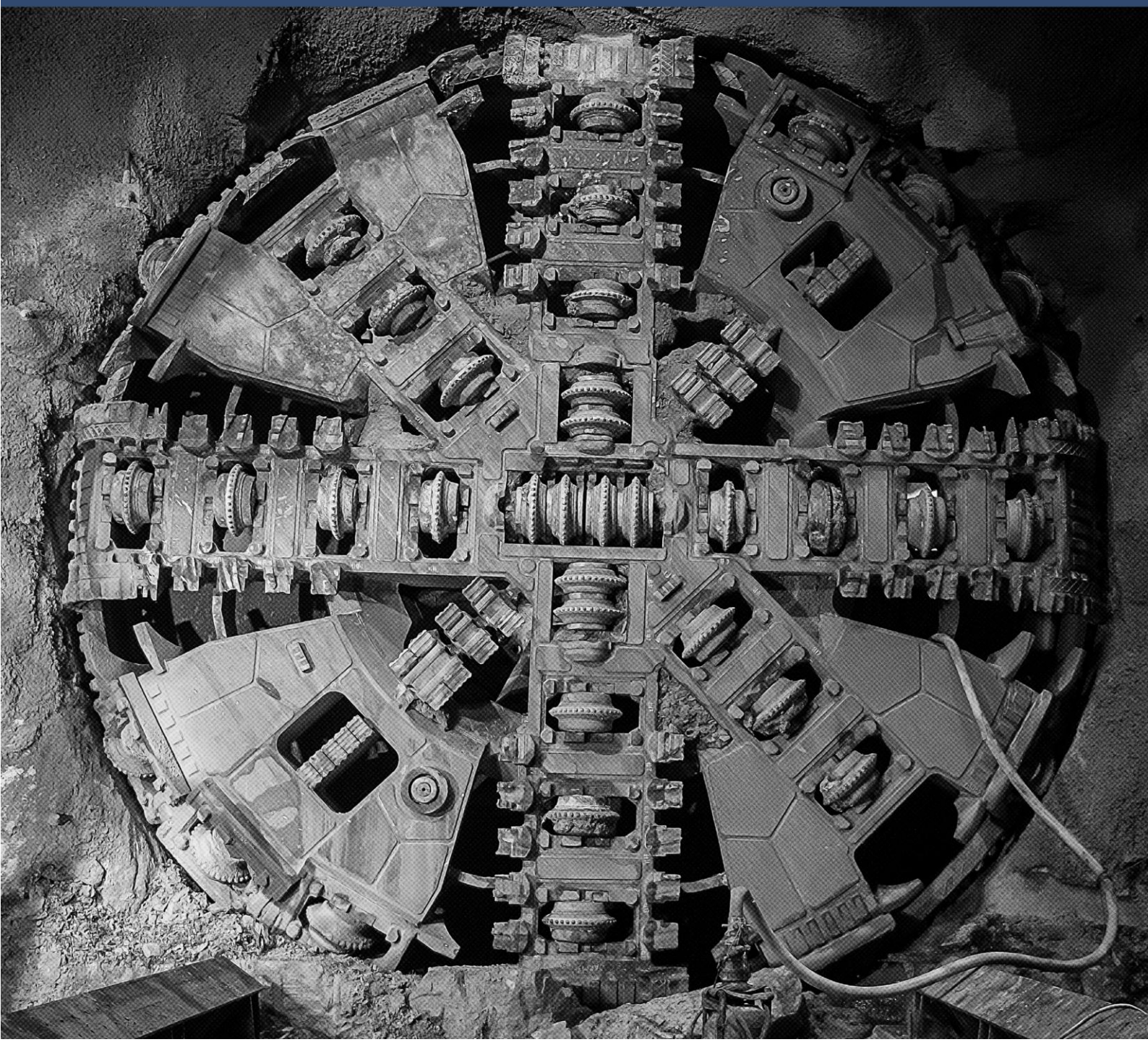
EASTERN TUNNELLING PACKAGE
John Holland CPB Contractors Ghella JV

JOHN HOLLAND CPB CONTRACTORS Ghella

AIR QUALITY MANAGEMENT

SUB-PLAN



AIR QUALITY MANAGEMENT SUB-PLAN

Project number	7040
Document number	SMWSTETP-JCG-SWD-SW000-EN-PLN-002028

Document approval

Rev	Date	Prepared by	Reviewed by	Comments	Approved by
A	14/12/2022	[redacted]		Draft for Sydney Metro and ER review	[redacted]
B	16/02/2023			Draft for SM review and ER endorsement	
0	23/03/2023			ER Endorsement	
1	18/03/2024			Minor amendments as part of 2024 annual review	
2	23/04/2025			Minor amendments as part of 2025 annual review	
3	22/05/2025			Addressing comments on annual review	
Signature:					

THIS PLAN IS THE PROPERTY OF JCG AND MAY NOT BE COPIED, DISTRIBUTED OR USED WITHOUT THE WRITTEN CONSENT OF JCG.

Compliance

Table 1: Compliance matrix

ID	Requirement[1]	Reference
C1	Construction Environmental Management Plans (CEMPs) and CEMP Sub-plans must be prepared in accordance with the Construction Environmental Management Framework (CEMF) included in the documents listed in Condition A1 to detail how the performance outcomes, commitments and mitigation measures specified in the documents listed in Condition A1 will be implemented and achieved during construction.	Section 1.1
C5	Of the CEMP Sub-plans required under Condition C1, the following CEMP Sub-plans must be prepared in consultation with the relevant government agencies identified for each CEMP Sub-plan. Details of issues raised by a government agency during consultation must be included in the relevant CEMP Sub-plan, including copies of all correspondence from those government agencies as required by Condition A6. Where a government agency (ies) request(s) is not included, the Proponent must provide the Planning Secretary / ER (whichever is applicable) justification as to why: (a) Noise and vibration: Place Management NSW (in respect of The Bays) and Relevant Council(s) (b) Flora and fauna: DPE Environment and Heritage Group, DPI Fisheries, and Relevant Council(s) (c) Heritage (Non-Aboriginal and Aboriginal): Heritage NSW, Place Management NSW (in respect of The Bays) and Relevant Council(s) (d) Spoil: Relevant council(s) (e) Soil and water: DPE Water and Relevant Council(s)	The requirements of this Condition are not triggered by this Sub-plan
C6	The CEMP Sub-plans must state how: (a) the environmental performance outcomes identified in the documents listed in Condition A1 will be achieved;	Table 18
	(b) the mitigation measures identified in the documents listed in Condition A1 will be implemented;	Table 11
	(c) the relevant conditions of this approval will be complied with; and	Table 16
	(d) issues requiring management during construction (including cumulative impacts), as identified through ongoing environmental risk analysis, will be managed through SMART principles	Table 3 Appendix A
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 1.4
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 phased no later than one (1) month before the commencement of that phase.	Section 1.4
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 phased no later than one (1) month before the commencement of that phase.	Section 1.4
C10	Construction must not commence until the CEMP and all CEMP Sub-plans have been approved by the Planning Secretary or endorsed by the ER (whichever is applicable), unless otherwise agreed by the Planning Secretary. The CEMP and	Section 1.4

ID	Requirement[1]	Reference
	CEMP Sub-plans, as approved by the Planning Secretary or endorsed by the ER (whichever is applicable), including any minor amendments approved by the ER, must be implemented for the duration of construction. Where construction of the CSSI is phased, construction of a phase must not commence until the CEMP and CEMP Sub-plans for that phase have been approved by the Planning Secretary or endorsed by the ER upon nomination by the Planning Secretary (whichever is applicable).	

1. Other relevant compliance obligations are detailed in Part B of this Sub-Plan (Element 4).

Table of contents

Compliance i
Acronyms 4
Part A: Overview 5
1. Introduction 5
1.1. Purpose 5
1.2. Objectives, targets and key performance indicators 5
1.3. Context and interface with other plans 5
1.4. Consultation and approval 6
1.5. Sub-plan structure 7
2. Project overview 8
2.1. Background 8
2.2. Project scope 8
2.3. Project phasing 9
3. Legal and other requirements 14
3.1. Legislation 14
3.2. Guidelines 14
3.3. Other environmental requirements 14
4. People and collaboration 15
4.1. Our team 15
4.2. Collaboration with Sydney Metro, the ER and the AA 16
5. Existing environment 17
5.1. Climate and meteorology 17
5.2. Existing air quality 17
5.3. Local emission sources 18
6. Environmental aspects and impacts 19
6.1. Construction activities 19
6.2. Impacts 19
7. Environmental control measures 20
8. Compliance management 24
8.1. Hold points 24
8.2. Complaints 24
9. Review and improvement 25
9.1. Continual improvement 25
9.2. Sub-plan review 25
Part B: Implementation Systems and Tools 26
Part C Annexures 37
Appendix A Environmental Procedures 37

Acronyms

Table 2: Acronyms

Acronym	Definition
AQMP	Air Quality Management Sub-plan
CEMP	Construction Environmental Management Plan
DPHI	Department of Planning, Housing and Infrastructure
E&SMS	Environment and Sustainability Management System
ECM	Environmental Control Map
EIS	Environmental Impact Statement
Environmental aspect	Defined by AS/NZS ISO 14001:2015 as an element of an organisation's activities, products or services that can interact with the environment.
Environmental impact	Defined by AS/NZS ISO 14001:2015 as any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organisation's environmental aspects.
Environmental objective	Defined by AS/NZS ISO 14001:2015 as an overall environmental goal, consistent with the environmental policy, that an organisation sets itself to achieve.
Environmental target	Defined by AS/NZS ISO 14001:2015 as a detailed performance requirement, applicable to the organisation or parts thereof, that arises from the environmental objectives and that needs to be set and met in order to achieve those objectives.
EP&A Act	Environmental Planning and Assessment Act 1979
EPA	NSW Environment Protection Authority
EPL	Environment Protection Licence
ETP Works	Eastern Tunnelling Package Works
ER	Environmental Representative
IAQM	Guidance on the assessment of dust from demolition and construction (UK Institute of Air Quality Management)
IC	Independent Certifier
JCG	John Holland CPB Ghella Joint Venture
OOHW	Out-of-hours work
PIN	Penalty Infringement Notice
PM	Particulate Matter
POEO Act	Protection of the Environment Operations Act 1997
Project, the	Eastern Tunnelling Package
REMM	Revised Environmental Mitigation Measure
SM	Sydney Metro
SSI	State Significant Infrastructure
STP	Slurry Treatment Plant
TBM	Tunnel Boring Machine
WTP	Water Treatment Plant

Part A: Overview

1. Introduction

1.1. Purpose

This Air Quality Management Sub-plan (AQMP or Sub-plan) is applicable to the construction of the Sydney Metro West - Eastern Tunnelling Package (ETP Works or the Project). This Sub-plan describes how John Holland CPB Ghella Joint Venture (JCG) will minimise and manage the air quality impacts of the Project.

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

- State Significant Infrastructure (SSI) 19238057 Infrastructure Approval (dated 24 August 2022) and relevant conditions of the Sydney Metro West Concept Schedule 2 of SSI 10038 Infrastructure Approval (dated 11 March 2021) (Infrastructure Approvals), including Modification 1 determined in April 2023, Modification 2 determined in October 2023 and Modification 3 determined in November 2024
- Environment Protection Licence 21784 (EPL)
- Sydney Metro West – Stage 2 – Phasing Report
- AS/NZS ISO 14001:2016 Environmental Management Systems – Requirements with guidance for use
- Sydney Metro Construction Environmental Management Framework (CEMF)
- Environmental Impact Statement (EIS) and the Submissions Report, including the Revised Environmental Mitigation Measures (REMMs)
- Contractual requirements including the ETP Deed and General and Particular Specifications
- Applicable legislation.

1.2. Objectives, targets and key performance indicators

The objectives, targets and key performance indicators for air quality management are detailed in Table 3.

Table 3: Objectives, targets and key performance indicators

Objectives	Targets	Key Performance Indicators
Minimise gaseous and particulate pollutant emissions from construction activities as far as feasible and reasonable	No Penalty Infringement Notices (PINS) in relation to air quality management. No avoidable air quality/dust complaints	Number of PINs Number of avoidable air quality/dust complaints
Identify and control potential dust and air pollutant sources.	No Class 1 or Class 2 environmental incidents associated with dust or air pollution	Number of Class 1 or Class 2 environmental incidents (dust or air pollution)

1.3. Context and interface with other plans

To achieve the intended environmental performance outcomes of the Project, JCG have established an Environment and Sustainability Management System (E&SMS) in accordance with the requirements of ISO 14001:2016. Guided by the Environment and Sustainability Policy, the E&SMS consists of a Construction Environmental Management Plan (CEMP), issue-specific procedures, Sub-plans and monitoring programs as illustrated in Figure 1. Implementation of the E&SMS is achieved through tools, checklists and forms as detailed in the CEMP.

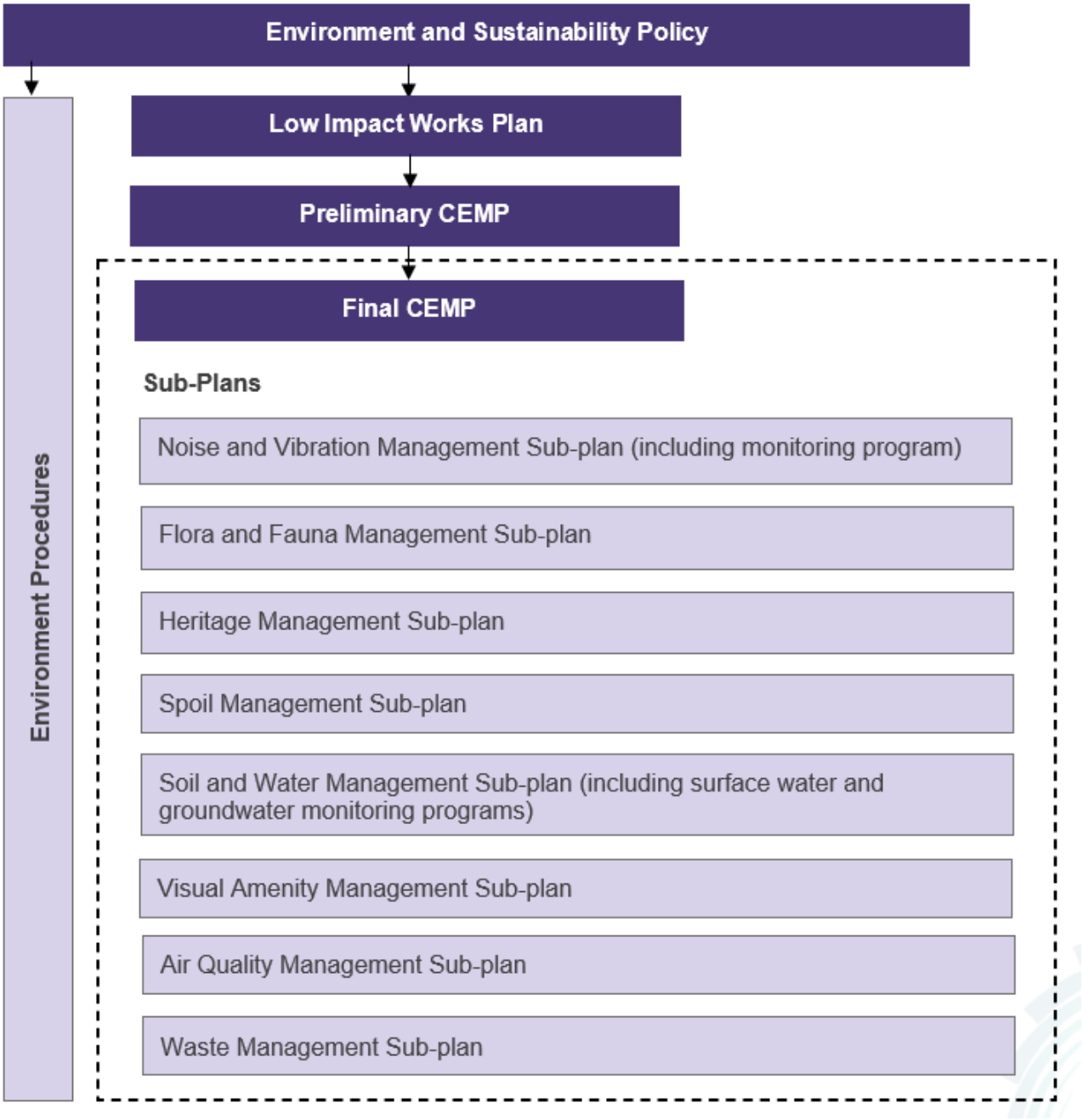


Figure 1: CEMP Framework

1.4. Consultation and approval

Reflecting the requirements of Conditions A6 and C5, there are no stakeholder consultation requirements associated with the preparation of this Sub-plan.

As nominated in the Phasing Report, this Sub-plan does not require the Planning Secretary's approval will be endorsed by the ER as being in accordance with the conditions of approval and all relevant undertakings made in the EIS and Submissions Report. The CEMP, Sub-plans and monitoring programs will be submitted to the ER no later than one month before the relevant construction phase.

Construction will not commence until the CEMPs, Sub-plans and monitoring programs have been approved by the Planning Secretary or endorsed by the ER (whichever is applicable). The CEMPs, Sub-plans and monitoring programs, as approved by the Planning Secretary or endorsed by the ER (whichever is applicable), including any minor amendments approved by the ER, will be implemented for the duration of the Project. In accordance with the Sydney Metro Phasing Report, construction of a phase will not commence until the CEMP and CEMP Sub-plans for that phase have been approved by

the Planning Secretary or endorsed by the ER upon nomination by the Planning Secretary (whichever is applicable).

1.5. Sub-plan structure

Table 4 outlines the Sub-plan structure.

Table 4: Sub-plan structure

Part	Details
Part A: Overview	▪ Project overview ▪ Legal and other requirements ▪ People and collaboration ▪ Existing environment ▪ Environmental aspects and impacts ▪ Environmental control measures ▪ Compliance management ▪ Review and improvement
Part B: Implementation Systems and Tools	This section summarises the systems and tools that will be implemented to achieve compliance with the Infrastructure Approvals, REMMs, CEMF and EPL.
Part C: Annexure	Further documents and information that support this Sub-plan include: ▪ Appendix A – Environmental Procedures

2. Project overview

2.1. Background

Sydney Metro West a new 24-kilometre metro line that will connect Greater Parramatta with the Sydney CBD via stations at Westmead, Parramatta, Sydney Olympic Park, North Strathfield, Burwood North, Five Dock, The Bays, Pyrmont and Hunter Street (Sydney CBD).

The planning process for Sydney Metro West was assessed as a staged infrastructure application under section 5.20 of the *Environment Planning and Assessment Act 1979* (EP&A Act).

Stage 1 of the development, the Sydney Metro West Concept and major civil construction work for Sydney Metro West between Westmead and The Bays (SSI-10038 Schedule 2), was approved on 11 March 2021 and includes:

- Construction of a new passenger rail infrastructure between Westmead and The Bays, including:
  - Tunnels, stations (including surrounding areas) and associated rail facilities
  - Stabling and maintenance facilities (including associated underground and overground connections to tunnels)
- Modification of existing rail infrastructure, including stations and surrounding areas
- Ancillary development.

Stage 2 of the planning approval process (this Project) includes all major civil construction work including station excavation (at the Pyrmont Station and Hunter Street Station (Sydney CBD) construction sites) and tunnelling between The Bays and Sydney CBD (Figure 2).

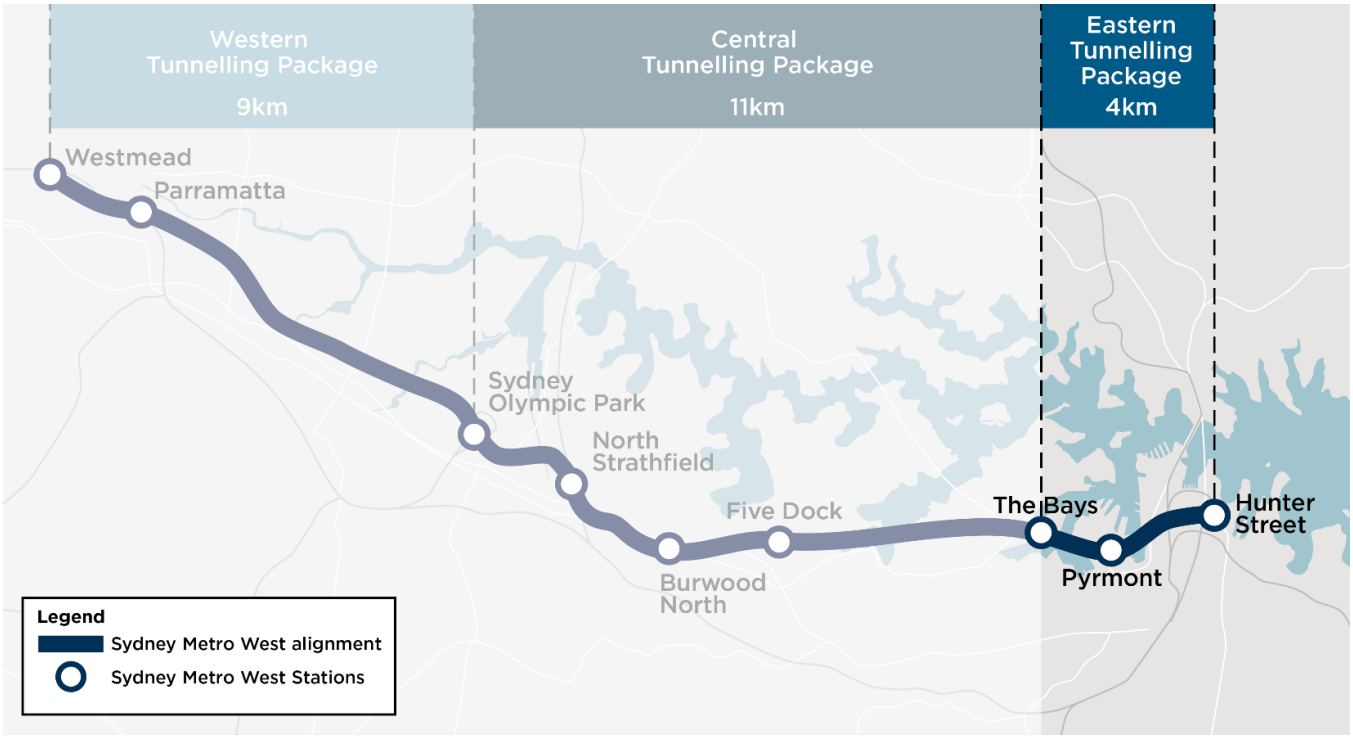


Figure 2: Overview of the Sydney Metro West alignment

2.2. Project scope

The ETP Works (construction) involves the delivery of:

- Enabling works such as demolition, utility supply to construction sites, utility adjustments and modifications to the existing transport network
- Mined crossover cavern construction
- 4.2 km of TBM tunnel excavation, 650m of mined tunnels and 12 cross passage excavation, from The Bays to Sydney CBD
- Excavation for two new underground metro stations at Pyrmont and Hunter Street
- Construction of a turnback, crossover tunnels and caverns at the eastern end of the tunnel section

- A concrete segment facility for use during construction located at Eastern Creek (outside of the scope of this Sub-plan).

2.3. Project phasing

Reflecting the outcomes of a detailed environmental risk assessment, the ETP Works will be delivered through a phased approach. This approach, detailed in the Phasing Report, includes Low Impact Works as defined under the SSI 19238057 Infrastructure Approval and the activity-based phases for construction (Table 5). Additional details on the phasing of construction activities at each worksite is provided in Table 5.

Table 5: Overview of ETP Works phasing

Phase	Description	Indicative timing	Environmental documentation	Consultation and approvals
Low Impact Works	Activities defined as Low Impact Works under SSI 19238057 Infrastructure Approval, including survey work, investigations, utility relocations, installation of environmental controls and initial demolition works	Project award November 2022 to May 2023	▪ Low Impact Works Plan ▪ Low Impact Works DNVIS	▪ ER endorsement
Preliminary Works	Including works within the existing Hunter Street East acoustic shed, and critical enabling works which are required to be conducted outside of standard hours	March to May 2023	▪ Preliminary CEMP ▪ Environmental Procedures ▪ Hunter Street East acoustic shed works DNVIS ▪ Project-wide Out of Hours Works DNVIS	▪ Stakeholder consultation (refer to Section 1.4) ▪ ER endorsement
Tunnelling, Excavation and Associated Works (addressed in this Sub-plan)	Including the Preliminary Works (not completed prior to approval of the final CEMP), demolition of existing industrial premises, site establishment, piling and shaft excavation, tunnelling, and decommissioning	May 2023 onward	▪ CEMP ▪ Sub-plans ▪ Environmental Procedures ▪ DNVISs (TBA)	▪ Stakeholder consultation ▪ ER endorsement ▪ DPHI approval (as determined by the Phasing Report)

Table 6: Overview of ETP Works by worksite and work phase

Worksite	Site condition at handover to JCG	Low Impact Works	Preliminary Works	Final CEMP
Project wide design survey and investigations	▪ N/A	▪ Survey control, instrumentation and monitoring including installation of benchmarks and installation of optical survey targets ▪ Geotechnical drilling (locations to be confirmed in Environmental Control Maps)	▪ Survey control, instrumentation and monitoring including installation of extensometers and piezometers (outside of standard construction hours) ▪ Geotechnical drilling (OOHW)	▪ N/A
The Bays	▪ Existing Central Tunnelling Package (CTP) Worksite ▪ Existing shaft (30 metres in depth) ▪ Existing high voltage construction power supply conduits ▪ Existing temporary buildings	▪ Installation of environmental controls ▪ Use of existing offices and amenities for start-up ▪ Secure site ▪ Establishment of pedestrian bridge over site access road	▪ N/A	▪ Establishment of additional temporary offices amenities and car parking ▪ Establish high voltage power supply and water supply from existing Central Tunnelling Package substation (including trenching) ▪ Nozzle enlargements and TBM launch stub tunnels ▪ TBM assembly, launch and tunnelling support works from an existing shaft ▪ Cross passage construction ▪ Segment storage, temporary Water Treatment Plant (WTP) and Slurry Treatment Plant (STP) ▪ Principal spoil handling facility for ETP Works
Pyrmont West	▪ Existing buildings: – 26-32 Pyrmont Bridge Road, Pyrmont (five stories including two basement levels)	▪ Establish portable amenities ▪ Initial demolition works including: – Hazmat investigation and structural investigation – Establishment of site security and hoardings – Establishment of truck access – Demolition work (soft strip only)	▪ Utility adjustment works, including: – Appropriately 20m of trenching in the northern footpath of Pyrmont Bridge Road (day shift) – Approximately 50m of trenching in Paternoster Row (day shift)	▪ Establish site including new construction access driveways, site hoardings, instrumentation and monitoring ▪ Utility works, including establishment of temporary construction services, investigation and protection of existing assets, and

Worksite	Site condition at handover to JCG	Low Impact Works	Preliminary Works	Final CEMP
		▪ Five archaeological test trenches and, if triggered, salvage excavations ▪ Prepare archival recordings (subject to access)	– Removal of overhead cabling from the northern footpath of Pyrmont Bridge Road (one OOHW shift) ▪ Adjustment of property utility connections	decommissioning of redundant assets (including trenching) ▪ Demolition of existing buildings ▪ Archaeological monitoring during basement slab removal and investigations (if required) ▪ Establishment and use of temporary offices and amenities ▪ Excavation of temporary shaft within the station shaft footprint ▪ Installation of acoustic shed with gantry crane and steel bridging deck for excavation of station shaft, pedestrian and service adits and spoil handling for cross over cavern ▪ Permanent concrete lining of cavern and adit connections ▪ Installation of acoustic shed will support material handling outside standard hours of work
Pyrmont East	▪ Existing buildings – 37-69 Union St, Pyrmont (four stories with no basement)	▪ Establish portable amenities ▪ Initial demolition works including: – Hazmat investigation and structural investigation – Establishment of site security and hoardings – Establishment of truck access – Demolition work (soft strip only) ▪ Detailed Site Investigation ▪ Street tree removal	▪ Detailed Site Investigation ▪ Adjustment of property utility connections	▪ Establish site including new construction access driveways, site hoardings, instrumentation and monitoring ▪ Decommissioning of existing electricity kiosk ▪ Utility works, including establishment of temporary construction services, investigation and protection of existing assets, and decommissioning of redundant assets (including trenching) ▪ Establishment of high voltage power supply (including trenching)

Worksite	Site condition at handover to JCG	Low Impact Works	Preliminary Works	Final CEMP
				▪ Demolition of existing buildings ▪ Contamination management based on DSI ▪ Establishment and use of temporary offices and amenities ▪ Excavation of temporary shaft within the station shaft footprint ▪ Installation of acoustic shed with gantry crane and steel bridging deck for excavation of station shaft and cavern ▪ Permanent concrete lining of station cavern and nozzle enlargements ▪ Installation of acoustic shed will support material handling outside standard hours of work
Hunter Street West	▪ Existing buildings – 7-13 Hunter St, Sydney (9 Hunter St) (21 stories including one basement level) – 5 Hunter St, Sydney (304-408 George St, Sydney) (16 stories, including two basement levels) – 298-302 George St, Sydney (16 stories, including one basement level) – 312 George St, Sydney (one story with no basement) – 314-318 George St, Sydney (nine stories, including one basement level) – Heritage building at 296 George St directly (adjacent to Hunter Street West site)	▪ Establish portable amenities ▪ Archaeological investigations of DeMestre Place (if access dates allow) ▪ Initial demolition works including: – Hazmat investigation and structural investigation – Establishment of site security and hoardings – Establishment of truck access – Demolition work (soft strip only) ▪ Demolition soft strip ▪ Prepare archival recordings (subject to access)	▪ Establish construction access driveways at the Hunter Street East site and the Hunter Street West site ▪ Utility investigation potholes ▪ Adjustment of property utility connections	▪ Protection, adjustment and decommissioning of utility services (including trenching) ▪ Temporary services investigation and installation at DeMestre Place ▪ Relocate street lighting pole to allow site access ▪ Establish site including new construction access driveways, site hoardings, instrumentation and monitoring ▪ Demolition of existing buildings ▪ Archaeological monitoring during basement slab removal and investigations (if required) ▪ Establishment and use of temporary offices and amenities ▪ Excavation of station access shaft

Worksite	Site condition at handover to JCG	Low Impact Works	Preliminary Works	Final CEMP
Hunter Street East	▪ Site hoarding ▪ Existing acoustic shed, spoil handling facilities and truck access ▪ Existing excavation within acoustic shed (approximately 5 metres below road level) ▪ Existing temporary WTP and high voltage power supply ▪ Existing temporary office and amenities ▪ Existing buildings: – 28-34 O'Connell St, Sydney (19 stories, including three basement levels) – 44-48 Hunter St, Sydney (16 stories, including one basement level) – 37 Bligh St, Sydney (16 stories, including one basement level) – 33 Bligh St, Sydney (steel shed, appropriately 20m in height)	▪ Use of existing offices and amenities ▪ Maintenance of existing temporary WTP ▪ Internal temporary fit-out within the existing Hunter St East acoustic shed: – Reticulate high voltage power supply ready for decline excavation – Site adjustments within the acoustic shed to facilitate the high voltage construction power reconfiguration – Establish (including assembly) road header, dust scrubber, shotcrete and bolting equipment – Site establishment within existing offices and amenities ▪ Initial demolition works including: – Hazmat investigation and structural investigation – Establishment of site security and hoardings – Establishment of truck access – Demolition work (soft strip only) ▪ Street tree trimming/removal ▪ Prepare archival recordings (subject to access)	▪ Preliminary excavation within the existing acoustic shed (works to be conducted 24 hours each day and 7 days each week) – Temporary declines using a road header – Ventilation-duct bores – Ventilation adits using a Brock excavator – Approximately 50 truck movements per day (conducted in accordance with a Construction Traffic Management Plan) – Use of existing WTP (subject to the inclusion of alternative discharge criteria in the EPL) ▪ Load-out of excavated spoil ▪ Utility investigation potholes ▪ Adjustment of property utility connections	▪ Upgrade of high voltage power supply (including trenching) ▪ Excavation of station cavern, nozzle enlargements and turnbacks from within an existing acoustic shed ▪ Establish site including new construction access driveways, site hoardings, instrumentation and monitoring ▪ Tree trimming and removal ▪ Demolition of existing high-rise buildings and excavation of stage 1 of station access shaft ▪ Archaeological monitoring during basement slab removal and investigations (if required) ▪ Backfill of temporary decline prior to decommissioning ▪ Demolition of existing acoustic shed and amenities and excavation of stage 2 of station access shaft ▪ Concrete lining of station cavern and turnbacks ▪ TBM disassembly and retrieval
Eastern Creek	▪ Existing temporary precast facility	▪ N/A (site is not within the scope of SSI 19238057)	▪ N/A (site is not within the scope of SSI 19238057)	▪ N/A (site is not within the scope of SSI 19238057)

3. Legal and other requirements

3.1. Legislation

This Sub-plan has been prepared in accordance with the:

- EP&A Act
- Protection of the Environment Operations Act 1997 (POEO Act)
- Protection of the Environment Operations (General) Regulation 2009
- Protection of the Environment Operations (Clean Air) Regulation 2010
- National Greenhouse and Energy Reporting Act 2007.

Additional details on legislative requirements are provided in Section 3.3 of the CEMP.

3.2. Guidelines

The main guidelines, specifications and policy documents of relevance to this Sub-plan include:

- AS/NZS ISO 14001:2014 – Environmental Management Systems
- Guidance on the assessment of dust from demolition and construction (UK Institute of Air Quality Management (IAQM) 2014)
- Managing particles and improving air quality in NSW (EPA 2013).

3.3. Other environmental requirements

Other environmental requirements relevant to managing air quality impacts include:

- SSI 19238057 Infrastructure Approval (dated 24 August 2022) and relevant conditions of the Sydney Metro West Concept Schedule 2 of SSI 10038 Infrastructure Approval (dated 11 March 2021) (Planning Approvals), including Modification 1 determined in April 2023, Modification 2 determined in October 2023 and Modification 3 determined in November 2024
- EPL
- Sydney Metro West – Stage 2 – Phasing Report
- Sydney Metro CEMF
- EIS and the Submissions Report, including the REMMs
- Contractual requirements including the ETP Deed and General and Particular Specifications.

In addition, the ETP works will be assessed by the Infrastructure Sustainability Council (ISC) IS V1.2 Rating. Air quality requirements of the relevant credits (DIS-4 Air Quality) are summarised in Table 7, including cross-references to where the requirement is addressed in this AQMP. Additional details on the ISC requirements, including the target level for the DIS-4 credit, are provided in the Sustainability Management Plan. In the event that level 2 or level 3 of the DIS-4 credit is targeted by the Project, this Sub-plan will be reviewed and, if necessary revised to support the desired outcome.

Table 7: ISC Air Quality Credit

ISC Credit	Level	Criteria	Reference
DIS-4 Air Quality	1	Measures to minimise adverse impacts to local air quality during construction and operation have been identified and implemented.	Section 7
	1	Monitoring of air emissions and/or air quality is undertaken at appropriate intervals and in response to complaints during construction	Appendix A
	2	Monitoring and modelling demonstrates no recurring or major exceedances of air emission or air quality goals.	Element 2 Appendix A
	3	Monitoring and modelling demonstrates no exceedances of air emission or air quality goals.	Element 2 Appendix A

4. People and collaboration

4.1. Our team

The roles and responsibilities of key JCG personnel with respect to air quality management are detailed in Table 8.

Table 8: Key roles, authority and responsibility

Element	Description
Project Director	
Role	▪ Manage the delivery of the Project in accordance with the ETP Deed
Authority	▪ Hold the authority to direct personnel or subcontractors to carry out actions to avoid or minimise unintended environmental impacts ▪ Act as the Contractor's Representative
Responsibility	▪ Accountable for the environmental and sustainability performance of the Project ▪ Allocate sufficient resources to achieve environmental and approvals compliance
Minimum Skill Level	▪ Tertiary qualification in Engineering or other associated disciplines ▪ Relevant experience on similar projects and significant project delivery experience
Project Interface	▪ Lead the JCG Senior Leadership Team and interface with Sydney Metro team
Environment, Approvals and Sustainability Director	
Role	▪ Manage the delivery of environment and sustainability requirements
Authority	▪ Authority to produce any correspondence and documentation necessary for approvals, and environmental and sustainability management ▪ Authority to take all reasonable steps to achieve environmental compliance
Responsibility	▪ Accountable for environmental and sustainability performance ▪ Lead the creation of a consultative and proactive culture that ensures environmental compliance and 'No Harm' as a driver of work behaviour ▪ Lead and manage the development and implementation of a risk-based EMS ▪ Ensure environmental and sustainability participation at Value Engineering Workshops ▪ Provide specialist air quality advice to the Project Director and other functional managers to facilitate design and construction ▪ Oversee the preparation of environmental assessments on design changes and obtain any necessary planning approvals ▪ Oversee the reporting, investigation and response to environmental incidents or complaints ▪ Liaise with Sydney Metro and external stakeholders on performance and continual improvement ▪ Engage with the Environment Protection Authority (EPA) on EPL compliance
Minimum Skill Level	▪ Tertiary qualification in Environmental Engineering, Science, Sustainability or other associated discipline ▪ Recent relevant experience in environmental management on a similar project ▪ Minimum of 15 years' environmental management experience and 5 years' sustainability management
Project Interface	▪ Member of the JCG Senior Leadership Team and interface with Sydney Metro West Environment and Sustainability team
Environment Manager	
Role	▪ Manage day-to-day environmental compliance, including air quality management
Authority	▪ Authority to stop works where a Hold Point has not been adequately released
Responsibility	▪ Assist the Environment, Approvals and Sustainability Director in the creation of a consultative and proactive culture ▪ Manage the implementation of the CEMP, including air quality management ▪ Deliver the environmental induction and training program

Element	Description
	▪ Undertake environmental site monitoring and inspections ▪ Facilitate site inspections with Sydney Metro, the ER and the Acoustic Advisor (AA) ▪ Report and assist in incident management
Minimum Skill Level	▪ Tertiary qualification in Environmental Engineering, Science, Sustainability or other associated disciplines ▪ Minimum of 8 years' relevant experience
Project Interface	▪ Attend environment, sustainability, design and construction meetings
Environmental Advisor	
Role	▪ Support day-to-day environmental compliance, including air quality management
Authority	▪ Authority to stop works where a Hold Point has not been adequately released
Responsibility	▪ Assist the Environment Manager in the creation of a consultative and proactive culture ▪ Support the implementation of the CEMP, including air quality management ▪ Deliver the environmental induction and training program ▪ Undertake environmental site monitoring and inspections ▪ Facilitate site inspections with Sydney Metro, the ER and the Acoustic Advisor (AA) ▪ Report and assist in incident management
Minimum Skill Level	▪ Tertiary qualification in Environmental Engineering, Science, Sustainability or other associated disciplines ▪ Minimum of 2 years' relevant experience
Project Interface	▪ Attend environment, sustainability, design and construction meetings
Site Supervisor	
Role	▪ Assist the Project Director in implementing the requirements of this Sub-plan
Authority	▪ Authority to stop works where a Hold Point has not been adequately released
Responsibility	▪ Support the implementation of the CEMP, including air quality controls ▪ Deliver the environmental inductions where required ▪ Undertake environmental inspections ▪ Report and assist in incident management
Minimum Skill Level	▪ Qualification in relevant trade ▪ Minimum of 5 years' relevant experience
Project Interface	▪ Attend construction meetings

4.2. Collaboration with Sydney Metro, the ER and the AA

The Environment, Approvals and Sustainability team will openly communicate and consult with Sydney Metro, the ER and the AA. This will include:

- Working collaboratively to ensure appropriate strategies are identified and implemented
- Holding regular meetings with the Sydney Metro Environment Team to provide updates on the construction process and receive any feedback
- Facilitating regular inspections with Sydney Metro, the ER and the AA
- Recording and responding appropriately to environmental complaints and enquiries and reporting them to Sydney Metro and other stakeholders including the ER, the AA and the EPA in a timely manner
- Providing comprehensive information to manage incidents including details on preventative actions to avoid re-occurrence.

5. Existing environment

5.1. Climate and meteorology

Long-term temperature and rainfall data from the Bureau of Meteorology's Sydney Observatory Hill (Station no. 066062) shows that the Project area experiences warm and wet summers, with mean daily maximum temperatures of approximately 26 degrees Celsius. The driest period of the year was identified as being between August and December when the average monthly rainfall ranges between 68.1 and 83.8 millimetres; below the monthly average of 101 millimetres. This period of low rainfall and/or higher temperature conditions creates the greatest potential for dust generation.

Meteorological records from the automatic weather stations operated by the DPHI at Rozelle (located near The Bays) and Randwick (located south of the CBD) were reviewed as part of the EIS.

Winds blowing from the south were most prevalent at Rozelle which suggests that receivers located to the north of the Bays worksite and the Pyrmont Station worksites have the highest potential to be affected by winds blowing from ETP worksites.

At the DPHI Randwick station, winds blowing from the west and east-northeast were most common. Based on meteorological trends from the Randwick station, receivers to the east and west-southwest have the highest risk of experiencing winds blowing from the Hunter Street Station worksites.

5.2. Existing air quality

Air quality data sourced from DPHI monitoring stations at Rozelle, Randwick and Cook and Phillip Sydney CBD for the 2016 to 2020 calendar years are summarised in Table 9. For the Cook and Phillip Sydney CBD station, data are only presented for 2020 with this station commencing monitoring in September 2019.

The data shows that existing concentrations of air pollutants were generally below the EIS air quality impact assessment criteria during the 2016 to 2020 reporting periods for carbon monoxide, nitrogen dioxide and sulfur dioxide. However, exceedances frequently occurred for particulate matter (PM) which were likely attributed to widespread drought conditions (particularly in 2017 and 2018), hazard reduction burning, and an unprecedented bushfire season in late 2019 and early 2020.

Table 9: Background air quality monitoring data (2016 – 2020)

Pollutant	Averaging period	Impact Assessment Criteria	Rozelle					Randwick					Sydney CBD
			2016	2017	2018	2019	2020	2016	2017	2018	2019	2020	2020
PM_{10} (µg/m^3)	Max 24-hour	50	**59**	**54**	**88**	**143**	**114**	44	**56**	**96**	**128**	**137**	**131**
	95th percentile 24-hour	-	20	31	31	49	34	32	32	36	52	37	30
	Annual	30	17	18	-	23	18	18	19	21	24	20	16
$PM_{2.5}$ (µg/m^3)	Max 24-hour	25	**49**	**36**	19	**102**	**87**	-	-	**31**	**95**	**115**	**113**
	95th percentile 24-hour	-	14	13	14	28	18	-	-	14	27	16	17
	Annual	8	7.4	7.2	-	**10.3**	7.5	-	-	7.6	**10.8**	7.6	7.8
Carbon monoxide (mg/m^3)	Max 1-hour	30	2	1	1	6.5	4.1	-	-	-	-	-	4.4
Nitrogen dioxide (µg/m^3)	Max 1-hour	246	94	115	107	185	88	89	77	75	105	76	94
	Annual	62	21	21	21	21	16	15	13	13	14	10	27
Sulfur dioxide (µg/m^3)	Max 1-hour	570	52	63	79	91	46	89	76	55	83	40	54
	Annual	60	3	3	3	3	3	3	3	3	3	3	3

NOTE: Exceedances of the relevant air quality impact assessment criteria are shown in bold. A hyphen indicates that the data are either not available or not measured.

5.3. Local emission sources

The contributions of anthropogenic sources to pollutant levels in the Sydney Region were determined by the EPA (2012) to be:

- Domestic activities (such as wood-fired home heaters and lawn mowing) which are major contributors to the total emissions of PM_{10}, $PM_{2.5}$, carbon monoxide and volatile organic compounds
- Road traffic and off-road mobile equipment (such as construction plant and boats) which are major contributors to the total emissions of carbon monoxide and nitrogen dioxide, while making a smaller contribution to total emissions of PM_{10}, $PM_{2.5}$ and volatile organic compounds
- Industrial and commercial activities which are major contributors to the total emissions of PM_{10}, while making a smaller contribution to total emissions of $PM_{2.5}$, nitrogen dioxide, and volatile organic compounds.

In recent years, intense drought conditions and bushfires have also contributed to elevated pollutant concentrations, and in particular, PM levels.

6. Environmental aspects and impacts

6.1. Construction activities

Key aspects of the Project that could result in adverse air quality impacts include:

- Tree trimming and removal
- Protection, adjustment and decommissioning of utility services
- Excavation works (temporary declines, station caverns and shafts, etc)
- Establishment of worksites (offices, amenities, driveways and site hoardings)
- Demolition of existing buildings
- Spoil handling, storage and transport.

Refer also to the Aspects and Impacts Register included in Appendix D of the CEMP.

6.2. Impacts

Dust generated from the excavation, handling, placement and compaction of soils and from exposed surfaces and stockpiled materials would be the key air quality risk associated with the ETP Works. Using guidance from the UK IAQM methodology, the EIS identified the unmitigated risk ratings associated with key construction activities at each ETP worksite (Table 10).

While a number of construction activities were assessed as high risk, the potential dust impact will be temporary in nature and substantially reduced with the implementation of standard mitigation measures identified in Section 7.

Table 10: Dust emissions – unmitigated risk rating

Construction activity	ETP Worksite	Potential unmitigated risk rating		
		Nuisance	**Human health**	**Ecological**
Demolition of existing buildings and structures	The Bays	No risk	No risk	No risk
	Pyrmont Station	Medium	Medium	No risk
	Hunter Street Station	Medium	Medium	Negligible
Earthworks	The Bays	Medium	Low	**High**
	Pyrmont Station	Low	Low	No risk
	Hunter Street Station	**High**	**High**	Negligible
Construction of acoustic sheds and other temporary buildings and structures	The Bays	Negligible	Negligible	Low
	Pyrmont Station	Low	Low	No risk
	Hunter Street Station	Low	Low	Negligible
Transport and handling of construction materials on-site	The Bays	Low	Low	**High**
	Pyrmont Station	**High**	**High**	No risk
	Hunter Street Station	**High**	**High**	Negligible

7. Environmental control measures

Mitigation and management measures that will be implemented during construction are detailed in Table 11 and are consistent with the Infrastructure Approvals, EIS, Submissions Report and the EPL.

Table 11: Environmental control measures

ID	Control Measures	Responsibility	Deliverables	Timing	Reference
A1	Regularly wet-down exposed and disturbed areas including stockpiles with water cannons, shrouds or hoses, especially during dry weather.	Site Supervisor Environmental Advisor	Site Diary entries Environmental Inspection reports	Construction	REMM AQ1
A2	Adjust the intensity of activities based on measured and observed dust levels and weather forecasts.	Site Supervisor Environmental Advisor	Site Diary entries Environmental Inspection reports	Construction	REMM AQ1
A3	Minimise the amount of materials stockpiled and position stockpiles away from surrounding receivers.	Site Supervisor Environmental Advisor	Site Diary entries Environmental Inspection reports	Construction	REMM AQ1
A4	Regularly water haul roads and exposed areas and ensure that all loads are covered.	Site Supervisor Environmental Advisor	Site Diary entries Environmental Inspection reports	Construction	REMM AQ1
A5	Regularly inspect and as necessary, remove any loose materials tracked along haulage routes.	Site Supervisor Environmental Advisor	Site Diary entries Environmental Inspection reports	Construction	REMM AQ1
A6	Regularly inspect dust emissions and apply additional controls as required.	Site Supervisor Environmental Advisor	Site Diary entries Environmental Inspection reports	Construction	REMM AQ1
A7	Implement the following relevant measures listed in the IAQM: ▪ Plan site layout so that machinery and dust causing activities are located away from receptors, as far as possible ▪ Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site ▪ Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site ▪ Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport.	Site Supervisor Environmental Advisor	Site Diary entries Environmental Inspection reports	Construction	REMM AQ1
A8	At locations where there is an acoustic shed established, install dust filtering systems on the acoustic shed exhaust such that discharged air meets the requirements of the *Protection of the Environment Operations (Clean Air) Regulation 2010* (as amended).	Project Manager	Detailed design drawings	Pre-construction	REMM AQ1

ID	Control Measures	Responsibility	Deliverables	Timing	Reference
A9	Maintain and operate plant and equipment in a proper and efficient manner.	Site Supervisor	Plant and equipment maintenance records	Construction	REMM AQ2
A10	Conduct visual inspections of emissions from plant as part of pre-acceptance checks.	Site Supervisor Environmental Advisor	Environmental Inspection reports	Construction	REMM AQ2
A11	Switch off plant and equipment when not in-use.	Site Supervisor	Environmental Inspection reports	Construction	REMM AQ2
A12	Avoid diesel or petrol-powered generator use wherever possible with mains electricity or battery powered equipment used wherever practicable.	Project Manager	Detailed design drawings	Pre-construction Construction	REMM AQ2
A13	Minimise the extent of opened and disturbed contaminated soil at any given time.	Site Supervisor	Environmental Inspection reports	Construction	REMM AQ3
A14	Apply temporary coverings or odour supressing agents to excavated areas where appropriate.	Site Supervisor	Environmental Inspection reports	Construction	REMM AQ3
A15	Conduct regular monitoring during excavation to verify that no offensive odours are being detected beyond the site boundary (refer to Table 14).	Site Supervisor Environmental Advisor	Site Diary entries Environmental Inspection reports	Construction	REMM AQ3
A16	Mud, splatter, dust and other material likely to fall from or be cast off the wheels, underside or body of any vehicle, trailer, motorised plant and equipment leaving an ETP worksite, will be removed to the greatest extent practicable.	Site Supervisor Environmental Advisor	Site Diary entries Environmental Inspection reports	Construction	Best practice
A17	At vehicle access points from ETP worksites, washdown bays, rumble grids and/or stabilised laybacks or other solutions will be constructed, maintained and stabilised to minimise vehicles tracking materials onto public roads as much as is reasonable and feasible	Site Supervisor Environmental Advisor	Site Diary entries Environmental Inspection reports	Construction	Best practice
A18	Implement the following measures to minimise the generation of dust during demolition works: ▪ Soft strip the inside of buildings prior to demolition, retaining walls and windows where possible to provide a dust screen ▪ Ensure effective water suppression during demolition, including hand held sprays on surfaces and equipment where safe to do so ▪ Install enclosures around drop chutes where reasonable and feasible	Site Supervisor Environmental Advisor	Site Diary entries Environmental Inspection reports	Construction	Best practice

ID	Control Measures	Responsibility	Deliverables	Timing	Reference
	▪ Consider the use of shears/pulverisers in preference to hammers.				

8. Compliance management

8.1. Hold points

The activity detailed in Table 12 is recognised as a hold point and will not proceed without objective review and approval by the nominated authority.

Table 12: Hold points

Hold point	Sub-plan Reference	Release of Hold Point	Responsibility
Wind forecast to exceed 50km/hr	Air Quality Management Procedure (Appendix A)	Confirmation that earthworks are restricted, vehicle movements on unsealed surfaces are minimised and stockpiles are covered or sealed	Environmental Advisor Site Supervisor

8.2. Complaints

Environmental complaints will be recorded and managed in accordance with the process detailed in Section 3.7 of the CEMP.

9. Review and improvement

9.1. Continual improvement

The continual improvement process will be undertaken in accordance with Section 3.15 of the CEMP. The intent of the process is to:

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

9.2. Sub-plan review

The processes described in Section 3.6 of the CEMP may result in the need to update or revise this Sub-plan. This will occur as needed, in accordance with Section 3.14.2 of the CEMP.

A copy of the updated Sub-plan and changes will be distributed to all relevant stakeholders in accordance with the approved document control procedure.

Part B: Implementation Systems and Tools

Part B of this Sub-plan explains how the air quality impacts of the Project will be minimised. All relevant mitigation measures from the Infrastructure Approval, REMMs, CEMF and EPL are addressed in this Section. Compliance with these requirements is required at all times to minimise the risk of unauthorised environmental harm.

Part B contains the following:

- **Expectations and Requirements:** These describe what is required of the Project to implement the objectives of the Environment and Sustainability Policy and achieve the intended environmental performance outcomes.
- **JCG Response:** These are the specific actions that will be performed to demonstrate compliance with the Elements and Requirements.
- **Responsibility:** These are the people responsible for achieving compliance with the Expectations and Requirements. The key contributor is identified in bold font.
- **Deliverables:** These are the tangible outcomes that will be produced to demonstrate compliance with the Expectations and Requirements.

Element 1. Training

Table 13: Element 1: Training

ID	Expectations/Requirements	JCG Response	Responsibility	Deliverables
1.1.	All personnel have completed an induction containing relevant environmental information before they are authorised to work on the Project	All personnel working on the Project will undertake a site induction, which will provide initial training on various environmental aspects, including air quality. It will cover: ▪ Relevant licence and approval conditions ▪ Permissible hours of work ▪ Environmental incident procedures ▪ Dust minimisation and management.	**People and Culture Director** Environment, Approvals and Sustainability Director	Induction presentation Training records
1.2.	Toolbox talks are used to reinforce key management requirements and lessons learnt	Toolbox talks on air quality requirements will be held regularly and will reinforce and reiterate information from inductions.	**Environmental Advisor** Site Supervisor	Training records

Element 2. Monitoring and reporting

Table 14: Element 2: Monitoring and reporting

ID	Expectations/Requirements	JCG Response	Responsibility	Deliverables
2.1.	Worksites are regularly inspected to ensure the adequacy of controls	Site Supervisor to undertake daily inspections of worksite to assess the adequacy and effectiveness of air quality controls. Weekly inspection of air quality management controls will be undertaken as part of joint JCG / Sydney Metro / ER / AA inspections.	**Environmental Advisors** Site Supervisor	Site Diary entries Environmental Inspection reports
2.2.	Monitoring is performed to establish baseline data and ensure compliance is maintained	Monitoring is carried out to establish pre-construction benchmarks, confirm compliance, and to provide early indication of potential adverse impacts to the environment or community. Results of monitoring will be used for: ▪ The evaluation of performance relative to legal, regulatory, contract, permit, licence and other commitments ▪ The prompt identification and correction of incidents or possible incidents ▪ Providing the basis of internal and external reporting ▪ Driving continual improvement. Refer to the Air Quality Management Procedure (Appendix A) for additional details on air quality monitoring.	**Environmental Advisors** Environmental Coordinator	Monitoring records
2.3.	Monitoring records are maintained	The results of air quality monitoring will be documented and published on the John Holland website where required, in accordance with the POEO Act and Regulations.	**Environmental Advisors** Environmental Coordinator	Environmental Inspection Reports

Element 3. Auditing, review and improvement

Table 15: Element 3: Auditing, review and improvement

ID	Expectations/Requirements	JCG Response	Responsibility	Deliverables
3.1.	Review this Sub-plan to ensure compliance with the EPL	This Sub-plan has been updated in accordance with the process outlined in Section 3.14.2 of the CEMP to include relevant conditions of the EPL.	**Environment, Approvals and Sustainability Director**	Updates to this Sub-plan if required during delivery
3.2.	Audits are undertaken to ensure compliance with the requirements of this Sub-plan	Audits will be performed in line with Section 3.12 of the CEMP, and this Sub-plan will be updated if required.	**Environment, Approvals and Sustainability Director**	Audit Reports
3.3.	All non-compliances are reported and actioned	An air quality non-compliance can generally be defined as a failure to comply with the conditions of the SSI 19238057 Infrastructure Approval or the EPL. Where a non-compliance is also an environmental incident, JCG will implement the relevant notification procedures for both non-compliances and incidents (refer to Sections 3.10 and 3.12.2 of the CEMP). Where a non-compliance is raised as part of an audit or an incident or complaint investigation, the audit, incident or complaint report may be used to close out the non-compliance; it is not necessary to raise a separate non-compliance report. Procedures for corrective actions are addressed in Section 3.12.2 of the CEMP.	**Environment, Approvals and Sustainability Director** Environmental Advisors	Corrective Action Reports Complaint Reports Incident Reports Audit Reports

Element 4. Project specific requirements

Infrastructure Approval (SSI 19238057)

Table 16: Infrastructure Approval (SSI 19238057)

ID	Requirements (Conditions)	JCG Response	Responsibility	Deliverables	Timing
D1	All reasonably practicable measures must be implemented to minimise the emission of dust and other air pollutants during construction.	Refer to Table 11 and Appendix A (Air Quality Management Procedure)	**Environment, Approvals and Sustainability Director** Environmental Advisors Project Managers Site Supervisors	Site Diary entries Environmental inspection checklists	Construction

Revised Environmental Mitigation Measures

Table 17: Revised Environmental Mitigation Measures

ID	Requirements (REMM)	JCG Response	Responsibility	Deliverables	Timing
AQ1	The following best-practice dust management measures would be implemented during all construction work: ▪ Regularly wet-down exposed and disturbed areas including stockpiles, especially during dry weather ▪ Adjust the intensity of activities based on measured and observed dust levels and weather forecasts ▪ Minimise the amount of materials stockpiled and position stockpiles away from surrounding receivers ▪ Regularly water haul roads and exposed areas and ensure that all loads are covered ▪ Regularly inspect and as necessary, remove any loose materials tracked along haulage routes ▪ Regularly inspect dust emissions and apply additional controls as required ▪ Implement all relevant measures listed in the UK IAQM corresponding to the highest level of risk determined around each construction site. ▪ At locations where there is an acoustic shed established, dust filtering systems will be installed on the acoustic shed exhaust.	Refer to Table 11 and Appendix A (Air Quality Management Procedure)	**Project Manager** Site Supervisor Environmental Advisor	Site Diary entries Environmental Inspection reports	Construction
AQ2	Exhaust emissions from the combustion of fossil fuels during construction ▪ Maintaining plant and equipment in a proper and efficient manner ▪ Conducting visual inspections of emissions from plant as part of pre-acceptance checks ▪ Switching off plant and equipment when not in-use ▪ Avoiding diesel or petrol-powered generator use wherever possible with mains electricity or battery powered equipment used wherever practicable	Refer to Table 11 and Appendix A (Air Quality Management Procedure)	**Project Manager** Site Supervisor Environmental Advisor	Plant and equipment maintenance records Detailed design drawings Environmental Inspection reports	Pre-construction Construction
AQ3	The following best-practice odour management measures would be implemented during relevant construction work: ▪ The extent of opened and disturbed contaminated soil at any given time would be minimised ▪ Temporary coverings or odour supressing agents would be applied to excavated areas where appropriate	Refer to Table 11 and Appendix A (Air Quality Management Procedure)	**Site Supervisor** Environmental Advisor	Site Diary entries Environmental Inspection reports	Construction

ID	Requirements (REMM)	JCG Response	Responsibility	Deliverables	Timing
	▪ Regular monitoring would be conducted during excavation to verify that no offensive odours are being detected beyond the site boundary.				

Environmental Performance Outcomes

Table 18: Environmental Performance Outcomes

Key Issue	Desired Performance Outcome	Sydney Metro West Performance Outcome	Sub-plan reference
Air Quality	▪ No desired performance outcome from Secretary's Environmental Assessment Requirements	▪ Air quality impacts are minimised during construction and operation.	Refer to Table 11 and Appendix A (Air Quality Management Procedure)

Construction Environmental Management Framework

Table 19: Construction Environmental Management Framework

ID	Requirements (CEMF)	Sub-plan reference
3.5 (a)	Subject to Section 3.4(b) the Principal Contractors will prepare issue-specific environmental sub plans to the CEMP which address each of the relevant environmental impacts at a particular site or stage of the project. Issue specific sub plans will include as a minimum: i. Spoil management; ii. Groundwater management; iii. Noise and vibration management; iv. Heritage management; v. Flora and fauna management; vi. Visual amenity management; vii. Soil and water management; viii. Air quality management; and ix. Waste management.	This Sub-plan
3.6 (a)	The Principal Contractor will prepare and implement activity specific environmental procedures. These procedures should supplement environmental management sub plans, but may substitute for sub plans in agreement with Sydney Metro if a reasonable risk based justification can be made and the sub plan is not a requirement of any approval.	Appendix A (Air Quality Management Procedure)
3.6 (b)	The procedures will include: i. A breakdown of the work tasks relevant to the specific activity and indicate responsibility for each task; ii. Potential impacts associated with each task; iii. A risk rating for each of the identified potential impacts; iv. Mitigation measures relevant to each of the work tasks; and v. Responsibility to ensure the implementation of the mitigation measures.	Appendix A (Air Quality Management Procedure) Activity Method Statements Task Risk Assessments
13.1 (a)	The following air quality management objectives will apply to construction: i. Minimise gaseous and particulate pollutant emissions from construction activities as far as feasible and reasonable; and ii. Identify and control potential dust and air pollutant sources.	Section 1.2
13.2 (a) i	Principal Contractors will develop and implement an Air Quality Management Plan which will include, as a minimum: i. The air quality mitigation measures as detailed in the environmental approval documentation;	Section 7
13.2 (a) ii	The requirements of any approval and applicable licence conditions	Part B of this Sub-plan

ID	Requirements (CEMF)	Sub-plan reference
13.2 (a) iii	Site plans or maps indicating locations of sensitive receivers and key air quality / dust controls	CEMP (Appendix C)
13.2 (a) iv	The responsibilities of key project personnel with respect to the implementation of the plan	Section 4
13.2 (a) v	Air quality and dust monitoring requirements	Appendix A (Air Quality Management Procedure)
13.2 (a) vi	Compliance record generation and management	Table 14
13.2 (b)	Air quality and dust monitoring will involve the following as a minimum: i. Meteorological conditions will be monitored and appropriate responses will be organised and undertaken periodically by the Principal Contractor; ii. Regular visual monitoring of dust generation from work zones; and iii. Monitoring emissions from plant and construction vehicles to ensure they have appropriate emission controls and are being maintained correctly.	Appendix A (Air Quality Management Procedure)
13.2 (c)	The following compliance records will be kept by the Principal Contractor: i. Records of any meteorological condition monitoring; ii. Records of any management measures implemented as a result of adverse, windy weather conditions; and iii. Records of air quality and dust inspections undertaken.	Table 14

Environment Protection Licence

Table 20: Environment Protection Licence

ID	Requirements (EPL)	Sub-plan reference
L6.1	No condition in this licence identifies a potentially offensive odour for the purposes of section 12 of the Protection of the Environment Operations Act 1997. Note: Section 129 of the Protection of the Environment Operations Act 1997, provides that the licensee must not cause or permit the emission of any offensive odour from the premises but provides a defence if the emission is identified in the relevant environment protection licence as a potentially offensive odour and the odour was emitted in accordance with the conditions of a licence directed at minimising odour.	Noted.
O2.1	All plant and equipment installed at the premises or used in connection with the licensed activity: a) must be maintained in a proper and efficient condition; and b) must be operated in a proper and efficient manner.	Appendix A (Air Quality Management Procedure)Table 11: Environmental control measuresTable 11
O3.1	All activities occurring at the premises must be carried out in a manner that will minimise the generation and prevents the emission of air pollution from the premises, as much as is reasonably practicable.	Table 11 Appendix A (Air Quality Management Procedure)
O3.2	The premises must be maintained in a condition which minimises the generation and prevents the emission of air pollution from the premises, as much as is reasonably practicable.	Appendix A (Air Quality Management Procedure)
O3.3	The licensee must implement all reasonable and feasible measures to demonstrate compliance with condition O3.1 and O3.2.	Appendix A (Air Quality Management Procedure)
O3.4	Trucks entering and leaving the premises that are carrying loads of material with the potential to generate dust must be covered at all times, except during loading and unloading.	Appendix A (Air Quality Management Procedure)Table 11: Environmental control measuresTable 11
M5.1	The licensee must monitor and record temperature, humidity, wind direction, wind velocity and rainfall at either the project weather station, or through analysis of equivalent weather information obtained from the Australia Bureau of Meteorology. Monitoring must: a) be representative of each catchment area; b) commence prior to any works that may cause sediment to leave the premises; and	Appendix A (Air Quality Management Procedure)

ID	Requirements (EPL)	Sub-plan reference
	c) continue to be operated until soil disturbance activities cease at the premises and the site has been stabilised.	

Part C Annexures

Appendix A Environmental Procedures

Appendix B Environmental Representative Endorsement

HBI Healthy Buildings International Pty Ltd
A.C.N. 003 270 693 A.B.N. 39 003 270 693

Suite 2.06, Level 2
29-31 Solent Circuit
Norwest, NSW 2153

Tel: 61 (02) 9659 5433
e-mail: hbi@hbi.com.au
Web:

www.hbi.com.au

Mr [redacted] 6 June 2025
A/Director Sustainability, Environment and Planning
Metro West
Sydney Metro
Transport for NSW
PO Box K659
HAYMARKET NSW 1240 REF: 201208 (G) AQMP_Rev 3

Dear [redacted]

RE: Sydney Metro West Stage 2 – Eastern Tunnelling Package: Air Quality Management Sub-Plan (Rev 3)

I refer to Sydney Metro's (SM) submission of the following document required by Condition C1 of the Sydney Metro West – The Bays to Sydney CBD Approval (SSI 19238057) which was approved by the Department of Planning and Environment (DPE) on 24 August 2022:

- Sydney Metro West, Eastern Tunnelling Package Air Quality Management Sub-Plan Rev 3 dated 22 May 2025 (SMWSTETP-JCG-SWD-SW000-EN-PLN-002028).

It is noted that:

- The Air Quality Management Plan (AQMP Rev 0) was prepared by John Holland CPB Ghella JV (JCG) to address the requirements of Condition C1 of the Infrastructure Approval. This document was endorsed by the ER on 23 March 2023.
- Revision 3 of the AQMP is an update of previous versions as part of an annual review of management plans by JCG.
- Previous versions of the document have been reviewed by the ER.
- Sydney Metro has reviewed and commented on previous versions of the document and have no outstanding comments on this version.

Following the above reviews, the revised document is considered to have minor amendments that are consistent with the version endorsed by the ER in March 2023.

As the approved Environmental Representative for the Metro West and as required by Conditions A3 2(j) based on the above, the Air Quality Management Sub-Plan (Revision 3) is approved.

Yours sincerely

[redacted]

[redacted]

Environmental Representative – Sydney Metro West – Eastern Tunnelling Package
CC: [redacted]