	**Residual Risk Rating**
Air Quality - construction	A lack of mitigation measures and management systems in relation to air quality management leads to unreasonable particulate pollutant emissions from construction activities.	C5	L3	Medium	• Standard and project specific mitigation measures • Included in CEMP risk assessment	C5	L4	Low
Hazard and risk - construction	A lack of management systems in relation to hazards and risks leads to breaches of legislation and environmental standards	N/A	N/A	Low	• NSW guidelines • Included in CEMP risk assessment	N/A	N/A	Low
Cumulative impacts - construction	A lack of management systems in relation to cumulative impacts leads to excessive impacts on local community	C5	L3	Medium	• Included in CEMP risk assessment	C5	L4	Low

Risk Assessment for AEW – St Marys Temporary Bus Interchange								
Risk Area	**Risk Statements**	**C**	**L**	**Inherent Risk Rating**	**Controls**	**C**	**L**	**Residual Risk Rating**
Transport - construction	A lack of mitigation measures and management systems in relation to traffic management leads to frequent non-compliance with the Planning Approval.	C4	L1	High	• CTMF/CTMP	C5	L4	Low
Noise and vibration - construction	A lack of mitigation measures and management systems in relation to Noise and Vibration management leads to unreasonable impacts on residents and businesses, and structural damage to buildings or heritage items.	C5	L3	Medium	• Standard and project specific mitigation measures • Included in CEMP risk assessment	C5	L3	Medium
Biodiversity – construction	A lack of mitigation measures and management systems in relation to biodiversity management leads to unreasonable impacts to flora and fauna, spread of weeds and pathogens, and unintended vegetation clearance.	C5	L6	Low	• Standard and project specific mitigation measures • Replacement of street trees 2:1 / certified areas • Included in CEMP risk assessment	C6	L6	Low
Non-Aboriginal heritage - construction	A lack of mitigation measures and management systems in relation to Heritage management leads to poor integration of heritage values in design and impacts on heritage items outside of what has been approved.	C5	L4	Low	• Unexpected Finds Procedure • Standard and project specific mitigation measures • Included in CEMP risk assessment	C5	L5	Low

Risk Assessment for AEW – St Marys Temporary Bus Interchange								
Risk Area	**Risk Statements**	**C**	**L**	**Inherent Risk Rating**	**Controls**	**C**	**L**	**Residual Risk Rating**
Aboriginal heritage – construction	A lack of mitigation measures and management systems in relation to Heritage management leads to poor integration of heritage values in design and impacts on heritage items outside of what has been approved.	C4	L6	Low	• Unexpected Finds Procedure • Approved / updated ACHMP	C5	L6	Low
Flooding, Hydrology and Water Quality – construction	A lack of mitigation measures and management systems in relation to soil and water management leads to unexpected pollution events, water quality impacts on adjacent water bodies, and soil erosion.	C5	L5	Low	• Standard and project specific mitigation measures • Included in CEMP risk assessment	C5	L4	Low
Groundwater and Geology - construction	A lack of mitigation measures and management systems in relation to groundwater management leads to groundwater drawdown, groundwater pollution and impacts of groundwater dependant ecosystems.	C5	L4	Low	• Standard and project specific mitigation measures • Included in CEMP risk assessment	C6	L5	Low
Soils and contamination - construction	A lack of mitigation measures and management systems in relation to soil and water management leads to unexpected pollution events, water quality impacts on adjacent water bodies, and soil erosion.	C4	L3	Med	• Unexpected Contaminated Land and Asbestos Finds Procedure • Standard and project specific mitigation measures • Included in CEMP risk assessment	C5	L4	Low

Risk Assessment for AEW – St Marys Temporary Bus Interchange								
Risk Area	**Risk Statements**	**C**	**L**	**Inherent Risk Rating**	**Controls**	**C**	**L**	**Residual Risk Rating**
Sustainability, climate change and greenhouse gas - construction	A lack of mitigation measures and management systems in relation to Sustainability, climate change and greenhouse gas leads to excessive greenhouse generation, and a lack of consideration of potential climate change risks.	C5	L3	Low	• Included in CEMP risk assessment	C6	L4	Low
Resource management - construction	A lack of mitigation measures and management systems in relation to waste management leads to excessive waste generation, and inappropriate waste classification and disposal.	C5	L4	Low	• Waste Classification Procedure • Standard and project specific mitigation measures • Included in CEMP risk assessment	C6	L5	Low
Land use and property - construction	A lack of mitigation measures and management systems in relation to land use and property lead to land use and property impacts outside of project approval.	N/A	N/A	N/A	• Standard and project specific mitigation measures • Included in CEMP risk assessment	N/A	N/A	Low
Landscape and Visual Impact - construction	A lack of mitigation measures and management systems in relation to visual amenity management leads to unreasonable visual impacts on the surrounding community, landscape features and poor landscape design outcomes.	C4	L3	Med	• Standard and project specific mitigation measures • Included in CEMP risk assessment	C5	L4	Low

Risk Assessment for AEW – St Marys Temporary Bus Interchange								
Risk Area	**Risk Statements**	**C**	**L**	**Inherent Risk Rating**	**Controls**	**C**	**L**	**Residual Risk Rating**
Social and economic - construction	Amenity impacts not appropriately mitigated or managed lead to unreasonable impacts on the community. A lack of mitigation measures and management systems in relation to community management results in community concern.	C4	L3	Med	• Standard and project specific mitigation measures – amenity impacts • OCCS; SBMP • Included in CEMP risk assessment	C5	L4	Low
Air Quality - construction	A lack of mitigation measures and management systems in relation to air quality management leads to unreasonable particulate pollutant emissions from construction activities.	C5	L3	Med	• Standard and project specific mitigation measures • Included in CEMP risk assessment	C5	L4	Low
Hazard and risk - construction	A lack of management systems in relation to hazards and risks leads to breaches of legislation and environmental standards	N/A	N/A	Low	• NSW guidelines • Included in CEMP risk assessment	N/A	N/A	Low
Cumulative impacts - construction	A lack of management systems in relation to cumulative impacts leads to excessive impacts on local community	C5	L4	Low	• Included in CEMP risk assessment	C6	L5	Low

Risk Assessment for AEW – Water								
Risk Area	**Risk Statements**	**C**	**L**	**Inherent Risk Rating**	**Controls**	**C**	**L**	**Residual Risk Rating**
Transport - construction	A lack of mitigation measures and management systems in relation to traffic management leads to frequent non-compliance with the Planning Approval.	C5	L3	Medium	• CTMF/CTMP	C6	L4	Low
Noise and vibration - construction	A lack of mitigation measures and management systems in relation to Noise and Vibration management leads to unreasonable impacts on residents and businesses, and structural damage to buildings or heritage items.	C5	L2	Medium	• Standard and project specific mitigation measures • Included in CEMP risk assessment	C5	L4	Low
Biodiversity – construction	A lack of mitigation measures and management systems in relation to biodiversity management leads to unreasonable impacts to flora and fauna, spread of weeds and pathogens, and unintended vegetation clearance.	C5	L5	Low	• Standard and project specific mitigation measures • Replacement of street trees 2:1 / certified areas • Included in CEMP risk assessment	C6	L5	Low
Non-Aboriginal heritage - construction	A lack of mitigation measures and management systems in relation to Heritage management leads to poor integration of heritage values in design and impacts on heritage items outside of what has been approved.	C5	L5	Low	• Unexpected Finds Procedure • Standard and project specific mitigation measures • Included in CEMP risk assessment	C5	L6	Low

Risk Assessment for AEW – Water								
Risk Area	**Risk Statements**	**C**	**L**	**Inherent Risk Rating**	**Controls**	**C**	**L**	**Residual Risk Rating**
Aboriginal heritage – construction	A lack of mitigation measures and management systems in relation to Heritage management leads to poor integration of heritage values in design and impacts on heritage items outside of what has been approved.	C5	L5	Low	• Unexpected Finds Procedure • Approved / updated ACHMP	C6	L5	Low
Flooding, Hydrology and Water Quality – construction	A lack of mitigation measures and management systems in relation to soil and water management leads to unexpected pollution events, water quality impacts on adjacent water bodies, and soil erosion.	C4	L4	Medium	• Standard and project specific mitigation measures • Included in CEMP risk assessment	C5	L5	Low
Groundwater and Geology - construction	A lack of mitigation measures and management systems in relation to groundwater management leads to groundwater drawdown, groundwater pollution and impacts of groundwater dependant ecosystems.	C5	L3	Medium	• Standard and project specific mitigation measures • Included in CEMP risk assessment	C5	L5	Low
Soils and contamination - construction	A lack of mitigation measures and management systems in relation to soil and water management leads to unexpected pollution events, water quality impacts on adjacent water bodies, and soil erosion.	C4	L3	Medium	• Unexpected Contaminated Land and Asbestos Finds Procedure • Standard and project specific mitigation measures • Included in CEMP risk assessment	C5	L4	Low

Risk Assessment for AEW – Water								
Risk Area	**Risk Statements**	**C**	**L**	**Inherent Risk Rating**	**Controls**	**C**	**L**	**Residual Risk Rating**
Sustainability, climate change and greenhouse gas - construction	A lack of mitigation measures and management systems in relation to Sustainability, climate change and greenhouse gas leads to excessive greenhouse generation, and a lack of consideration of potential climate change risks.	C5	L4	Low	• Included in CEMP risk assessment	C6	L4	Low
Resource management - construction	A lack of mitigation measures and management systems in relation to waste management leads to excessive waste generation, and inappropriate waste classification and disposal.	C5	L4	Low	• Waste Classification Procedure • Standard and project specific mitigation measures • Included in CEMP risk assessment	C6	L5	Low
Land use and property - construction	A lack of mitigation measures and management systems in relation to land use and property lead to land use and property impacts outside of project approval.	C5	L5	Low	• Standard and project specific mitigation measures • Included in CEMP risk assessment	C6	L5	Low
Landscape and Visual Impact - construction	A lack of mitigation measures and management systems in relation to visual amenity management leads to unreasonable visual impacts on the surrounding community, landscape features and poor landscape design outcomes.	C5	L3	Medium	• Standard and project specific mitigation measures • Included in CEMP risk assessment	C6	L4	Low

Risk Assessment for AEW – Water								
Risk Area	**Risk Statements**	**C**	**L**	**Inherent Risk Rating**	**Controls**	**C**	**L**	**Residual Risk Rating**
Social and economic - construction	Amenity impacts not appropriately mitigated or managed lead to unreasonable impacts on the community. A lack of mitigation measures and management systems in relation to community management results in community concern.	C5	L3	Medium	• Standard and project specific mitigation measures – amenity impacts • OCCS; SBMP • Included in CEMP risk assessment	C6	L5	Low
Air Quality - construction	A lack of mitigation measures and management systems in relation to air quality management leads to unreasonable particulate pollutant emissions from construction activities.	C5	L3	Medium	• Standard and project specific mitigation measures • Included in CEMP risk assessment	C6	L5	Low
Hazard and risk - construction	A lack of management systems in relation to hazards and risks leads to breaches of legislation and environmental standards	C5	L4	Low	• NSW guidelines • Included in CEMP risk assessment	C5	L5	Low
Cumulative impacts - construction	A lack of management systems in relation to cumulative impacts leads to excessive impacts on local community	C5	L4	Low	• Included in CEMP risk assessment	C5	L5	Low

Appendix G – SBT risk context and risk assessment

Risk Context for SBT – Preparatory Works

Potential risks	Risk Context
Transport - construction	SBT Preparatory Works have some potential to cause temporary traffic, transport and parking impacts on the surrounding community without controls due to the requirements for road network modifications, road or lane closures, some use of heavy vehicles, alterations to access, staff parking requirements and removal of parking. Traffic will be managed in accordance with a construction traffic management plan (CTMP) that is consistent with the Sydney Metro construction traffic management framework (CTMF) and traffic mitigation measures as outlined in the SMWSA Submissions Report. Additionally alternative bus facilities and extension of the multistorey car park will be provided at St Marys by the AEW Contractor.
Noise and vibration - construction	SBT Preparatory Works have some potential to cause noise and vibration impacts on the surrounding community without controls due to the requirement to undertake utility works outside of standard working hours and the proximity of plant and equipment to residential areas. These works are progressive in nature and as such, a particular receiver's exposure to noise and vibration will be temporary and managed through use of respite periods. Noise will be managed in accordance with the Construction Noise and Vibration Strategy (CNVS) and noise and vibration mitigation measures as outlined in the SMWSA Submissions Report. Detailed noise and vibration impact statement (DNVIS) will be prepared for site establishment and local area and utility works and confirm reasonable and feasible noise and vibration mitigation measures. Noise and vibration monitoring will also be undertaken as required.
Biodiversity – construction	SBT Preparatory Works have a medium to high potential to cause biodiversity impacts in the surrounding area without controls as the project would need to complete clearing works within the SBT worksite footprints to facilitate construction. Works will impact limited native vegetation, threatened ecological communities and threatened species or their habitat. The project has been designed to avoid biodiversity impacts where possible, including by having works in tunnels under riparian areas such as Badgerys Creek. There will be some impact to protected vegetation and as such, flora and fauna will be managed in accordance with vegetation clearing, fauna handling and weed management procedures and flora and fauna measures as outlined in the SMWSA Submissions Report to ensure impacts are minimised as much as possible. Planning approval requirements to retire biodiversity credits associated with the SBT Preparatory Works will be met by Sydney Metro prior to impacts to biodiversity values occurring.
Non-Aboriginal heritage - construction	SBT Preparatory Works have potential to cause impacts to non-Aboriginal heritage without controls due to the proximity to heritage listed items around St Marys Station and the need for archaeological investigation and if triggered salvage works in the bulk excavation area. Site establishment will also cause indirect temporary visual impacts to the heritage setting of St Marys Station Group. Non-Aboriginal heritage will be managed through the non-Aboriginal Archaeological Research Design, non-Aboriginal Archaeological Method Statement for St Marys and through non-Aboriginal heritage mitigation measures. Vibration monitoring will also be undertaken as required.
Aboriginal heritage – construction	The ACHMP, as updated in accordance with CoA, will be implemented for all works associated with the project by Sydney Metro. The ACHMP provides certainty over the known areas of archaeological sensitivity and the procedures that will be implemented.
Flooding, Hydrology and Water Quality – construction	SBT Preparatory Works have potential to cause water quality impacts without controls. Temporary water quality impacts may be caused due to spills from plant and equipment, erosion ground disturbance, stockpiling activities, and discharge of contaminated water without controls. If improperly managed there is the potential for these impacts to migrate offsite.

Potential risks	Risk Context
Groundwater and Geology - construction	The SBT Preparatory Works will not impact on groundwater or have the potential to result in ground settlement.
Soils and contamination - construction	SBT Preparatory Works, including ground disturbance from vegetation removal, stockpiling, and site leveling works would result in the temporary exposure of soil to water runoff and wind, which could increase soil erosion potential if adequate controls are not in place. Exposed soils may migrate offsite and cause other impacts such as sedimentation and pollution of waterways. Erosion controls would be implemented and managed in accordance with Managing Urban Stormwater: Soils and Construction Volume 1. There are potential medium and high risk areas of contamination throughout the SBT Worksite footprints. Ground disturbing works may expose existing contamination or contaminated groundwater which has associated impacts to human and ecological receptors. SBT Preparatory works could result in potential soil and surface water contamination without controls.
Sustainability, climate change and greenhouse gas - construction	The SBT Preparatory Works are likely to cause sustainability and greenhouse gas impacts without controls through emissions from plant and equipment, energy usage, and embodied energy in construction materials. 25 per cent of the greenhouse gas emissions associated with consumption of electricity during construction of the SBT Preparatory Works will be offset to reduce these impacts. Due to the short term duration of the Preparatory Works, potential climate change impacts (e.g. extreme/more frequent weather events, extreme heat) are unlikely.
Resource management - construction	Resource management impacts are considered likely without proper management. Waste generated as part of SBT Preparatory Works will undergo waste classification prior to transportation and disposal. Other materials will be classified into waste streams, recycled or transported off-site for disposal.
Land use and property - construction	Construction of the project would require permanent property acquisition and temporary leasing of private land, public land and land held in government ownership for construction sites for tunnel and station excavation, service facilities and permanent works. During construction, the project would also result in temporary direct impacts on land use from use of construction compounds and ancillary facilities within the construction footprint for the project. Once established as a construction zone, land uses which previously occurred on the SBT worksites would cease. The SBT Preparatory Works are very unlikely to cause severance of private property due to the limited surface footprint of the worksites which is often smaller than the site area assessed in the EIS. The design has sought to minimise property acquisition as much as possible. Sydney Metro will manage property acquisition in accordance with the *Land Acquisition (Just Terms Compensation) Act* 1991 and has appointed Personal Managers to support residents throughout the acquisition process, reducing the consequence and likelihood of impacts.
Landscape and Visual Impact - construction	SBT Preparatory Works have a moderate potential to cause landscape and visual amenity impacts without controls. Temporary visual impacts would occur with respect to construction sites, the visibility of plant and equipment in residential areas and removal of vegetation. Some areas of the SBT Preparatory Works would be relatively contained due to the surrounding built form (i.e. St Marys), some areas would have few visual receivers (i.e. Aerotropolis Core), and some areas would be large and impact a number of surrounding receivers (i.e. Orchard Hills). A visual amenity procedure for temporary works will be developed in accordance with the CEMF.

Potential risks	Risk Context
Social and economic - construction	The SBT Preparatory Works will impact amenity of the construction areas, will cause socio economic impacts through property acquisition, impact to agricultural assets, disruptions to and reduced visibility of businesses, and associated traffic network impacts. Potential temporary social and economic impacts associated with the project during construction would generally be managed through appropriate mitigation of other aspects such as noise, traffic, visual and air quality and through implementation of the OCCS. A Small Business Owners Engagement Plan will also be created to minimise impacts to businesses around St Marys.
Air Quality - construction	The SBT Preparatory Works will require some ground disturbing works, stockpiling activities, and the use of plant and light vehicles which could mobilise dust and create emissions around work areas. Due to the proximity of these works to residential receivers it is likely air quality impacts would occur without controls. An air quality management procedure for the SBT Preparatory Works will be developed in accordance with the CEMF.
Hazard and risk - construction	Hazardous substances and dangerous goods are required to be transported and stored on-site during construction. Potential risks would be managed in accordance with NSW guidelines including the Storage and Handling of Dangerous Goods Code of Practice (WorkCover NSW, 2005). Some works areas are located within bushfire prone land. Bushfire risk will be minimised through standard site management practices, construction planning, and a bushfire management plan would minimise bushfire risks during construction. A bushfire management plan will be prepared and implemented to manage current bushfire risk and identify response actions during the SBT Preparatory Works. The Plan will be prepared in consultation with the NSW Rural Fire Service and included in the Emergency Response Plan.
Cumulative impacts - construction	The SBT Preparatory Works will interact with external projects such as Western Sydney Airport and St Marys intermodal. Cumulative impacts will be minimised through coordination of construction activities and communication processes with nearby projects. Cumulative impacts will be managed in accordance with the Cumulative Construction Impacts Management Plan required under the REMMs.

Risk Assessment for SBT Preparatory Works								
Risk Area	**Risk Statements**	**C**	**L**	**Inherent Risk Rating**	**Controls**	**C**	**L**	**Residual Risk Rating**
Transport - construction	A lack of mitigation measures and management systems in relation to traffic management leads to frequent non-compliance with the Planning Approval.	C4	L2	High	• CTMF/CTMP • TBI built prior to bus interchange closure	C4	L4	Medium
Noise and vibration - construction	A lack of mitigation measures and management systems in relation to Noise and Vibration management leads to unreasonable impacts on residents and businesses, and structural damage to buildings or heritage items.	C4	L3	Medium	• CNVS and OCCS • DNVIS • Standard, project and SBT Preparatory Works specific mitigation measures	C4	L3	Medium
Biodiversity – construction	A lack of mitigation measures and management systems in relation to biodiversity management leads to unreasonable impacts to flora and fauna, spread of weeds and pathogens, and unintended vegetation clearance.	C2	L2	Very High	• Standard, project and SBT Preparatory Works specific mitigation measures • Statutory offsets retired by Sydney Metro in advance of impacts on biodiversity values • Vegetation Clearing, Fauna Handling and Weed Management Procedures	C4	L4	Medium
Non-Aboriginal heritage - construction	A lack of mitigation measures and management systems in relation to Heritage management leads to poor integration of heritage values in design and impacts on heritage items outside of what has been approved.	C4	L4	Medium	• Unexpected Finds Procedure • Standard, project and SBT Preparatory Works specific mitigation measures • Archaeological Research Design • St Marys Archaeological Method Statement • Excavation Director	C5	L4	Low

Risk Assessment for SBT Preparatory Works								
Risk Area	**Risk Statements**	**C**	**L**	**Inherent Risk Rating**	**Controls**	**C**	**L**	**Residual Risk Rating**
Aboriginal heritage – construction	A lack of mitigation measures and management systems in relation to Heritage management leads to poor integration of heritage values in design and impacts on heritage items outside of what has been approved.	C5	L4	Low	• Unexpected Finds Procedure • Salvage prior to construction to be completed by Sydney Metro • Approved / updated ACHMP	C5	L4	Low
Flooding, Hydrology and Water Quality – construction	A lack of mitigation measures and management systems in relation to soil and water management leads to pollution events, water quality impacts on adjacent water bodies, and soil erosion.	C3	L2	High	• Standard, project and SBT Preparatory Works specific mitigation measures • Locating stockpiles and storage areas outside of flood prone areas • Erosion and sediment control and water discharge procedures	C4	L3	Medium
Groundwater and Geology - construction	A lack of mitigation measures and management systems in relation to groundwater management leads to groundwater drawdown, groundwater pollution and impacts of groundwater dependant ecosystems.	C6	L3	Low	• Standard, project specific mitigation measures	C6	L4	Low

Risk Assessment for SBT Preparatory Works								
Risk Area	**Risk Statements**	**C**	**L**	**Inherent Risk Rating**	**Controls**	**C**	**L**	**Residual Risk Rating**
Soils and contamination - construction	A lack of mitigation measures and management systems in relation to soil and water management leads to pollution events, water quality impacts on adjacent water bodies, and soil erosion.	C3	L2	High	• Unexpected Contaminated Land and Asbestos Finds Procedure • Detailed site investigations and if triggered remediation action plans and EPA accredited site auditing • Standard, project and Preparatory Works specific mitigation measures, including discharge hold point • Contamination procedure	C4	L3	Medium
Sustainability, climate change and greenhouse gas - construction	A lack of mitigation measures and management systems in relation to Sustainability, climate change and greenhouse gas leads to excessive greenhouse generation.	C4	L3	Medium	• Offset of 25% of greenhouse gas emissions • SMP sub-plans	C5	L4	Low
Resource management - construction	A lack of mitigation measures and management systems in relation to waste management leads to excessive waste generation, and inappropriate waste classification and disposal.	C3	L2	High	• Waste Classification Procedure • Standard, project and SBT Preparatory Works specific mitigation measures	C4	L3	Medium
Land use and property - construction	A lack of mitigation measures and management systems in relation to land use and property lead to land use and property impacts outside of project approval.	C4	L2	High	• Standard and project specific mitigation measures • NSW legislation	C4	L3	Medium
Landscape and Visual Impact - construction	A lack of mitigation measures and management systems in relation to visual amenity management leads to unreasonable temporary visual impacts on the surrounding community, landscape features and poor landscape design outcomes.	C4	L1	High	• Standard, project and SBT Preparatory Works specific mitigation measures • Visual amenity procedure	C5	L2	Medium

Risk Assessment for SBT Preparatory Works								
Risk Area	**Risk Statements**	**C**	**L**	**Inherent Risk Rating**	**Controls**	**C**	**L**	**Residual Risk Rating**
Social and economic - construction	Amenity impacts not appropriately mitigated or managed lead to unreasonable impacts on the community. A lack of mitigation measures and management systems in relation to community management results in community concern.	C3	L3	High	• Standard, project and SBT Preparatory Works specific mitigation measures – amenity impacts • OCCS; SBEP	C5	L3	Medium
Air Quality - construction	A lack of mitigation measures and management systems in relation to air quality management leads to unreasonable particulate pollutant emissions from construction activities.	C4	L1	High	• Standard, project and SBT Preparatory Works specific mitigation measures • Air quality procedure	C5	L2	Medium
Hazard and risk - construction	A lack of management systems in relation to hazards and risks leads to breaches of legislation and environmental standards	C4	L3	Medium	• NSW guidelines • Bushfire Management Plan in consultation with NSW RFS and WSA (included in Emergency Response Plan) • Included in Preparatory CEMP risk assessment	C5	L4	Low
Cumulative impacts - construction	A lack of management systems in relation to cumulative impacts leads to excessive impacts on local community	C3	L2	High	• Included in CCIMP • Coordination of construction activities and communication processes with nearby projects	C4	L3	Medium

Risk Context for SBT – Bulk Excavation and Tunnelling Works	
Potential risks	**Risk Context**
Transport - construction	SBT Bulk Excavation and Tunnelling Work have a high potential to cause temporary traffic, transport and parking impacts on the surrounding community without controls due to the requirements for 24/7 haulage of tunnel spoil, road network modifications, road or lane closures, use of heavy vehicles, alterations to access, staff parking requirements and removal of parking. Traffic will be managed in accordance with a construction traffic management plan (CTMP) that is consistent with the Sydney Metro construction traffic management framework (CTMF) and traffic mitigation measures as outlined in the SMWSA Submissions Report. Additionally alternative bus facilities and extension of the multistorey car park will be provided at St Marys within the AEW stage of construction.
Noise and vibration - construction	SBT Bulk Excavation and Tunnelling Work have a high potential to cause noise and vibration impacts on the surrounding community without controls due to the need for tunnelling and excavation activities to occur in the evening and at night, and the proximity of plant and equipment to residential areas. Tunnelling works are progressive so a particular receiver's exposure to ground-borne noise and vibration will be temporary and reduce accordingly as the tunnel boring machine (TBM) and roadheaders move away. Noise will be managed in accordance with the Construction Noise and Vibration Strategy (CNVS), Construction Noise and Vibration Management Plan (CNVMP) and noise and vibration mitigation measures as outlined in the SMWSA Submissions Report. A detailed noise and vibration impact statement (DNVIS) will be prepared for vibration-intensive construction sites and /or activities to ensure the adequacy of the noise and vibration mitigation measures. Noise and vibration monitoring will also be undertaken as required.
Biodiversity – construction	SBT Bulk Excavation and Tunnelling Work have a medium to high potential to cause biodiversity impacts in the surrounding area without controls as the project would need to complete clearing works within the SBT worksite footprints to facilitate construction. Works will impact native vegetation, threatened ecological communities and threatened species or their habitat. There is also the potential for indirect impacts on groundwater dependent ecosystems include changes to groundwater level and flow resulting from groundwater drawdown during excavation and tunnelling work. The project has been designed to avoid biodiversity impacts where possible, including by having works in tunnel under riparian areas such as Badgerys Creek. While the potential impacts are not in the highest category, there will still be some impact to protected vegetation so biodiversity will be managed in accordance with a Flora and Fauna Management Plan and biodiversity mitigation measures as outlined in the SMWSA Submissions Report to ensure impacts are minimised as much as possible. Planning approval requirements to retire biodiversity credits associated with SBT will be met prior to impacts to biodiversity values occurring.
Non-Aboriginal heritage - construction	SBT Bulk Excavation and Tunnelling Work have a medium to high potential to cause impacts to non-Aboriginal heritage without controls primarily due to the proximity to heritage listed items around St Marys Station and its largely temporary visual impacts to the heritage setting of the St Marys Station Group, however also to a lesser extent vibration intensive works and potential settlement impacts from station box excavation and tunnelling works per the proposed tunnelling techniques to be used. Based on recent assessment, the tunnelling techniques proposed by the SBT contractor are likely to result in a negligible to low risk of risk of impact... Non-Aboriginal heritage will be managed through a non-Aboriginal Heritage Procedure and through non-Aboriginal heritage mitigation measures. Vibration and settlement monitoring will also be undertaken as required.
Aboriginal heritage – construction	The ACHMP, as updated in accordance with CoA, will be implemented for all works associated with the project. The ACHMP provides certainty over the known areas of archaeological sensitivity and the procedures that will be implemented; as well as ongoing requirements during construction .

Risk Context for SBT – Bulk Excavation and Tunnelling Works	
Potential risks	**Risk Context**
Flooding, Hydrology and Water Quality – construction	SBT Bulk Excavation and Tunnelling Work have a potential to cause flooding, hydrology and water quality impacts without controls. Some SBT worksites will be within areas affected by the probable maximum flood (PMF) and this will be considered in finalising the design of shaft and station box excavations. Temporary water quality impacts may be caused due to spills from plant and equipment, erosion from excavations, and ground disturbance, stockpiling activities, and discharge of contaminated water without controls. If improperly managed there is the potential for these impacts to migrate offsite.
Groundwater and Geology - construction	Excavation and tunnelling works have the potential to impact groundwater. The tunnel construction methodology would limit groundwater inflows given that tunnel lining is installed soon after tunnel excavation. Potential groundwater risks would be temporary and would be mitigated once the construction of drained and undrained infrastructure is complete. Changes to groundwater recharge may also occur during construction due to an increase in impervious surfaces and capture of runoff.
Soils and contamination - construction	Construction activities including excavation, ground disturbance from vegetation removal, stockpiling, and tunnelling works would result in the temporary exposure of soil to water runoff and wind, which could increase soil erosion potential if adequate controls are not in place. Exposed soils may migrate offsite and cause other impacts such as sedimentation and pollution of waterways. Erosion controls would be implemented and managed in accordance with Managing Urban Stormwater: Soils and Construction Volume 1. There are potential medium and high risk areas of contamination throughout the SBT worksite footprints. Excavation and ground disturbing works may expose existing contamination or contaminated groundwater which has associated impacts to human and ecological receptors. SBT works could result in potential soil, surface water or groundwater contamination without controls.
Sustainability, climate change and greenhouse gas - construction	SBT Bulk Excavation and Tunnelling Works are likely to cause sustainability, climate change and greenhouse gas impacts without controls through emissions from plant and equipment, energy usage, and embodied energy in construction materials. 25 per cent of the greenhouse gas emissions associated with consumption of electricity during construction of the SBT Bulk Excavation and Tunnelling Works will be offset to reduce these impacts as well as providing a net increase in the number of replacement trees at ratio of 2:1 (excluding statutory offset requirements). Due to the duration of construction potential climate change impacts (e.g. extreme/more frequent weather events, extreme heat) may occur. Extreme weather events would be considered in emergency management procedures for the construction of the SBT Bulk Excavation and Tunnelling Works and sensitive construction equipment would be protected from the effects of extreme weather and climate.
Resource management - construction	Resource management impacts are considered likely without proper management. Waste generated as part of SBT would undergo waste classification prior to transportation and disposal. Other materials would be classified into waste streams, recycled or transported off-site for disposal.
Land use and property - construction	Construction of the project would require permanent property acquisition and temporary leasing of private land, public land and land held in government ownership for construction sites for tunnel and station excavation, service facilities and permanent works. During construction, the project would also result in temporary direct impacts on land use from use of construction compounds and ancillary facilities within the construction footprint for the project. Once established as a construction zone, current land uses would cease. The SBT Bulk Excavation and Tunnelling Works are very unlikely to cause severance of private property as the majority of works are in tunnel. The design has sought to minimise property acquisition as much as possible. Sydney Metro will manage property acquisition in accordance with the *Land Acquisition (Just Terms Compensation) Act* 1991, and has appointed Personal Managers to support residents throughout the acquisition process, reducing the consequence and likelihood of impacts.

Risk Context for SBT – Bulk Excavation and Tunnelling Works	
Potential risks	**Risk Context**
Landscape and Visual Impact - construction	SBT Bulk Excavation and Tunnelling Work have potential to cause landscape and visual amenity impacts without controls. Temporary visual impacts would occur with respect to construction sites, the visibility of plant and equipment in residential areas, light spill from 24/7 tunnelling works and removal of vegetation. Some areas for SBT would be relatively contained due to the built form around it such as St Marys, some areas would have few visual receivers such as Aerotropolis Core, and some areas would be large and impact many such as Orchard Hills. A Visual Amenity Management Plan for temporary works would be developed in accordance with the CEMF.
Social and economic - construction	SBT Bulk Excavation and Tunnelling Work will impact amenity of the construction areas, will cause socio economic impacts through property acquisition, impact to agricultural assets, disruptions to and reduced visibility of businesses, and associated traffic network impacts. Potential temporary social and economic impacts associated with the project during construction would generally be managed through appropriate mitigation of other aspects such as noise, traffic, visual and air quality and through implementation of the OCCS. A Small Business Owners Engagement Plan will also be created to minimise impacts to businesses around St Marys.
Air Quality - construction	SBT Bulk Excavation and Tunnelling Works will require deep excavations, ground disturbing works, stockpiling activities, and the use of plant and light vehicles which could mobilise dust and create emissions around work areas. Due to the proximity of these works to residential receivers it is likely air quality impacts would occur without controls.
Hazard and risk - construction	Hazardous substances and dangerous goods are required to be transported and stored on-site during construction. Potential risks would be managed in accordance with NSW guidelines including the Storage and Handling of Dangerous Goods Code of Practice (WorkCover NSW, 2005). Some works areas are located within bushfire prone land. Bushfire risk will be minimised through standard site management practices, construction planning, and a bushfire management plan would minimise bushfire risks during construction. A bushfire management plan would be prepared and implemented to manage current bushfire risk and identify response actions during construction of the SBT Works. The Plan would be prepared in consultation with the NSW Rural Fire Service.
Cumulative impacts - construction	The SBT works will interact with external projects such as Western Sydney Airport and St Marys intermodal. Cumulative impacts would be minimised through coordination of construction activities and communication processes with nearby projects. Cumulative impacts will be managed in accordance with the Cumulative Construction Impacts Management Plan required under the REMMs.

Risk Assessment for SBT Bulk Excavation and Tunnelling Works								
Risk Area	**Risk Statements**	**C**	**L**	**Inherent Risk Rating**	**Controls**	**C**	**L**	**Residual Risk Rating**
General Environmental Management	A lack of management systems in relation to general environmental management leads to non-compliance with the Planning Approval.	C3	L2	High	• Final CEMP (update of Preparatory CEMP) • Sub-plans and Monitoring Programs • Environmental Inspections • Environmental monitoring • Reporting, auditing and review	C5	L4	Low
Transport - construction	A lack of mitigation measures and management systems in relation to traffic management leads to non-compliance with the Planning Approval.	C3	L2	High	• CTMF/CTMP • Construction worker parking strategy • Haulage strategy developed using constructability analysis • Detailed site planning focused on separation of heavy and light vehicles	C4	L4	Medium
Noise and vibration - construction	A lack of mitigation measures and management systems in relation to Noise and Vibration management leads to unreasonable impacts on residents and businesses, and structural damage to buildings and/or heritage items.	C3	L1	Very High	• CNVS and OCCS • CNVMP and CNCMP • DNVIS prepared using additional modelling used to confirm the suite of SBT Bulk Excavation and Tunnelling Works specific mitigation measures including noise barriers, acoustic sheds and at property treatment where required and monitoring • Noise and vibration monitoring to confirm compliance and if any addition mitigation required	C4	L2	High
Biodiversity – construction	A lack of mitigation measures and management systems in relation to biodiversity management leads to unreasonable impacts to flora and fauna, spread of weeds and pathogens, and unintended vegetation clearance.	C4	L1	High	• Standard, project and SBT Bulk Excavation and Tunnelling Works specific mitigation measures • Statutory offsets retired in advance of impacts on biodiversity values • Included in FFMP risk assessment	C4	L3	Medium

Risk Assessment for SBT Bulk Excavation and Tunnelling Works								
Risk Area	**Risk Statements**	**C**	**L**	**Inherent Risk Rating**	**Controls**	**C**	**L**	**Residual Risk Rating**
Non-Aboriginal heritage - construction	A lack of mitigation measures and management systems in relation to Heritage management leads to impacts on heritage items outside of what has been approved.	C3	L2	High	• 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.	C4	L3	Medium
Aboriginal heritage – construction	A lack of mitigation measures and management systems in relation to Heritage management leads to poor integration of heritage values in design and impacts on heritage items outside of what has been approved.	C5	L4	Low	• Updated ACHMP • Unexpected Finds Procedure	C5	L4	Low

Risk Assessment for SBT Bulk Excavation and Tunnelling Works								
Risk Area	**Risk Statements**	**C**	**L**	**Inherent Risk Rating**	**Controls**	**C**	**L**	**Residual Risk Rating**
Flooding, Hydrology and Water Quality – construction	A lack of mitigation measures and management systems in relation to soil and water management leads to pollution events, water quality impacts on adjacent water bodies, and soil erosion.	C3	L2	High	• Standard, project and SBT Bulk Excavation and Tunnelling Works specific mitigation measures • Locating stockpiles and storage areas outside of flood prone areas • Water reuse strategy • WTPs / treatment confirmed in Discharge Impact Assessment • Included in SWMP risk assessment	C4	L3	Medium
Groundwater and Geology - construction	A lack of mitigation measures and management systems in relation to groundwater management leads to groundwater drawdown, groundwater pollution and impacts of groundwater dependant ecosystems.	C3	L1	Very High	• Standard, project and SBT Bulk Excavation and Tunnelling Works specific mitigation measures • Drained and undrained infrastructure including inflow specification • Tunnel construction methodology • Water reuse strategy • Included in GMCMP risk assessment	C3	L3	High
Soils and contamination - construction	A lack of mitigation measures and management systems in relation to soil and water management leads to pollution events, water quality impacts on adjacent water bodies, and soil erosion.	C3	L2	High	• Unexpected Contaminated Land and Asbestos Finds Procedure • Detailed site investigations and if triggered remediation action plans and EPA accredited site auditing • Standard, project and Bulk Excavation and Tunnelling Works specific mitigation measures, including discharge hold point • Included in SWCMP risk assessment	C4	L3	Medium
Sustainability, climate change and greenhouse gas - construction	A lack of mitigation measures and management systems in relation to Sustainability, climate change and greenhouse gas leads to excessive greenhouse generation, and a lack of consideration of potential climate change risks.	C3	L2	High	• Offset of 25% of greenhouse gas emissions • SMP sub-plans	C5	L3	Medium

Risk Assessment for SBT Bulk Excavation and Tunnelling Works								
Risk Area	**Risk Statements**	**C**	**L**	**Inherent Risk Rating**	**Controls**	**C**	**L**	**Residual Risk Rating**
Resource management - construction	A lack of mitigation measures and management systems in relation to waste management leads to excessive waste generation, and inappropriate waste classification and disposal.	C3	L2	High	• Waste Classification Procedure • Standard and project specific mitigation measures • Included in WMP risk assessment	C4	L3	Medium
Land use and property - construction	A lack of mitigation measures and management systems in relation to land use and property lead to land use and property impacts outside of project approval.	C4	L2	High	• Standard, project and SBT Bulk Excavation and Tunnelling specific mitigation measures • NSW legislation • Included in SBT Bulk Excavation and Tunnelling (Final) CEMP risk assessment	C4	L3	Medium
Landscape and Visual Impact - construction	A lack of mitigation measures and management systems in relation to visual amenity management leads to unreasonable temporary visual impacts on the surrounding community, landscape features and poor landscape design outcomes.	C4	L1	High	• Standard, project and SBT Bulk Excavation and Tunnelling specific mitigation measures • Included in SBT Bulk Excavation and Tunnelling (Final) CEMP risk assessment	C5	L2	Medium
Social and economic - construction	Amenity impacts not appropriately mitigated or managed lead to unreasonable impacts on the community. A lack of mitigation measures and management systems in relation to community management results in community concern.	C3	L3	High	• Standard and project specific mitigation measures – amenity impacts • OCCS; SBMP • Included in SBT Bulk Excavation and Tunnelling (Final) CEMP risk assessment	C5	L3	Medium
Air Quality - construction	A lack of mitigation measures and management systems in relation to air quality management leads to unreasonable particulate pollutant emissions from construction activities.	C4	L1	High	• Standard, project and SBT Bulk Excavation and Tunnelling specific mitigation measures • Included in AQMP risk assessment • Air quality monitoring and implementation of additional mitigation if required	C5	L2	Medium

Risk Assessment for SBT Bulk Excavation and Tunnelling Works								
Risk Area	**Risk Statements**	**C**	**L**	**Inherent Risk Rating**	**Controls**	**C**	**L**	**Residual Risk Rating**
Hazard and risk - construction	A lack of management systems in relation to hazards and risks leads to breaches of legislation and environmental standards	C4	L1	High	• NSW guidelines • Bushfire Management Plan in consultation with NSW RFS and WSA (included in Emergency Response Plan) • Included in SBT Bulk Excavation and Tunnelling CEMP risk assessment	C5	L3	Medium
Cumulative impacts - construction	A lack of management systems in relation to cumulative impacts leads to excessive impacts on local community	C3	L2	High	• Included in CCIMP • Coordination of construction activities and communication processes with nearby projects.	C4	L3	Medium

Appendix H – SCAW risk context and risk assessment

Risk Context for SCAW – Preparatory Works

Potential risks	Risk Context
Transport - construction	SCAW Preparatory Works have some potential to cause temporary traffic, transport and parking impacts on the surrounding community without controls due to the requirements for road network modifications, road or lane closures, some use of heavy vehicles, alterations to access and staff parking requirements. Traffic will be managed in accordance with a construction traffic management plan (CTMP) that is consistent with the Sydney Metro construction traffic management framework (CTMF) and traffic mitigation measures as outlined in the SMWSA Submissions Report.
Noise and vibration - construction	SCAW Preparatory Works medium to high potential to cause noise and vibration impacts on the surrounding community without controls due to the need for: excavation and stockpiling activities at the stabling and maintenance facility and the proximity of plant and equipment to residential areas within the vicinity of Orchard Hills. Noise will be managed in accordance with the Construction Noise and Vibration Strategy (CNVS) and noise and vibration mitigation measures as outlined in the SMWSA Submissions Report. Detailed noise and vibration impact statement (DNVIS) will be prepared for site establishment and local area and utility works and confirm reasonable and feasible noise and vibration mitigation measures. Noise and vibration monitoring will also be undertaken as required.
Biodiversity – construction	SCAW Preparatory Works have a high potential to cause biodiversity impacts in the surrounding area without controls as the project would need to complete minor clearing works within the SCAW worksite footprints to facilitate construction. Works will impact limited native vegetation, threatened ecological communities and threatened species or their habitat. The project has been designed to avoid biodiversity impacts where possible. There will be some impact to protected vegetation and as such, flora and fauna will be managed in accordance with vegetation clearing, fauna handling and weed management procedures and flora and fauna measures as outlined in the SMWSA Submissions Report to ensure impacts are minimised as much as possible. Planning approval requirements to retire biodiversity credits associated with the SCAW Preparatory Works will be met by Sydney Metro prior to impacts to biodiversity values occurring.
Non-Aboriginal heritage - construction	It is not expected that any listed heritage items will be impacted by the SCAW Preparatory Works. An unidentified heritage items would be managed through the Sydney Metro Unexpected Heritage Finds Procedure.
Aboriginal heritage – construction	The ACHMP, as updated in accordance with CoA, will be implemented for all works associated with the project by Sydney Metro. The ACHMP provides certainty over the known areas of archaeological sensitivity and the procedures that will be implemented.
Flooding, Hydrology and Water Quality – construction	SCAW Preparatory Works have potential to flooding, hydrology and water quality impacts without controls. The stabling and maintenance facility is within the vicinity of areas affected by the probable maximum flood (PMF) and may change flood flow paths or rates due to vegetation removal or construction site works, Temporary water quality impacts may be caused due to spills from plant and equipment, erosion from excavations, and ground disturbance, stockpiling activities, and discharge of contaminated water. If improperly managed there is the potential for these impacts to migrate offsite
Groundwater and Geology - construction	The SCAW Preparatory Works will not impact on groundwater or have the potential to result in ground settlement.

Potential risks	Risk Context
Soils and contamination - construction	SCAW Preparatory Works, including ground disturbance from vegetation removal, stockpiling, and site leveling works would result in the temporary exposure of soil to water runoff and wind, which could increase soil erosion potential if adequate controls are not in place. Exposed soils may migrate offsite and cause other impacts such as sedimentation and pollution of waterways. Erosion controls would be implemented and managed in accordance with Managing Urban Stormwater: Soils and Construction Volume 1. There are potential medium and high risk areas of contamination throughout the SCAW Worksite footprints. Ground disturbing works may expose existing contamination or contaminated groundwater which has associated impacts to human and ecological receptors. SCAW Preparatory works could result in potential soil and surface water contamination without controls.
Sustainability, climate change and greenhouse gas - construction	The SCAW Preparatory Works are likely to cause sustainability and greenhouse gas impacts without controls through emissions from plant and equipment, energy usage, and embodied energy in construction materials. 25 per cent of the greenhouse gas emissions associated with consumption of electricity during construction of the SCAW Preparatory Works will be offset to reduce these impacts. Due to the short term duration of the Preparatory Works, potential climate change impacts (e.g. extreme/more frequent weather events, extreme heat) are unlikely.
Resource management - construction	Resource management impacts are considered likely without proper management. Waste generated as part of SCAW Preparatory Works will undergo waste classification prior to transportation and disposal. Other materials will be classified into waste streams, recycled or transported off-site for disposal.
Land use and property - construction	The SCAW Preparatory Works are very unlikely to cause severance of private property due to the limited surface footprint of the worksites which is often smaller than the site area assessed in the EIS. The design has sought to minimise property acquisition as much as possible. Sydney Metro will manage property acquisition in accordance with the *Land Acquisition (Just Terms Compensation) Act* 1991 and has appointed Personal Managers to support residents throughout the acquisition process, reducing the consequence and likelihood of impacts.
Landscape and Visual Impact - construction	SCAW Preparatory Works have a moderate potential to cause landscape and visual amenity impacts without controls. Temporary visual impacts would occur with respect to construction sites, the visibility of stockpiles, plant and equipment in residential areas and removal of vegetation. A visual amenity procedure for temporary works will be developed in accordance with the CEMF.
Social and economic - construction	The SCAW Preparatory Works will impact amenity of the construction areas, will cause socio economic impacts through property acquisition, impact to agricultural assets, disruptions to and reduced visibility of businesses, and associated traffic network impacts. Potential temporary social and economic impacts associated with the project during construction would generally be managed through appropriate mitigation of other aspects such as noise, traffic, visual and air quality and through implementation of the OCCS.
Air Quality - construction	The SCAW Preparatory Works will require ground disturbing works, stockpiling activities, and the use of plant and light vehicles which could mobilise dust and create emissions around work areas. Due to the proximity of these works to residential receivers it is likely air quality impacts would occur without controls. An air quality management sub-plan for the SCAW Preparatory Works will be developed in accordance with the CEMF.

Potential risks	Risk Context
Hazard and risk - construction	Hazardous substances and dangerous goods are required to be transported and stored on-site during construction. Potential risks would be managed in accordance with NSW guidelines including the Storage and Handling of Dangerous Goods Code of Practice (WorkCover NSW, 2005). Some works areas are located within bushfire prone land. Bushfire risk will be minimised through standard site management practices, construction planning, and a bushfire management plan would minimise bushfire risks during construction. A bushfire management plan will be prepared and implemented to manage current bushfire risk and identify response actions during the SCAW Preparatory Works. The Plan will be prepared in consultation with the NSW Rural Fire Service and included in the Emergency Response Plan.
Cumulative impacts - construction	The SCAW Preparatory Works will have limited interaction with external projects. Cumulative impacts will be minimised through coordination of construction activities and communication processes with nearby projects. Cumulative impacts will be managed in accordance with the Cumulative Construction Impacts Management Plan required under the REMMs.

Risk Assessment for SCAW – Preparatory Works								
Risk Area	**Risk Statements**	**C**	**L**	**Inherent Risk Rating**	**Controls**	**C**	**L**	**Residual Risk Rating**
Transport - construction	A lack of mitigation measures and management systems in relation to traffic management leads to frequent non-compliance with the Planning Approval.	C4	L2	High	• CTMF/CTMP • Detailed site planning focused on separation of heavy and light vehicles	C4	L4	Medium
Noise and vibration - construction	A lack of mitigation measures and management systems in relation to Noise and Vibration management leads to unreasonable impacts on residents and businesses, and structural damage to buildings or heritage items.	C4	L3	Medium	• CNVS and OCCS • DNVIS • Standard, project and SCAW Preparatory Works specific mitigation measures and Noise and Vibration management procedure	C4	L4	Medium
Biodiversity – construction	A lack of mitigation measures and management systems in relation to biodiversity management leads to unreasonable impacts to flora and fauna, spread of weeds and pathogens, and unintended vegetation clearance.	C2	L2	Very High	• Standard, project and SCAW Preparatory Works specific mitigation measures • Statutory offsets retired by Sydney Metro in advance of impacts on biodiversity values • Vegetation Clearing, Fauna Handling and Weed Management Procedures	C4	L4	Medium
Non-Aboriginal heritage - construction	A lack of mitigation measures and management systems in relation to Heritage management leads to poor integration of heritage values in design and impacts on heritage items outside of what has been approved.	C5	L5	Low	• Unexpected Finds Procedure • Standard, project and SCAW Preparatory Works specific mitigation measures	C5	L6	Low

Risk Assessment for SCAW – Preparatory Works								
Risk Area	**Risk Statements**	**C**	**L**	**Inherent Risk Rating**	**Controls**	**C**	**L**	**Residual Risk Rating**
Aboriginal heritage – construction	A lack of mitigation measures and management systems in relation to Heritage management leads to poor integration of heritage values in design and impacts on heritage items outside of what has been approved.	C5	L4	Low	• Unexpected Finds Procedure • Salvage prior to construction to be completed by Sydney Metro • Approved / updated ACHMP	C5	L4	Low
Flooding, Hydrology and Water Quality – construction	A lack of mitigation measures and management systems in relation to soil and water management leads to pollution events, water quality impacts on adjacent water bodies, and soil erosion.	C3	L2	High	• Standard, project and SCAW Preparatory Works specific mitigation measures • Soil and Water sub-plan • Locating stockpiles and storage areas outside of flood prone areas • Erosion and sediment control and water discharge procedures	C4	L3	Medium
Groundwater and Geology - construction	A lack of mitigation measures and management systems in relation to groundwater management leads to groundwater drawdown, groundwater pollution and impacts of groundwater dependant ecosystems.	C5	L5	Low	• Standard, project specific mitigation measures	C6	L5	Low

Risk Assessment for SCAW – Preparatory Works								
Risk Area	**Risk Statements**	**C**	**L**	**Inherent Risk Rating**	**Controls**	**C**	**L**	**Residual Risk Rating**
Soils and contamination - construction	A lack of mitigation measures and management systems in relation to soil and water management leads to pollution events, water quality impacts on adjacent water bodies, and soil erosion.	C3	L2	High	• Unexpected Contaminated Land and Asbestos Finds Procedure • Soil and Water sub-plan • Detailed site investigations and if triggered remediation action plans and EPA accredited site auditing • Standard, project and Preparatory Works specific mitigation measures, including discharge hold point • Contamination procedure	C4	L3	Medium
Sustainability, climate change and greenhouse gas - construction	A lack of mitigation measures and management systems in relation to Sustainability, climate change and greenhouse gas leads to excessive greenhouse generation.	C4	L3	Medium	• Offset of 25% of greenhouse gas emissions • SMP sub-plans	C5	L4	Low
Resource management - construction	A lack of mitigation measures and management systems in relation to waste management leads to excessive waste generation, and inappropriate waste classification and disposal.	C3	L2	High	• Waste Classification Procedure • Standard, project and SCAW Preparatory Works specific mitigation measures	C4	L3	Medium
Land use and property - construction	A lack of mitigation measures and management systems in relation to land use and property lead to land use and property impacts outside of project approval.	C4	L2	High	• Standard and project specific mitigation measures • NSW legislation	C4	L3	Medium

Risk Assessment for SCAW – Preparatory Works								
Risk Area	**Risk Statements**	**C**	**L**	**Inherent Risk Rating**	**Controls**	**C**	**L**	**Residual Risk Rating**
Landscape and Visual Impact - construction	A lack of mitigation measures and management systems in relation to visual amenity management leads to unreasonable temporary visual impacts on the surrounding community, landscape features and poor landscape design outcomes.	C4	L1	High	• Standard, project and SCAW Preparatory Works specific mitigation measures • Visual amenity procedure	C5	L2	Medium
Social and economic - construction	Amenity impacts not appropriately mitigated or managed lead to unreasonable impacts on the community. A lack of mitigation measures and management systems in relation to community management results in community concern.	C3	L3	High	• Standard, project and SCAW Preparatory Works specific mitigation measures – amenity impacts • OCCS	C5	L3	Medium
Air Quality - construction	A lack of mitigation measures and management systems in relation to air quality management leads to unreasonable particulate pollutant emissions from construction activities.	C4	L1	High	• Standard, project and SCAW Preparatory Works specific mitigation measures • Air quality sub-plan	C5	L2	Medium
Hazard and risk - construction	A lack of management systems in relation to hazards and risks leads to breaches of legislation and environmental standards	C4	L3	Medium	• NSW guidelines • Bushfire Management Plan in consultation with NSW RFS (included in Emergency Response Plan) • Included in Preparatory CEMP risk assessment	C5	L4	Low
Cumulative impacts - construction	A lack of management systems in relation to cumulative impacts leads to excessive impacts on local community	C3	L2	High	• Included in CCIMP • Coordination of construction activities and communication processes with nearby projects	C4	L3	Medium

Risk Context for SCAW – Main excavation and viaduct works

Potential risks	Risk Context
Transport - construction	SCAW activities have a high potential to cause temporary traffic, transport and parking impacts on the surrounding community without controls due to the requirements for road network modifications, road or lane closures, use of heavy vehicles, staff parking requirements, and alterations to access. Traffic will be managed in accordance with a Construction Traffic Management Plan (CTMP) that is consistent with the Sydney Metro construction traffic management framework (CTMF) and traffic mitigation measures as outlined in the SMWSA Submissions Report.
Noise and vibration - construction	SCAW activities have a high potential to cause noise and vibration impacts on the surrounding community without controls due to the need for: excavation activities; construction of permanent infrastructure, the stabling and maintenance facility and other ancillary facilities; and the proximity of plant and equipment to residential areas within the vicinity of Orchard Hills. Noise will be managed in accordance with a construction noise and vibration strategy (CNVS), Construction Noise and Vibration Management Plan (CNVMP) and noise and vibration mitigation measures as outlined in the SMWSA Submissions Report. A detailed noise and vibration impact statement (DNVIS) will be prepared for vibration-intensive construction sites and /or activities to ensure the adequacy of the noise and vibration mitigation measures. Noise and vibration impacts will be limited for sensitive receivers from the SCAW activities based on the location of works relating to Orchard Hills and the typical construction scenarios associated with the SCAW package being able to be scheduled to be undertaken during mostly during standard work hours. Noise and vibration monitoring will also be undertaken as required.
Biodiversity – construction	SCAW activities have a very high potential to cause biodiversity impacts in the surrounding area without controls as the project would need to complete clearing works within the construction footprint in order to facilitate construction. Works will impact native vegetation, threatened ecological communities and threatened species or their habitat. The works also have the potential to impact fish passage and fish habitat associated with Cosgroves Creek and Blaxland Creek. The project has been designed to avoid biodiversity impacts where possible, by providing bridges and viaducts over key riparian and vegetated areas and ensuring these structures are designed to maintain fauna connectivity. Biodiversity will be managed in accordance with a Flora and Fauna Management Plan, biodiversity mitigation measures as outlined in the SMWSA Submissions Report. Planning approval requirements to retire biodiversity credits associated with SCAW will be met prior to any clearing works occurring in that stage. Landscaping and tree replacement planting works will also occur along the corridor.
Non-Aboriginal heritage - construction	SCAW activities have a high potential to cause impacts to non-Aboriginal heritage without controls as a result of changes to visual setting and temporary minor vibration impacts due to the proximity to heritage listed items such as Warragamba to Prospect Water Supply Pipelines or potential heritage items such as McMaster Farm. Non-Aboriginal heritage will be managed through design, the non-Aboriginal Archaeological Research Design, non-Aboriginal Heritage Management Plan and through non-Aboriginal heritage mitigation measures. Vibration monitoring will also be undertaken as required.
Aboriginal heritage – construction	The ACHMP, as updated in accordance with CoA, will be implemented for all works associated with the project. The ACHMP provides certainty over the known areas of archaeological sensitivity and the procedures that will be implemented.
Flooding, Hydrology and Water Quality – construction	SCAW activities have a high potential to cause flooding, hydrology and water quality impacts without controls. Some SCAW worksites will be within areas affected by the probable maximum flood (PMF) and may change flood flow paths or rates due to vegetation removal or construction site works, particularly around the stabling and maintenance facility. Temporary water quality impacts may be caused due to spills from plant and equipment, erosion from excavations, and ground disturbance, stockpiling activities, and discharge of contaminated water. If improperly managed there is the potential for these impacts to migrate offsite.

Potential risks	Risk Context
Groundwater and Geology - construction	Excavation works has the potential to impact groundwater at Orchard Hills without controls. The cutting south of Orchard Hills Station would be drained (un-tanked) during construction. Groundwater inflow into the drained cutting south of the station would occur, causing a lowering of adjacent groundwater levels. Due to the predominantly clay soils present in the area, any impacts are likely to be limited. The potential impact on very shallow soil water is unlikely due to its intermittent and localised nature. Changes to groundwater recharge may also occur during construction due to an increase in impervious surfaces and capture of runoff.
Soils and contamination - construction	Construction activities including excavation, ground disturbance from vegetation removal, stockpiling would result in the temporary exposure of soil to water runoff and wind, which could increase soil erosion potential if adequate controls are not in place. Exposed soils may migrate offsite and cause other impacts such as sedimentation and pollution of waterways. This is particularly relevant to SCAW as they will be working near waterways when constructing viaduct and bridge structures. Erosion controls would be implemented and managed in accordance with Managing Urban Stormwater: Soils and Construction Volume 1. There are potential medium and high risk areas of contamination throughout the project footprint. Excavation and ground disturbing works may expose existing contamination or contaminated groundwater which has associated impacts to human and ecological receptors. SCAW activities could result in potential soil, surface water or groundwater contamination without controls.
Sustainability, climate change and greenhouse gas - construction	SCAW activities are likely to cause sustainability, climate change and greenhouse gas impacts without controls through emissions from plant and equipment, vegetation removal, energy usage, and embodied energy in construction materials. Sydney Metro will offset 25 per cent of the greenhouse gas emissions associated with consumption of electricity during construction to reduce these impact as well as providing a net increase in the number of replacement trees at a ratio of 2:1 (excluding statutory offsets). Due to the duration of construction potential climate change impacts (e.g. extreme/more frequent weather events, extreme heat) may occur. Extreme weather events would be considered in emergency management procedures for the construction of the project and sensitive construction equipment would be protected from the effects of extreme weather and climate.
Resource management - construction	Resource management impacts are considered likely without proper management. Waste generated as part of SCAW would undergo waste classification prior to transportation and disposal. Other materials would be classified into waste streams, recycled or transported off-site for disposal.
Land use and property - construction	Construction of the project would require permanent property acquisition and temporary leasing of private land, public land and land held in government ownership for construction sites, the stabling and maintenance facility, and permanent works. During construction, the project would also result in temporary direct impacts on land use from use of construction compounds and ancillary facilities within the construction footprint for the project. Once established as a construction zone, current land uses would cease. The design has sought to minimise property acquisition as much as possible. Sydney Metro manages property acquisition in accordance with the *Land Acquisition (Just Terms Compensation) Act* 1991, and has appointed Personal Managers to support residents throughout the acquisition process, reducing the consequence and likelihood of impacts. SCAW activities have the potential to divide properties and affect access as the majority of the works are at-surface, instead of tunnel, and will require establishment of a construction site from Orchard Hills to Elizabeth Drive and associated site fencing and hoarding. The project alignment (including the horizontal and vertical alignment) has considered potential severance of properties and land fragmentation and has avoided or minimised these impacts where possible. Sydney Metro have also committed to consulting with affected property owners to ensure access to potentially fragmented land parcels is maintained during construction.

Potential risks	Risk Context
Landscape and Visual Impact - construction	SCAW activities have a high potential to cause landscape and visual amenity impacts without controls. Temporary visual impacts would occur with respect to construction sites, the visibility of plant and equipment in residential areas, light spill from night works and removal of vegetation. A Visual Amenity Management Plan for temporary works would be developed in accordance with the CEMF and trees removed would be replaced at a 2:1 ratio (excluding statutory biodiversity offsets). Permanent built works and landscaping would be managed through the design review process and documented in a stage specific PUDCLP.
Social and economic - construction	SCAW activities will impact amenity of the area, will cause socio economic impacts through property acquisition, will impact agricultural assets, may cause disruptions to and reduce visibility of businesses through construction works and associated traffic network impacts. Potential temporary social and economic impacts associated with the project during construction would generally be managed through appropriate mitigation of other aspects such as noise, traffic, visual and air quality and through implementation of the OCCS.
Air Quality - construction	SCAW activities will require excavations, ground disturbing works, stockpiling activities, and the use of plant and light vehicles which could mobilise dust and create emissions around work areas. It is very likely air quality impacts would occur without controls.
Hazard and risk - construction	Transport and storage of hazardous substances and dangerous goods are required to be transported and stored on-site during construction. Potential risks would be managed in accordance with NSW guidelines including the Storage and Handling of Dangerous Goods Code of Practice (WorkCover NSW, 2005) and applying SEPP 33 (Department of Planning, 2011) as required. Some works areas are located within bushfire prone land. Bushfire risk will be minimised through standard site management practices, construction planning, and a bushfire management plan would minimise bushfire risks during construction. 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.
Cumulative impacts - construction	The SCAW activities will interact with external projects including Western Sydney Airport Stage 1, the Northern Road Upgrade, the future M12 motorway and the Elizabeth Drive upgrade. Cumulative impacts are minimised through coordination of construction activities and communication processes with nearby projects. Cumulative impacts will be managed in accordance with the Cumulative Construction Impacts Management Plan required under the REMMs.

Risk Assessment for SCAW – Main excavation and viaduct works								
Risk Area	**Risk Statements**	**C**	**L**	**Inherent Risk Rating**	**Controls**	**C**	**L**	**Residual Risk Rating**
General Environmental Management	A lack of management systems in relation to general environmental management leads to non-compliance with the Planning Approval.	C3	L2	High	• CEMP • Sub-plans and Monitoring Programs • Environmental Inspections • Environmental monitoring • Reporting, auditing and review	C5	L4	Low
Transport - construction	A lack of mitigation measures and management systems in relation to traffic management leads to non-compliance with the Planning Approval.	C3	L2	High	• CTMF/CTMP • Alternative parking arrangements • Haulage strategy developed using constructability analysis • Detailed site planning focused on separation of heavy and light vehicles	C4	L4	Medium
Noise and vibration - construction	A lack of mitigation measures and management systems in relation to Noise and Vibration management leads to unreasonable impacts on residents and businesses, and structural damage to buildings and/or heritage items.	C3	L2	High	• CNVS and OCCS • DNVIS • Standard and project specific mitigation measures • Included in CNVMP risk assessment	C4	L3	Medium

Risk Assessment for SCAW – Main excavation and viaduct works								
Risk Area	**Risk Statements**	**C**	**L**	**Inherent Risk Rating**	**Controls**	**C**	**L**	**Residual Risk Rating**
Biodiversity – construction	A lack of mitigation measures and management systems in relation to biodiversity management leads to unreasonable impacts to flora and fauna, spread of weeds and pathogens, and unintended vegetation clearance.	C3	L1	Very High	• Standard and project specific mitigation measures • Statutory offsets • Nest boxes to be installed prior to clearing hollow bearing trees	C4	L2	High
Non-Aboriginal heritage - construction	A lack of mitigation measures and management systems in relation to Heritage management leads to poor integration of heritage values in design and impacts on heritage items outside of what has been approved.	C3	L2	High	• Unexpected Finds Procedure • Standard and project specific mitigation measures • Included in HMP risk assessment	C4	L3	Medium
Aboriginal heritage – construction	A lack of mitigation measures and management systems in relation to Heritage management leads to poor integration of heritage values in design and impacts on heritage items outside of what has been approved.	C4	L3	Medium	• Unexpected Finds Procedure • Salvage prior to construction • Approved / updated ACHMP	C5	L6	Low
Flooding, Hydrology and Water Quality – construction	A lack of mitigation measures and management systems in relation to soil and water management leads to unexpected pollution events, water quality impacts on adjacent water bodies, and soil erosion.	C3	L1	Very High	• Standard and project specific mitigation measures • Locating sites outside of flood prone areas • Water reuse strategy • Basins • Included in SWMP risk assessment	C4	L2	High

Risk Assessment for SCAW – Main excavation and viaduct works								
Risk Area	**Risk Statements**	**C**	**L**	**Inherent Risk Rating**	**Controls**	**C**	**L**	**Residual Risk Rating**
Groundwater and Geology - construction	A lack of mitigation measures and management systems in relation to groundwater management leads to groundwater drawdown, groundwater pollution and impacts of groundwater dependant ecosystems.	C5	L5	Low	• Standard and project specific mitigation measures • Drained and undrained infrastructure • Included in CEMP risk assessment	C6	L5	Low
Soils and contamination - construction	A lack of mitigation measures and management systems in relation to soil and water management leads to unexpected pollution events, water quality impacts on adjacent water bodies, and soil erosion.	C3	L2	High	• Unexpected Contaminated Land and Asbestos Finds Procedure • Detailed site investigations and if triggered remediation action plans and EPA accredited site auditing • Standard and project specific mitigation measures, including discharge hold point • Included in SWMP risk assessment	C4	L3	Medium
Sustainability, climate change and greenhouse gas - construction	A lack of mitigation measures and management systems in relation to Sustainability, climate change and greenhouse gas leads to excessive greenhouse generation, and a lack of consideration of potential climate change risks.	C3	L2	High	• Offset of 25% of greenhouse gas emissions • SMP sub-plans	C5	L3	Medium

Risk Assessment for SCAW – Main excavation and viaduct works								
Risk Area	**Risk Statements**	**C**	**L**	**Inherent Risk Rating**	**Controls**	**C**	**L**	**Residual Risk Rating**
Resource management - construction	A lack of mitigation measures and management systems in relation to waste management leads to excessive waste generation, and inappropriate waste classification and disposal.	C3	L2	High	• Waste Classification Procedure • Standard and project specific mitigation measures • Included in WMP risk assessment	C4	L3	Medium
Land use and property - construction	A lack of mitigation measures and management systems in relation to land use and property lead to land use and property impacts outside of project approval.	C4	L2	High	• Standard and project specific mitigation measures • NSW legislation • Included in CEMP risk assessment	C4	L3	Medium
Landscape and Visual Impact - construction	A lack of mitigation measures and management systems in relation to visual amenity management leads to unreasonable visual impacts on the surrounding community, landscape features and poor landscape design outcomes.	C4	L1	High	• Standard and project specific mitigation measures • Included in VAMP risk assessment	C5	L2	Medium
Social and economic - construction	Amenity impacts not appropriately mitigated or managed lead to unreasonable impacts on the community. A lack of mitigation measures and management systems in relation to community management results in community concern.	C3	L2	High	• Standard and project specific mitigation measures – amenity impacts • OCCS • Included in CEMP risk assessment	C5	L3	Medium
Air Quality - construction	A lack of mitigation measures and management systems in relation to air quality management leads to unreasonable particulate pollutant emissions from construction activities.	C4	L1	High	• Standard and project specific mitigation measures • Included in CEMP risk assessment	C5	L2	Medium

Risk Assessment for SCAW – Main excavation and viaduct works								
Risk Area	**Risk Statements**	**C**	**L**	**Inherent Risk Rating**	**Controls**	**C**	**L**	**Residual Risk Rating**
Hazard and risk - construction	A lack of management systems in relation to hazards and risks leads to breaches of legislation and environmental standards	C4	L1	High	• NSW guidelines • Bushfire Management Plan in consultation with NSW RFS and WSA (included in Emergency Response Plan) • Included in CEMP risk assessment	C5	L3	Medium
Cumulative impacts - construction	A lack of management systems in relation to cumulative impacts leads to excessive impacts on local community	C3	L2	High	• Included in CCIMP risk assessment • Coordination of construction activities and communication processes with nearby projects.	C4	L3	Medium

Appendix I – SSTOM risk context and risk assessment

Risk Context for SSTOM

Potential risks	Risk Context
Transport - construction	SSTOM activities have a very high potential to cause temporary traffic, transport and parking impacts on the surrounding community without controls due to the requirements for road network modifications, road or lane closures, use of heavy vehicles, staff parking requirements, and alterations to access. Traffic will be managed in accordance with a construction traffic management plan (CTMP) that is consistent with the Sydney Metro construction traffic management framework (CTMF) and traffic mitigation measures as outlined in the SMWSA Submissions Report.
Noise and vibration - construction	SSTOM activities have a very high potential to cause noise and vibration impacts on the surrounding community without controls due to the use of heavy vehicles, the proximity of plant and equipment to residential areas, and the need for fit out and finishing works including demobilising site compounds and facilities and removing materials. Noise will be managed in accordance with a construction noise and vibration strategy (CNVS), Construction Noise and Vibration Management Plan (CNVMP) and noise and vibration mitigation measures as outlined in the SMWSA Submissions Report. A detailed noise and vibration impact statement (DNVIS) will be prepared for vibration-intensive construction sites and /or activities to ensure the adequacy of the noise and vibration mitigation measures. Noise and vibration monitoring will also be undertaken as required.
Biodiversity – construction	SSTOM activities have limited potential to impact biodiversity as most vegetation clearing will have occurred in prior stages. The main impacts to biodiversity would be through light and noise impacts from construction. Some minor clearing may be required for access roads and potentially within station precinct construction areas, but this is has not been confirmed at the time of writing this report. The risk assessment may need to be reviewed once this has been confirmed.
Non-Aboriginal heritage - construction	SSTOM activities have the potential to cause impacts to non-Aboriginal heritage without controls as a result of alteration of heritage elements and changes to heritage and visual setting. The construction of the project at the existing St Marys Railway Station would occur within the SHR, s170 and LEP curtilage. Construction works would also cause indirect visual impacts to the heritage setting of St Marys Station Group and Kelvin. Non-Aboriginal heritage will be managed through design, non-Aboriginal Heritage Management Plan and through non-Aboriginal heritage and visual mitigation measures.
Aboriginal heritage – construction	SSTOM activities have limited potential to impact Aboriginal heritage as the work sites for SSTOM would have been disturbed, and salvage programs completed, by other stages. Aboriginal cultural heritage will be integrated into the project's broader heritage interpretation strategy as outlined in the ACHMP but dealt with separately.
Flooding, Hydrology and Water Quality – construction	SSTOM worksites will be within areas affected by the probable maximum flood (PMF) and may change flood flow paths or rates due to construction site works. Temporary water quality impacts may be caused due to spills, erosion, and discharge of contaminated water. If improperly managed there is the potential for these impacts to migrate offsite.
Groundwater and Geology - construction	SSTOM works include shallow excavations for landscaping and precinct works and have limited potential to impact groundwater or geology during construction but may cause changes to groundwater recharge due to an increase in impervious surfaces and capture of runoff.
Soils and contamination - construction	SSTOM works include shallow excavations for landscaping and precinct works and may result in the temporary exposure of soil to water runoff and wind. Risks of erosion are limited as the works area will be limited and progressively stabilised.

Potential risks	Risk Context
Sustainability, climate change and greenhouse gas - construction	SCAW works are likely to cause sustainability, climate change and greenhouse gas impacts without controls through emissions from plant and equipment, energy usage, and embodied energy in construction materials. Due to the duration of construction potential climate change impacts (e.g. extreme/more frequent weather events, extreme heat) may occur. Extreme weather events would be considered in emergency management procedures for the construction of the project and sensitive construction equipment would be protected from the effects of extreme weather and climate.
Resource management - construction	Resource management impacts are considered likely without proper management. . Waste generated as part of SSTOM would undergo waste classification prior to transportation and disposal. Other materials would be classified into waste streams, recycled or transported off-site for disposal.
Land use and property - construction	Construction of the project would require permanent property acquisition and temporary leasing of private land, public land and land held in government ownership for construction sites and permanent works. During construction, the project would also result in temporary direct impacts on land use from use of construction compounds and ancillary facilities within the construction footprint for the project. Once established as a construction zone, current land uses would cease. The design has sought to minimise property acquisition as much as possible. Sydney Metro manages property acquisition in accordance with the *Land Acquisition (Just Terms Compensation) Act* 1991, and has appointed Personal Managers to support residents throughout the acquisition process, reducing the consequence and likelihood of impacts.
Landscape and Visual Impact - construction	SSTOM activities have a high potential to cause landscape and visual amenity impacts during construction without controls. Temporary visual impacts would occur with respect to construction sites, the visibility of plant and equipment in residential areas, light spill from night works. Landscaping and other finishing works required will have a positive visual impact. A Visual Amenity Management Plan for temporary works would be developed in accordance with the CEMF.
Social and economic - construction	Potential temporary social and economic impacts associated with the project during construction would generally be managed through appropriate mitigation of other aspects such as noise, traffic, visual and air quality and through implementation of the OCCS. A small business owners plan will also be created to minimise impacts to businesses around St Marys.
Air Quality - construction	SSTOM works will require the use of plant and light vehicles which could create emissions around work areas and generate dust on unsealed surfaces. Minor air quality impacts would occur without controls.
Hazard and risk - construction	Transport and storage of hazardous substances and dangerous goods are required to be transported and stored on-site during construction. Potential risks would be managed in accordance with NSW guidelines including the Storage and Handling of Dangerous Goods Code of Practice (WorkCover NSW, 2005) and applying SEPP 33 (Department of Planning, 2011) as required. Some works areas are located within bushfire prone land. Bushfire risk will be minimised through standard site management practices, construction planning, and a bushfire management plan would minimise bushfire risks during construction. 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.
Cumulative impacts - construction	The SSTOM works will interact with external projects including Western Sydney Airport Stage 1 and St Mary's intermodal. Cumulative impacts are minimised through coordination of construction activities and communication processes with nearby projects. Cumulative impacts will be managed through the Cumulative Construction Impacts Management Plan.

Risk Assessment for SSTOM								
Risk Area	**Risk Statements**	**C**	**L**	**Inherent Risk Rating**	**Controls**	**C**	**L**	**Residual Risk Rating**
Transport - construction	A lack of mitigation measures and management systems in relation to traffic management leads to frequent non-compliance with the Planning Approval.	C3	L1	Very High	• CTMF/CTMP • Alternative parking arrangements	C4	L3	High
Noise and vibration - construction	A lack of mitigation measures and management systems in relation to Noise and Vibration management leads to unreasonable impacts on residents and businesses, and structural damage to buildings or heritage items.	C3	L1	Very High	• CNVS and OCCS • DNVIS • Standard and project specific mitigation measures • Included in CNVMP risk assessment	C5	L1	High
Biodiversity – construction	A lack of mitigation measures and management systems in relation to biodiversity management leads to unreasonable impacts to flora and fauna, spread of weeds and pathogens, and unintended vegetation clearance.	C3	L2	High	• Standard and project specific mitigation measures • Statutory offsets (if required) • Replacement of street trees 2:1 Included in FFMP risk assessment, if required	C4	L2	High
Non-Aboriginal heritage - construction	A lack of mitigation measures and management systems in relation to Heritage management leads to poor integration of heritage values in design and impacts on heritage items outside of what has been approved.	C3	L1	Very High	• Unexpected Finds Procedure • Standard and project specific mitigation measures • ARD; DRP • Included in CEMP risk assessment	C4	L2	High

Risk Assessment for SSTOM								
Risk Area	**Risk Statements**	**C**	**L**	**Inherent Risk Rating**	**Controls**	**C**	**L**	**Residual Risk Rating**
Aboriginal heritage – construction	A lack of mitigation measures and management systems in relation to Heritage management leads to poor integration of heritage values in design and impacts on heritage items outside of what has been approved.	C4	L5	Low	• Unexpected Finds Procedure • Approved / updated ACHMP	C5	L5	Low
Flooding, Hydrology and Water Quality – construction	A lack of mitigation measures and management systems in relation to soil and water management leads to unexpected pollution events, water quality impacts on adjacent water bodies, and soil erosion.	C3	L1	Very high	• Standard and project specific mitigation measures • Locating sites outside of flood prone areas • WTPs • Included in SWMP risk assessment	C4	L1	High
Groundwater and Geology - construction	A lack of mitigation measures and management systems in relation to groundwater management leads to groundwater drawdown, groundwater pollution and impacts of groundwater dependant ecosystems.	C4	L1	High	• Standard and project specific mitigation measures • Drained and undrained infrastructure • WTPs • Included in GMP risk assessment	C5	L1	High
Soils and contamination - construction	A lack of mitigation measures and management systems in relation to soil and water management leads to unexpected pollution events, water quality impacts on adjacent water bodies, and soil erosion.	C4	L1	High	• Unexpected Contaminated Land and Asbestos Finds Procedure • Standard and project specific mitigation measures, including discharge hold point • WTPs • Included in SWMP risk assessment	C3	L1	High

Risk Assessment for SSTOM								
Risk Area	**Risk Statements**	**C**	**L**	**Inherent Risk Rating**	**Controls**	**C**	**L**	**Residual Risk Rating**
Sustainability, climate change and greenhouse gas - construction	A lack of mitigation measures and management systems in relation to Sustainability, climate change and greenhouse gas leads to excessive greenhouse generation, and a lack of consideration of potential climate change risks.	C3	L1	Very high	• Offset of 25% of greenhouse gas emissions • SMP sub-plans	C4	L1	High
Resource management - construction	A lack of mitigation measures and management systems in relation to waste management leads to excessive waste generation, and inappropriate waste classification and disposal.	C4	L1	High	• Waste Classification Procedure • Standard and project specific mitigation measures • Included in CEMP risk assessment	C5	L1	High
Land use and property - construction	A lack of mitigation measures and management systems in relation to land use and property lead to land use and property impacts outside of project approval.	C4	L3	Medium	• Standard and project specific mitigation measures • Included in CEMP risk assessment	C4	L4	Medium
Landscape and Visual Impact - construction	A lack of mitigation measures and management systems in relation to visual amenity management leads to unreasonable visual impacts on the surrounding community, landscape features and poor landscape design outcomes.	C3	L1	Very High	• A Visual Amenity Management Plan for temporary works would be developed in accordance with the CEMF • Replacement of street trees 2:1/ certified areas • Standard and project specific mitigation measures • Included in CEMP risk assessment	C3	L1	Medium

Risk Assessment for SSTOM								
Risk Area	**Risk Statements**	**C**	**L**	**Inherent Risk Rating**	**Controls**	**C**	**L**	**Residual Risk Rating**
Social and economic - construction	Amenity impacts not appropriately mitigated or managed lead to unreasonable impacts on the community. A lack of mitigation measures and management systems in relation to community management results in community concern.	C3	L3	High	• Standard and project specific mitigation measures – amenity impacts • OCCS; SBMP • Included in CEMP risk assessment	C5	L3	Medium
Air Quality - construction	A lack of mitigation measures and management systems in relation to air quality management leads to unreasonable particulate pollutant emissions from construction activities.	C4	L2	High	• Standard and project specific mitigation measures • Included in CEMP risk assessment	C5	L2	Medium
Hazard and risk - construction	A lack of management systems in relation to hazards and risks leads to breaches of legislation and environmental standards	C4	L1	High	• NSW guidelines • Bushfire Management Plan in consultation with NSW RFS and WSA • Included in CEMP risk assessment	C5	L3	Medium
Cumulative impacts - construction	A lack of management systems in relation to cumulative impacts leads to excessive impacts on local community	C3	L1	Very High	• Included in CCIMP • Coordination of construction activities and communication processes with nearby projects.	C4	L1	High

Appendix J – Environmental Representative endorsement