

Moorebank Avenue Realignment Works

Construction Air Quality Management Plan

SSI - 10053

22 January 2025

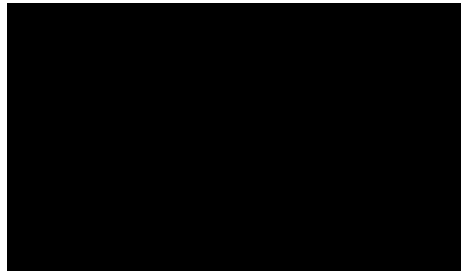
NATIONAL INTERMODAL CORPORATION MOOREBANK AVENUE REALIGNMENT WORKS

CONSTRUCTION AIR QUALITY MANAGEMENT PLAN

Author

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Approver


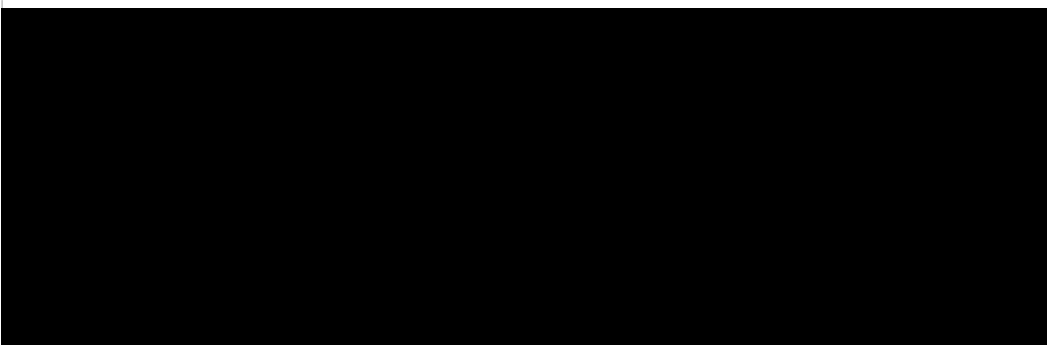


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Name	Qualification and Experience
	

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ACRONYMS AND DEFINITIONS

Acronym	Definition
AQIA	Air Quality Impact Assessment
CAQMP	Construction Air Quality Management Plan
CBMP	Construction Biodiversity Management Plan
CCS	Community Communication Strategy
CCMP	Construction Contamination Management Plan
CEMP	Construction Environmental Management Plan
CoA	Conditions of Approval
Construction	Includes all work required to construct the Project as described in the EIS and RtS (NSW CoA A1) including commissioning trials of equipment and temporary use of any part of the Project but excluding Low Impact Work which is carried out or completed before approval of the CEMP.
CSWMP	Construction Soil and Water Management Plan
CTTMP	Construction Traffic and Transport Management Plan
CWRMP	Construction Waste and Resources Management Plan
DAWE	Department of Agriculture, Water and Environment (now DCCEEW)
DCCEEW	Department of Climate Change, Energy, Environment and Water (formerly DAWE)
DECC	Department of Environment and Climate Change (now DPE)
DEC	Department of Environment and Conservation (now DPE)
DJLU	Defence Joint Logistics Unit
DPE	Department of Planning and Environment (formerly DPIE)
DPIE	Department of Planning, Industry and Environment (now DPE)
EES	NSW Environment, Energy and Science (part of DPE)
EIS	Environmental Impact Statement
EMP	Environmental Management Plan
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EPA	NSW Environment Protection Authority
EPBC Act	<i>Environmental Protection and Biodiversity Conservation Act 1999</i>
EPL	Environment Protection Licence
ER	Environmental Representative
EWMS	Environmental Work Method Statement
IAQM	Institute of Air Quality Management
Infrastructure Approval	SSI 10053 or NSW CoA
m/s or ms ⁻¹	Metres per second
MARW	Moorebank Avenue Realignment Works
MIP	Moorebank Intermodal Precinct, which includes MPE and MPW
MPE	Moorebank Precinct East

Acronym	Definition
MPE Site	Comprises the MPE Stage 1 Project as approved by SSD 14-6766 for the development of the intermodal terminal facility (IMT) at Moorebank and MPE Stage 2 as approved under SSD 7628 (as modified) and MPE Concept Approval (MP 10_0193) for the construction and operation of warehousing and distribution facilities and upgrades to approximately 2.1 kilometres of Moorebank Avenue.
MPW	Moorebank Precinct West
MPW Site	Comprises the MPW Stage 2 Project which is the second stage of development under the MPW Concept Approval (SSD 5066) and SSD 7709. The Project involves the construction and operation of a multi-purpose intermodal terminal facility, Rail link connection, warehousing and upgraded intersection on Moorebank Avenue.
National Intermodal	National Intermodal Corporation
Nearby receptor	Defined as receptors within the 350m buffer distance depicted in Figure 4.1
NEPC	National Environment Protection Council
NEPM	National Environment Protection Council (NEPC) <i>National Environment Protection (Ambient Air Quality) Measure, 2021</i>
NGER Act	<i>National Greenhouse and Energy Reporting Act 2007 (Commonwealth)</i>
NO _x	Oxides of nitrogen
NO ₂	Nitrogen dioxide
OEH	NSW Office of Environment and Heritage (now NSW EES, a part DPE)
Planning Secretary	Secretary to the DPE
PM ₁₀	Particulate matter with diameters that are 10 micrometres and smaller
PM _{2.5}	Particulate matter with diameters that are 2.5 micrometres and smaller
POEO Act	<i>Protection of the Environment Operations Act 1997</i>
Project Site	Refers to the construction footprint which is approximately 18.96 hectares and includes access for the construction of road embankments and cuttings, temporary and permanent fencing, temporary and permanent water quality control basins, ancillary facilities, access roads and construction side roads. It is generally bounded by the Defence Joint Logistics Unit (DJLU), MPE, Boot land and the Sydney Trains owned land adjacent to the East Hills Railway.
REMMs	Revised Environmental Management Measures
RMS	Roads and Maritime Services (now TfNSW)
RtS	Response to Submissions
SAP	Sensitive Area Plans
SEARs	Secretary's Environmental Assessment Requirements
SSI	State significant infrastructure
TfNSW	Transport for NSW
The Project	Moorebank Avenue Realignment Works
µg/m ³	Micrograms per cubic metre

1 INTRODUCTION

1.1 Context

This Construction Air Quality Management Plan (CAQMP) forms part of the Construction Environmental Management Plan (CEMP) for the Moorebank Avenue Realignment Works (MARW) (the Project).

This CAQMP has been prepared to address the requirements of the NSW Minister's Conditions of Approval (CoA) and the Revised Environmental Management Measures (REMMs) detailed in the Response to Submissions (RtS) and the applicable legislation.

1.2 Background and Project Description

National Intermodal Corporation (National Intermodal) plans to realign and upgrade a section of Moorebank Avenue. The Project involves the realignment of an existing two-kilometre section of Moorebank Avenue, from a point approximately 130 meters south of the Anzac Road/Moorebank Avenue intersection to immediately north of the East Hills Railway. Moorebank Avenue currently divides the Moorebank Intermodal Precinct (MIP) into the Moorebank East Precinct (MPE site) and the Moorebank West Precinct (MPW site) (See Figure 1.1).

The Project is about three kilometres of additional road which ties in with the existing Moorebank Avenue at the northern and southern extremities. From its northernmost point, the realigned Moorebank Avenue follows the northern boundary of the MPE site, before continuing south along the MPE Site eastern boundary. This section of the realignment comprises four lanes (i.e. two lanes in each direction). At the south-western corner of MPE, the additional road section merges to become a dual lane road (i.e. one lane in each direction) before continuing in a south-west direction, crossing Anzac Creek, and re-joining the existing Moorebank Avenue alignment near the East Hills Railway (refer to Figure 1.1). At completion and commissioning of the realigned road section, the public through traffic using Moorebank Avenue will be redirected onto the upgraded alignment. The existing road alignment will be decommissioned and modified to function as a restricted access to the MIP.

The Project Site (Project Site) is approximately 18.96 hectares and includes access for the construction of road embankments and cuttings, temporary and permanent fencing, temporary and permanent water quality control basins, ancillary facilities, access roads and construction side roads. It is generally bounded by the Defence Joint Logistics Unit (DJLU), MPE, Boot land and the Sydney Trains owned land adjacent to the East Hills Railway (refer to Figure 1.1).

A detailed description of the Project is provided in Section 2 of the CEMP and is also shown on Figure 1.2.

The Project will not be staged but will be undertaken in phases and is expected to take approximately 16 months to complete.

An Environmental Impact Statement (EIS) for the Project was prepared in March 2021 to describe and assess the Project and recommend management measures to address impacts. The EIS was exhibited by the then NSW Department of Planning, Industry and Environment (DPIE) from 17 March 2021 to 13 April 2021 to give the community and stakeholders the opportunity to provide comment. A RtS report was submitted in May 2021 to address the identified issues.

The Project was approved by the NSW Minister for Planning on 14 October 2021 as State Significant Infrastructure (SSI-10053) (Infrastructure Approval) under Division 5.2 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The Project is also a controlled action under Section 130(1) and 133(1) of

the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and was approved by the Minister for the Environment on 7 December 2021 (EPBC Approval 2020-8839). On 14 January 2025 a variation to EPBC 2020-8839 was approved by the Minister for the Environment.

The EIS assessed the impacts of construction of the Project on air quality. As part of EIS development, a detailed Air Quality Impact Assessment (AQIA) was prepared in accordance with the legislation. The AQIA was prepared to address the Secretary's Environmental Assessment Requirements (SEARs) issued by the DPIE and the Commonwealth EIS Guidelines issued by the Commonwealth the then Department of Agriculture, Water and Environment (DAWE). The AQIA was included as Appendix J in the EIS.

Revised Environmental Management Measures (REMMs) were provided within the RtS. Where applicable, the REMMs from the RtS have been included in this CAQMP (Section 6 and Appendix B).

1.3 Scope of the Plan

This CAQMP is applicable to the construction stage of the Project. The CAQMP describes how potential air quality impacts will be managed during construction of the Project. Operational air quality impacts and operation measures do not fall within the scope of this CAQMP and therefore are not included within the processes contained herein.

1.4 Environmental Management System Overview

The environmental management framework for the Project is described in Section 3 of the CEMP. This CAQMP forms part of the framework for the Project. The requirements of the NSW CoA's and the REMMs identified in this CAQMP will be complied with during construction.

Management measures identified in this CAQMP may also be incorporated into site or activity specific Environmental Work Method Statements (EWMS). EWMS incorporate appropriate mitigation measures and controls and identify key procedures to be used during construction activities. A template EWMS for use is provided in Appendix E of the CEMP.

1.5 CAQMP Endorsement and Approval

This CAQMP has been prepared to satisfy the NSW CoA's in relation to air quality management during construction of the Project.

This CAQMP will be reviewed by the Project Manager/ Delivery Team and will be endorsed by the Environmental Representative (ER) (refer to Appendix A) at least one month prior to the commencement of construction as nominated in the Project Risk Assessment Matrix approved by the Department of Planning and Environment (DPE) in accordance with NSW CoA A19. Construction of the Project will not commence prior to approval of the CEMP by the Secretary and endorsement of the CAQMP by the ER. The final approved CAQMP will be available on the MIP and/or National Intermodal website and will be submitted to the Commonwealth for information.

The ER can approve minor amendments to this CAQMP if they do not increase impacts to nearby receptors, are of an administrative nature and are consistent with the conditions of the Infrastructure Approval. This does not include any modifications to the conditions of the Infrastructure Approval.

1.5.1 Interactions with Other Management Plans

This CAQMP has the following interrelationships with other management plans and documents:

- Sensitive Area Plans (SAP) identify adjacent residential and other receptors (Appendix E of the CEMP)
- Community Communication Strategy (CCS) provides procedures and processes for community notification, consultation and complaints management
- Construction Traffic and Transport Management Plan (CTTMP) addresses the management of heavy vehicle movements
- Construction Soil and Water Management Plan (CSWMP) addresses the erosion and sedimentation impacts and identifies procedures for minimising erosion within the Project Site from potential dust emissions
- Construction Biodiversity Management Plan (CBMP) identifies the management measures to minimise impacts on flora and fauna, including impacts from dust and emissions
- Construction Waste and Resources Management Plan (CWRMP) provides a framework for waste management and identifies the appropriate storage, handling, treatment, reuse, recycling and/or disposal of construction waste material, that may generate offensive odours and/or gases.

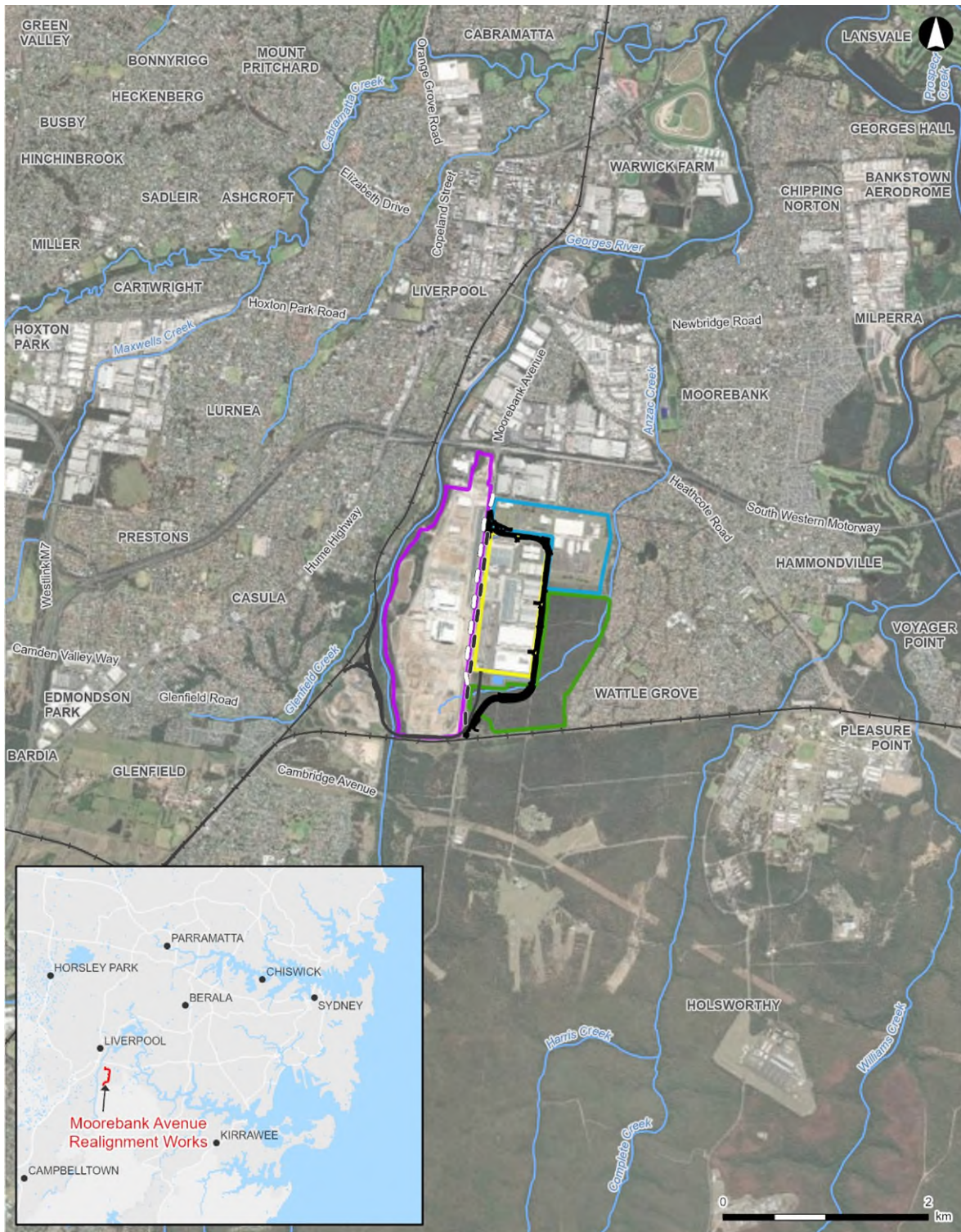
1.6 Consultation

1.6.1 Consultation for Preparation of the CAQMP

There is no requirement to consult with government agencies and stakeholders during the development of this CAQMP as nominated in the Project Risk Assessment Matrix and approved by the Department of Planning and Environment (DPE) in accordance with NSW CoA A19. Refer to the Appendix D of the CEMP for additional consultation requirements.

1.6.2 Ongoing Consultation during Construction

Ongoing consultation between the Project and stakeholders, relevant agencies and the community regarding the management of air quality impacts will be undertaken during the construction of the Project as required. The process for the consultation will be documented in the CCS.



Legend

- Moorebank Avenue Realignment Works
 - MIP Rail link
 - Previous Moorebank Avenue
 - Moorebank Avenue diversion road
 - Watercourse
 - Railway
 - Moorebank Precinct West
 - Moorebank Precinct East
 - Boot Land boundary*
 - Defence Joint Logistics Unit
 - On-site detention
- *relates to the parcel of land known as the Boot Land, does not indicate biobanking boundaries



1:55,000 at A4
 Coordinate System: GDA2020 MGA Zone 56
 Date issued: December 6, 2024
 Imagery: Esri, HERE, Garmin, USGS, Maxar



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Figure 1.1: Project Location



Legend

- Moorebank Avenue Realignment Works
- Construction footprint
- Construction compound
- Railway
- Watercourse



1:16,000 at A4
 Coordinate System: GDA2020 MGA Zone 56
 Date issued: December 11, 2024
 Imagery: Nearmap



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Figure 1.2: Project layout

2 PURPOSE AND OBJECTIVES

2.1 Purpose

The purpose of the CAQMP is to describe how construction impacts on air quality will be minimised and managed during the construction of the Project.

2.2 Objectives

The key objective of the CAQMP is to ensure that air quality impacts are managed appropriately throughout the construction of the Project and consider the mitigation and management measures referred to in:

- NSW Minister's Infrastructure Approval dated 14 October 2021 (SSI-10053)
- Federal Minister for the Environment Approval dated 7 December 2021 (EPBC 2020-8839), as varied on 14 January 2025
- Moorebank Avenue Realignment Environmental Impact Statement Volume 1 and Volume 2 prepared by EMM for Sydney Intermodal Terminal Alliance dated March 2021 (EIS)
- Moorebank Avenue Realignment Response to Submissions prepared for Sydney Intermodal Terminal Alliance dated May 2021 (RtS).

2.3 Targets

Table 2.1 details the targets established for the management of air quality impacts during construction of the Project.

Table 2.1: Project environmental targets for air quality

Objective	Target	Timeframe	Responsibility
Ensure compliance with relevant NSW CoAs and applicable legislation	No written warnings or infringement notices Zero non-compliance	Throughout construction	Construction Contractor
Avoid, minimise or manage potential adverse air quality impacts within and adjacent to the Project corridor	No visible dust plumes No complaints from adjacent land users (e.g. MPE warehouse operators)	Throughout construction	Construction Contractor
Minimise impacts on nearby sensitive receptors.	No complaints from nearby sensitive receptors.	Throughout construction	Construction Contractor

3 ENVIRONMENTAL REQUIREMENTS

3.1 Relevant Legislation and Guidelines

3.1.1 Legislation

All legislation relevant to the Project is included in Appendix B of the CEMP. Legislation considered during the development of this CAQMP includes:

- Environmental Planning and Assessment Act 1979 (EP&A Act)
- Protection of the Environment Operations Act 1997 (POEO Act)
- National Greenhouse and Energy Reporting Act, 2007 (NGER Act) and Regulations 2008 (Commonwealth).

3.1.2 Additional Approvals, Licences, Permits and Requirements

No specific air quality approvals, licences or permits are required. However, refer to Appendix B of the CEMP for further detail.

3.1.3 Guidelines and Standards

The main guidelines, specifications and policy documents relevant to this CAQMP include:

- National Environment Protection Council (NEPC) National Environment Protection (Ambient Air Quality) Measure, 2021
- Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales (NSW EPA, 2022)
- Technical framework - Assessment and management of odour from stationary sources in NSW (DEC, 2006)
- Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales (NSW EPA, 2022)
- Guidance on the assessment of dust from demolition and construction (IAQM, 2014)
- Air Emissions Inventory for the Greater Metropolitan Region in New South Wales (EPA, 2012)
- Air Quality Monitoring in the Vicinity of Demolition and Construction Sites (UK IAQM, 2018)
- Air Quality Monitoring Criteria for Deposited Dust (DEC Guideline)
- Government Resource Efficiency Policy (NSW Office of Environment and Heritage (OEH, 2014)
- Australian Standard AS 3580.1.1-2007 Methods of Sampling Analysis of Ambient Air. Part 1.1 Guide to Siting Air Monitoring Equipment
- Australian Standard AS 3580.10.1-2016 Methods of Sampling Analysis of Ambient Air. Determination of Particulate Matter – Deposited Matter - Gravimetric Method.

3.2 Commonwealth Approval

The Project is considered a controlled action under the EPBC Act and is therefore subject to Commonwealth CoA's. There are no Commonwealth CoA's related to air quality management.

3.3 NSW Infrastructure Approval

The requirements of the Infrastructure Approval relevant to the development of this CAQMP are shown in Table 3.1. These are defined as 'primary NSW CoA' and specifically relate to the development of the CAQMP. Secondary CoA relevant to, but not specific to the development of this CAQMP, have been listed in Appendix B. A cross reference is also included to indicate where the CoA is addressed in this CAQMP or other Project plans.

Table 3.1: Primary NSW CoA relevant to the CAQMP

No.	Requirements	Document reference
C6	CEMP Sub-plans as identified in documents listed in Condition A1 must be prepared in consultation with relevant government agencies and stakeholders. Relevant government agencies and stakeholders must be nominated in the risk assessment matrix submitted to the Planning Secretary require in accordance with Condition A14 or A19. Details of all information requested by an agency during consultation must be provided to the Planning Secretary as part of any submission of the relevant CEMP Sub-plan, including copies of all correspondence from those agencies as required by Condition A5.	Section 1.6
C7	The CEMP Sub-plans must state how:	
(a)	the environmental performance outcomes identified in the documents listed in Condition A1 will be achieved;	Section 2.3 Table 6.1
(b)	the mitigation measures identified in the documents listed in Condition A1 will be implemented;	Table 6.1
(c)	the relevant terms of this approval will be complied with; and	Table 3.1 Appendix B
(d)	issues requiring management during construction (including cumulative impacts), as identified through ongoing environmental risk analysis, will be managed through SMART principles.	Section 6 Section 8

3.4 Revised Environmental Management Measures

The REMMs relevant to the development of this CAQMP, defined as 'primary REMMs' are detailed in Table 3. A cross reference is also included to indicate where the REMM is addressed in this CAQMP or other Project plans. Secondary REMMs relevant to, but not specific to the development of this CAQMP, have been listed in Appendix B.

Table 3.3: Primary REMMs relevant to the development of this CAQMP

No.	Requirements	Timing	Document reference
AIR01	An air quality management plan (AQMP) will be developed for the Project post-approval and will be encompassed within the CEMP. The AQMP will provide details for the ongoing management and maintenance of air quality management and mitigation measures during the construction phase of the Project.	Pre-construction	This CAQMP Table 6.1

4 EXISTING ENVIRONMENT

4.1 Key References

The source of data and information used to develop this CAQMP are Section 7.10 and Appendix J of the Project EIS and Section 4.1 of the Project RtS.

The Project boundary and adjacent residential and other sensitive receptors are identified on the Sensitive Area Plans included in Appendix D of the CEMP.

Key components of the AQIA methodology included:

- Identification of sensitive receptors
- Identification of risks to air quality from construction as per *Guidance on the Assessment of Dust from Demolition and Construction* (IAQM, 2014)
- Assessment of three separate dust impacts: annoyance due to dust deposition, the risk of health effects due to an increase in exposure to airborne particulate matter, and harm to ecological receptors
- Recommendation of appropriate mitigation measures.

The following sections summarises the existing air quality within and adjacent to the Project Site.

4.2 Sensitive Receptors

The Project is located within Liverpool Local Government Area, and primarily within an industrial area. The suburb of Wattle Grove is located to the east, and the suburbs of Casula and Glenfield are located to the west and south respectively. These suburbs are generally composed of low-density residential and medium density residential dwellings. The Project is within 350 m of human receptors¹ and within 50 m of an ecological receptors² as shown in Figure 4.1. For the purposes of monitoring and inspections, “nearby receptors” are defined as those within the 350 metre buffer distance as depicted in Figure 4.1.

¹ A ‘human receptor’, refers to any location where a person or property may experience the adverse effects of airborne dust or dust deposition, or exposure to PM₁₀ over a time period relevant to air quality standards and goals. In terms of annoyance effects, this will most commonly relate to dwellings, but may also refer to other premises such as museums, galleries, vehicle showrooms, food manufacturers, electronics manufacturers, amenity areas and horticultural operations.

² An ‘ecological receptor’ refers to any sensitive habitat affected by dust deposition. This includes the direct impacts on vegetation or aquatic ecosystems of dust deposition, and the indirect impacts on fauna (e.g. on foraging habitats).

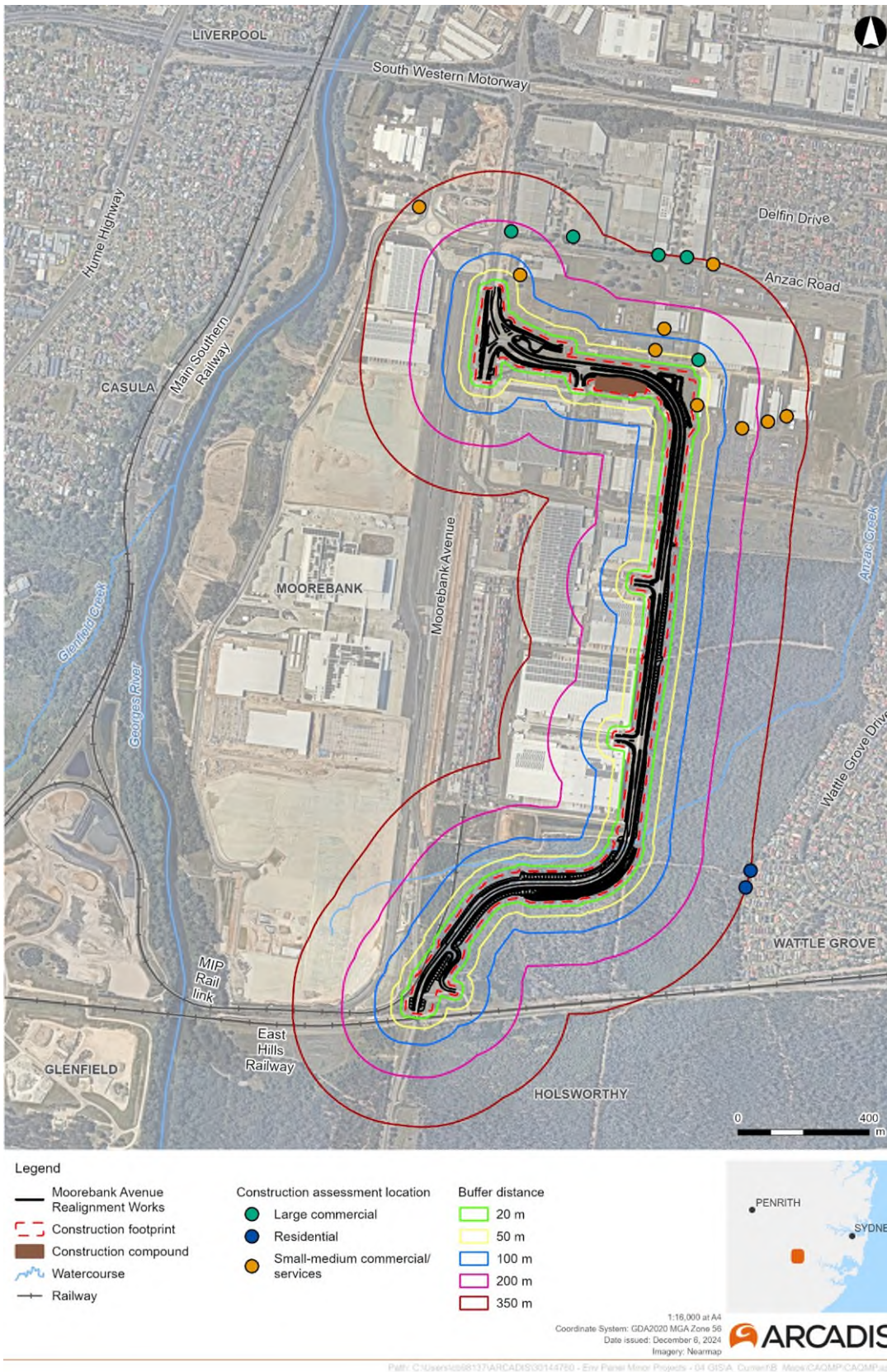


Figure 4.1: Receptors³ for construction impacts

³ Ecological receptors are generally located in the bushland to the east and south of the alignment as discussed in Section 5.4.

4.3 Meteorology

Meteorology for the AQIA was sourced from a DPE monitoring station in Liverpool, located approximately 2 km from the intersection of Anzac Road and Moorebank Avenue. Data was obtained for the five year period, between 2015 and 2019. Due to the weather stations proximity, the meteorological measurements from this location are considered to be representative of the conditions likely to be experienced at the Project Site.

There was a high degree of consistency in wind direction, average wind speed, and percentage occurrence of calm winds (defined as wind speeds ≤ 0.5 m/s) across the five-year period. The prevailing winds in all years were from a west-south-westerly direction, with a smaller percentage of winds from the east. The wind patterns in spring and autumn were very similar displaying dominant west-south-westerly winds. In summer, the proportion of easterly winds was higher, and conversely in winter there were few easterlies and more westerly winds. Appendix B of the AQIA includes further details of the meteorology between 2015 and 2019.

4.4 Local Air Quality

DPE operates a state-wide air quality monitoring network which provides information on current and historical air quality. Background concentrations for the AQIA were based on the monitoring data from the closest Air Quality Monitoring Station (AQMS) to the Project Site located in Liverpool (approximately 1.8 km to the west).

Annual mean pollutant concentrations for oxides of nitrogen (NO_x), nitrogen dioxide (NO_2), particulate matter with a diameter of less than $10 \mu\text{m}$ (PM_{10}), and particulate matter with a diameter of less than $2.5 \mu\text{m}$ ($\text{PM}_{2.5}$) between 2015 and 2019 from the AQMS are provided in Table 4.1. Annual average background concentrations which exceeded the ambient air criterion are in **bold**.

Table 4.1: Annual mean concentration 2015 – 2019 (DPE Liverpool)

Year	NO_x ($\mu\text{g}/\text{m}^3$)	NO_2 ($\mu\text{g}/\text{m}^3$)	PM_{10} ($\mu\text{g}/\text{m}^3$)	$\text{PM}_{2.5}$ ($\mu\text{g}/\text{m}^3$)
2015	49.4	20.2	18.4	8.5
2016	52.6	23.8	19.5	8.7
2017	55.2	25.1	20.6	8.9
2018	57.4	25.2	24.2	10.1
2019	53.8	24.6	27.8	12.9
Impact assessment criterion ⁴ (NSW EPA, 2022)	N/A	31.0	25.0	8.0

There were no exceedances of the 1-hour NO_2 criterion between 2015 and 2019. The maximum 1-hour mean concentration during the entire period ($131 \mu\text{g}/\text{m}^3$) was below the corresponding impact assessment criterion of $164 \mu\text{g}/\text{m}^3$.

The numbers of exceedances of the 24-hour air quality criterion for PM_{10} of $50 \mu\text{g}/\text{m}^3$ by year are provided in Table C.2 of the AQIA. There were more exceedances of the 24-hour criterion in 2018 than in previous years, and there were many more exceedances (28 in total) in 2019. The exceedances in 2019 were mostly associated with the extensive bushfires in the latter part of the year; the Sydney metropolitan area experienced dangerous levels of particulate matter on several days in December 2019.

The numbers of exceedances of the 24-hour air quality criterion for $\text{PM}_{2.5}$ of $25 \mu\text{g}/\text{m}^3$ by year are provided in Table C.3 of the AQIA. As with PM_{10} , the bushfires of late 2019 resulted in high $\text{PM}_{2.5}$ concentrations and, as a consequence, there were many more exceedances of the criterion (32 in total) in 2019 than in previous years.

⁴ Averaging period is annual

5 ENVIRONMENTAL ASPECTS AND IMPACTS

5.1 Construction Activities

The AQIA refers to the IAQM (2014) risk assessment approach, a semi-quantitative method developed by the UK IAQM to identify and rate risks and to recommend appropriate management measures for potential air quality impacts during construction. The risk assessment considers four primary construction activities including:

- Demolition (demolition consists of the removal of sections of pavement in the north-east corner of the Project Site. No buildings will be removed).
- Earthworks
- Construction
- 'Trackout' or the transport-related handling of construction materials onto public roads.

The IAQM process for the risk assessment includes four steps and several criteria including a screening review, risk assessment, development of mitigation measures and residual risk assessment:

- Step 1 - Screening review: undertaking a screening review to identify whether there are receptors nearby which have the potential to be impacted by the intended works, and whether a more detailed assessment is required
- Step 2 - Risk assessment:
 - Step 2A: Evaluating the potential dust emission magnitude of the works
 - Step 2B: Determining the sensitivity of the area to dust deposition, human health impacts and ecological impacts
 - Step 2C: Estimating the risk of dust deposition, human health impacts and ecological dust impacts if no mitigation measures are applied
- Step 3 - Mitigation and management, involving the development of mitigation measures for each construction activity depending on the level of risk determined in Step 2
- Step 4 - Residual risks, involving evaluation of any residual dust related risks following the application of the mitigation measures in Step 3 to verify that a suitable level of mitigation has been applied to reduce the impact to the extent practicable.

The IAQM risk assessment for the Project concluded that for dust deposition impacts and ecological impacts, the risk (for unmitigated emissions) was 'low' for demolition, and 'medium' for earthworks, construction and track-out. For human health of workers impacts the risk was determined to be 'high' for earthworks, and 'medium' for demolition, construction and track-out. Based upon the risk assessment, appropriate management measures were recommended which are detailed in Section 6.

Section 2.3 of the CEMP provides an overview of the construction activities that have the potential for environmental impact. The potential risks have been identified based on the outcomes of the risk assessment provided in Appendix C of the CEMP. The Potential environmental aspects and impacts associated with construction are identified in Table 4.1 of the CEMP.

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

- Earthworks including clearing of vegetation, resulting in disturbance of soils, consequential erosion and the mobilisation of sediment
- Vehicle movements over unpaved surface (including unsealed access roads)

- Vehicle and plant exhaust emissions, which may be excessive if vehicles and plant are poorly maintained or operated inappropriately
- Topsoil / material handling including stripping, stockpiling, material loading and material haulage
- Temporary stockpiling which may result in wind erosion of exposed areas.

5.2 Factors Likely to Affect Dust Generation

In addition to the inherent risks of specific construction activities creating the potential to generate dust, several other environmental factors also affect the likelihood of dust emissions. These include:

- Wind direction – determines whether dust and suspended particles are transported in the direction of the sensitive receptors
- Wind speed – governs the potential suspension and drift resistance of particles
- Soil type – more erodible soil types have an increased soil or dust erosion potential
- Soil moisture – increased soil moisture reduces soil or dust erosion potential
- Rainfall or dew – rainfall or heavy dew that wets the surface of the soil reduces the risk of dust generation
- Evaporation – dries out the surface of the soil and leads to increased risk of dust generation
- Exposed surfaces – during construction non-vegetated surfaces will be exposed which is a key factor influencing dust emissions.

5.3 Nature of Air Quality Impacts

The construction activities listed in Section 5.1 have the potential to increase airborne particulate matter and cause nuisance impacts where construction is in close proximity to sensitive receptors. The IAQM risk assessment concluded a low-medium risk of dust deposition across the Project due proximity of receptors to the Project Site.

Potential impacts to air quality that may arise during construction of the Project include:

- Dust deposition and visible dust plumes
- Elevated PM₁₀ concentrations due to dust-generating activities
- Particulate matter exhaust emissions from diesel-powered construction equipment.

5.4 Ecological Impacts

In the EIS it was assumed that, for all construction activities, there would be ecological receptors within 20 m of the Project Site⁵, and that their sensitivity was 'medium' (i.e. locations with an important species or national designation, and where sensitivity to dust is uncertain or unknown). As a result, for all construction activities the sensitivity of the local area to ecological impacts was determined to be 'medium'. The proposed mitigation measures as detailed in Section 6 are considered sufficient to minimise impacts on ecological receptors.

⁵ It is noted that the northern portion of the Project Site is located in an industrial area and therefore are not subject to ecological receptors within a 20 metre radius

5.5 Cumulative Impacts

Cumulative air quality impacts may arise from the interplay between construction activities associated with the Project, other approved or proposed projects that are likely to occur within the area and other background air quality levels. When considered in isolation, specific impacts may be considered minor. These minor impacts may be more substantial however, when the impact of multiple projects on the same receptors is considered.

As outlined in the EIS, a number of other projects in the area that may coincide with construction works for the Project include, but are not limited to the following:

- MPE Stage 2 (SSD 7628)
- MPW Stage 2 (SSD 7709) and Stage 3 (SSD 10431)
- M5 Motorway Westbound Traffic Upgrade
- Glenfield Waste Services Resource Recovery Facility (SSD 6249).

Any effects of construction on air pollution and amenity generally considered to be temporary and relatively short-lived. Moreover, mitigation should be straightforward, as most of the necessary measures are routinely employed as 'good practice' on construction sites.

Communication between the Construction Contractor and developers for these projects will be undertaken to with the aim of combining messages when possible, to coordinate disruptive activities and to manage and minimise cumulative impacts to the local community as per the CCS.

6 ENVIRONMENTAL MITIGATION AND MANAGEMENT MEASURES

Management actions prescribed by this CAQMP aim to avoid and minimise impacts on air quality and are summarised in Table 6.1.

The development of management measures has been based on SMART principles i.e. measures that are specific, measurable, achievable, relevant, and time-bound:

- **S**pecific – Mitigation and management measures identified in Table 6.1 specifically to air quality impacts during construction
- **M**easurable – Inspection and monitoring requirements detailed in Section 7.3 include specific measures or indicators for which inspection and monitoring requirements will be triggered
- **A**chievable – Ongoing compliance with the Infrastructure Approval (Table 3.1), is achievable throughout the delivery of construction and represents the minimum requirements to be implemented by the Construction Contractor
- **R**elevant - The management measures outlined in Table 6.1 represent the approach to monitoring and tracking against the objectives, targets and environmental performance outcomes (identified in Section 2.3 of the CAQMP)
- **T**ime-bound – The management measures set out within Table 6.1 are required to be implemented for the duration of construction, setting a clear and defined time frame and includes reference to other timeframes, including during detailed design, pre-construction, post-construction and/or operation.

Table 6.1: Air quality management and mitigation measures

ID	Measure / Requirement	Timing	Responsibility	Ref	Evidence
Monitoring and Inspections					
1	<p>Local meteorological forecasts will be reviewed daily prior to the commencement of the days activities including:</p> <ul style="list-style-type: none"> • Timing of notable increases in wind speed and/or temperature • Changes in wind directions towards nearby receptors • Frequency of rain events. <p>Appropriate mitigation measures will be planned for, communicated and implemented as required such as rescheduling works, limiting clearing, stripping and spoil handling during periods of adverse weather (hot, dry and windy conditions). The likely meteorological conditions and implications for dust emissions and impacts will be discussed at the morning toolbox meeting.</p> <p>Dust generating activities will cease if wind conditions are classified as “strong winds” or greater (on Beaufort Wind Scale),</p>	Construction	Environmental Advisor	REMM AIR22 REMM AIR23 REMM AIR13	Daily records including weather forecast
2	<p>Daily onsite inspections for dust emissions will be undertaken. Should dust be identified as leaving site, works will stop and management measures implemented (see requirement 4); offsite dust inspections at nearby receptors (where publicly accessible) would then be conducted using street furniture and other horizontal surfaces as an indicator.</p> <p>Results of all monitoring will be recorded in a register which includes daily on-site inspections, off-site inspections and deposited dust on horizontal surfaces nearby receptors.</p> <p>All air quality related incidents will be recorded and will be managed in accordance with the incident management procedure (Section 6 of the CEMP) to resolve the incident.</p> <p>Should air quality related complaints be received, these will be recorded in the complaints register and investigated in accordance with the CCS.</p>	Construction	Site Supervisor Environmental Advisor All site personnel	REMM AIR04 REMM AIR21	Site inspection records
3	<p>Site inspections will occur at increased frequencies when activities with a high potential to produce dust are being undertaken and during prolonged dry or windy conditions.</p>	Construction	Site Supervisor Environmental Advisor	REMM AIR23	Site inspection records
3A	<p>A dust monitoring register will be maintained throughout construction to log all activities being undertaken including:</p> <ul style="list-style-type: none"> • Weather records (requirement 1; REMM AIR22) • Results of air quality inspections (requirements 2 and 3; REMM AIR21) including in response to complaints (requirement 2; REMM AIR03) and incidents (requirement 2; REMM AIR04) 	Construction	Site Supervisor Environmental Advisor	REMM AIR03 REMM AIR04 REMM AIR21 REMM AIR 22	Dust monitoring register

ID	Measure / Requirement	Timing	Responsibility	Ref	Evidence
Dust management					
4	<p>Dust generation will be minimised during construction where possible. Where practicable, specific measures will include (but will not be limited to):</p> <ul style="list-style-type: none"> • Water carts and water supply (e.g. watermains, rainwater tanks and sediment basins) made readily available • Exposed and disturbed areas including stockpiles, unsealed roads, and embankments will be covered or sealed with water, polymer or geofabric • Adjusting the intensity of activities based on measured and observed dust levels, weather forecasts and the proximity of and direction of the works in relation to the nearest identified sensitive receptors • The planning and undertaking of demolition activities in a manner that minimises dust generation • Water-assisted dust sweepers will be utilised to remove any material tracking. Dry sweeping will be avoided • Drop heights will be minimised • Period inspections of site fencing and barriers will be undertaken, should they be soiled, they will be cleaned using wet methods as required without causing runoff and potential offsite discharge. 	Construction	Site Supervisor Environmental Advisor	NSW CoA E1 REMM AIR08 REMM AIR11 REMM AIR12 REMM AIR13 REMM AIR15 REMM AIR17 REMM AIR18	Site inspection records
5	<p>Implement stockpile and sediment storage controls, where possible, by:</p> <ul style="list-style-type: none"> • Minimising the number of stockpiles and amount of material stockpiled where practicable • Stabilise stockpiles, or the faces of stockpiles that are not being worked on, that will be in place for more than 10 days and prior to inclement weather (i.e. wind/rain) • Locating stockpiles away from sensitive receptors, including potentially ecological receptors • Limiting stockpiling activities during conditions where winds are blowing strongly in the direction(s) from the stockpiling location to identified sensitive receptors. • Shade cloth barriers attached to fences will be erected around potentially dusty activities such as trench excavations and material stockpiles where practicable. 	Construction	Site Supervisor	NSW CoA E1 REMM AIR07	Site inspection records
Vehicle management					
6	Maximum speed limit of 20 km/h on all internal roads and work areas during construction.	Construction	Site Supervisor	REMM AIR09	Speed safety signs Site layout plans

ID	Measure / Requirement	Timing	Responsibility	Ref	Evidence
7	Vehicles entering or exiting the site carrying sediment or spoil material will have the entire load covered.	Construction	Site Supervisor	REMM AIR20	Compliance monitoring
Emissions					
8	Vehicles, plant and equipment will be switched off when not in use.	Construction	Site Supervisor	NSW CoA E1	Compliance monitoring
9	Vehicles, plant and equipment will be operated in an efficient manner such as through queue management, restrictions on idling and the use of auxiliary equipment.	Construction	Site Supervisor	NSW CoA E1	Site layout plans Compliance monitoring
10	Any plant and equipment emitting visible smoke will be turned off until properly investigated.	Construction	Site Supervisor	NSW CoA E1 REMM AIR10	Compliance monitoring
11	Maintenance and tuning of all equipment engines will be undertaken in accordance with the manufacturer's specifications.	Construction	Project Manager	NSW CoA E1 REMM AIR10	Maintenance records
Odour					
12	If any odorous or contaminated material is identified, limit the time that material is exposed, remove material as quick as reasonably possible and cover material at the end of the day. Odorous materials identified on site will be managed in accordance with the Construction Contamination Management Plan.	Construction	Site Supervisor	NSW CoA E1	Incident register

7 COMPLIANCE MANAGEMENT

7.1 Roles and Responsibilities

The Project organisational structure and overall roles and environmental responsibilities are outlined in Section 5.1 of the CEMP. Specific responsibilities for the implementation of air quality management are detailed in Section 6 of this CAQMP.

7.2 Training

All site personnel (including sub-contractors) will undergo site induction training relating to air quality management issues prior to construction commencing. The induction training will address elements related to air quality management, including:

- Existence and requirements of this CAQMP
- Relevant legislation, regulations and Environment Protection Licence (EPL) conditions
- Incident response, management and reporting
- Environmentally sensitive locations and exclusion zones
- How to implement air quality management measures
- Specific responsibilities to minimise air quality impacts on the community associated with construction activities
- All requirements of Appendices contained within this CAQMP.

Targeted training in the form of toolbox talks or specific training will also be provided to personnel with a key role in air quality management or those undertaking an activity with a high risk of environmental impact. Site personnel will undergo refresher training at not less than six monthly intervals.

Daily pre-start meetings conducted by the Construction Contractor Site Supervisor will inform the site workforce of any environmental issues relevant to air quality that could potentially be impacted by, or impact on, the day's activities.

Further details regarding staff induction and training are provided in Section 5.2 of the CEMP.

7.3 Monitoring and Inspections

Inspections of sensitive areas and activities with the potential to impact air quality will occur for the duration of the construction. The AQIA for the Project does not recommend placement of ongoing monitoring equipment. Regular visual monitoring and inspections will be undertaken during construction aligning with the management measures outlined in Section 6. A dust monitoring register will be maintained throughout construction to log all monitoring activities being undertaken including:

- Weather records (requirement 1 of Table 6.1; REMM AIR22)
- Results of air quality inspections (requirements 2 and 3 of Table 6.1; REMM AIR21) including in response to complaints (requirement 2 of Table 6.1; REMM AIR03) and incidents (requirement 2 of Table 6.1; REMM AIR04).

Requirements and responsibilities in relation to monitoring and inspections are documented in Section 7.1 of the CEMP. Specific air quality monitoring and inspection requirements are detailed in the following sections.

7.3.1 Monitoring

Table 7.1 details the meteorological and air quality monitoring that will be undertaken during construction by the Construction Contractor.

Table 7.1: Summary of monitoring

Monitoring details	Frequency	Record	Responsibility
Prevailing wind conditions and weather forecast	Daily	<ul style="list-style-type: none"> Weather conditions and forecasts, including the timing of notable increases in wind speed and/or temperature, will be obtained from the Australian Bureau of Meteorology (BoM) operated weather stations such as Liverpool AQMS The likely meteorological conditions and implications for dust emissions and impacts will be discussed and recorded at the morning toolbox meeting. 	Site Supervisor
Visual onsite surveillance for dust emissions	Daily	<ul style="list-style-type: none"> Site inspection records 	Site Supervisor Environmental Advisor
Offsite surveillance	As required	<ul style="list-style-type: none"> At nearby receptors (where publicly accessible) if offsite emissions are identified using street furniture and other horizontal surfaces as an indicator 	Site Supervisor Environmental Advisor
Odour monitoring	In response to complaints	<ul style="list-style-type: none"> No detectable odours beyond the site boundary, or at the nearest sensitive land use downwind 	Environmental Advisor

Should compliance air quality monitoring be undertaken, it will be undertaken in accordance with the Approved Method for the Sampling and Analysis of Air Pollutants in New South Wales (NSW EPA 2022) and the criteria in Table 2.2 of the AQIA.

7.3.2 Inspections

Proposed inspections to be carried out by the Construction Contractor that are relevant to air quality are detailed in Table 7.2.

Table 7.2: Summary of air quality inspections

Inspection	Frequency	Record	Responsibility
Inspection of potential dust emissions and dust controls to ensure effective implementation	Daily	<ul style="list-style-type: none"> Site Inspection records Daily diary Dust monitoring register 	Site Supervisor Environmental Advisor
Investigation in response to complaints, or authorised agency request	As required	<ul style="list-style-type: none"> Incident report Complaints register 	Site Supervisor Environmental Advisor
Project entry/ exit integrity to minimise dust/ mud tracking on public roads	Daily	<ul style="list-style-type: none"> Site Inspection records Daily diary 	Site Supervisor Environmental Advisor
Haul road integrity	Daily	<ul style="list-style-type: none"> Daily diary 	Site Supervisor

Inspection	Frequency	Record	Responsibility
Plant / equipment inspections including maintenance and emissions	As required, prior to use	<ul style="list-style-type: none"> • Daily diary • Pre-start checks 	Site Supervisor

7.4 Auditing

Audits (both internal and external) will be undertaken to assess the effectiveness of environmental controls, compliance with this sub plan, NSW CoA and other relevant approvals, licenses and guidelines.

Audit requirements are detailed in Section 7.3 of the CEMP.

7.5 Reporting and Identified Records

Reporting requirements and responsibilities are documented in Section 7.4 of the CEMP.

The Construction Contractor will be required to maintain accurate records substantiating all construction activities associated with the Project or relevant to the NSW CoA, including measures taken to implement this CAQMP. Records will be made available to the DPE and DCCEE upon request, within the timeframe nominated in the request.

7.6 Incidents

It is the responsibility of all personnel to report any incident in accordance with the incident management procedures detailed to Section 6.1 of the CEMP. All air quality incidents, both on and offsite, will be recorded and reported.

7.7 Complaints

Complaints will be managed as soon as possible in accordance with the requirements of CCS and Complaints Management System developed in accordance with NSW CoA B7 and B8 respectively. Complaints will be managed in accordance with Section 5.4.3 of the CEMP and CCS.

7.8 Non-Compliances and Corrective Actions

Non-compliance may be identified via internal and external audits, site monitoring, inspections and observations, environmental incidents and emergencies, complaints and management reviews.

Non-compliance and resulting corrective actions will be managed in accordance with Section 7.2 of the CEMP.

8 REVIEW AND IMPROVEMENT

8.1 Continuous Improvement

Continuous improvement of this CAQMP will be achieved by the ongoing evaluation of environmental management performance against environmental policies, objectives and targets for the purpose of identifying opportunities for improvement. The continuous improvement process will be designed to:

- Identify areas of opportunity for improvement of environmental management and performance
- Determine the cause or causes of non-compliances and deficiencies
- Develop and implement a plan of corrective and preventative action to address any non-compliances 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.

Project environmental risks will be identified and included in the risk register and appropriate mitigation measures implemented throughout the construction of the Project as part of the continuous improvement process.

The process for ongoing risk identification and management during construction is outlined in Section 4.2 and Appendix C of the CEMP.

8.2 CAQMP Update and Amendment

The processes described in Section 7.5 of the CEMP may result in the need to update or revise this CAQMP. This will occur as needed.

Any revisions to the CAQMP will be endorsed and / or approved in accordance with the process outlined in Section 1.5 of the CEMP.

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

APPENDIX A Environmental Representative Endorsement



14 April 2023

Our Ref: 2205 L3

National Intermodal Corporation
Senior Manager – Planning and Environment
Attention: Westley Owers

Dear Westley

**SSI 10053 - Moorebank Avenue Realignment Works (MARW)
Environmental Representative (ER) - Endorsement of the Construction Air Quality
Management Plan**

Pursuant to SSI10053 Conditions of Approval (CoA) A31(d) and C9, I confirm that I have reviewed and endorsed the following documentation as being consistent with the conditions of approval and relevant undertakings made in the documents listed in Condition A1:

- National Intermodal Corporation, Moorebank Avenue Realignment Works, Appendix M, Construction Air Quality Management Plan, Version E, dated 31 March 2023 (CAQMP).

The CAQMP was prepared to address REMM AIR01.

In accordance with CoA C8, the CAQMP was expressly nominated by a nominee of the Planning Secretary to be endorsed by the ER (Department of Planning and Environment letter dated 22 November 2022, Reference: SSI-10053-PA-4).

Yours sincerely,

Maurice Pignatelli
Environmental Representative – MARW Project
OptimE Pty Ltd





12 February 2025

Our Ref: 2205.L13.2

National Intermodal Corporation
Senior Manager – Planning and Environment
Attention: Westley Owers

Dear Westley

**SSI 10053 - Moorebank Avenue Realignment Works (MARW)
Environmental Representative (ER) – Approved amendments to the Construction
Environmental Management Plan (CEMP) and associated sub-plans and monitoring
programs**

National Intermodal Corporation (NIC) has updated the CEMP and associated sub-plans and monitoring programs approved by the Secretary to reflect the following documents:

- Moorebank Avenue Realignment Works (MARW) Division 5.2 Consistency Assessment – Proposed Design and Boundary Changes, Revision E, 16 July 2024
- Artefact Moorebank Avenue Realignment Works Surface Collection Completion Memo, 30 August 2024
- Moorebank Avenue Realignment Project Remediation Action Plan (Rev C), 5 July 2024
- Variation to EPBC 2020-8839 approved by the Minister for the Environment and Water on 14 January 2025.
- Approval of variation to the conditions attached to the Environment Protection and Biodiversity Conservation (EPBC) Act 1999 approval 2020/8839, dated 14 January 2025.

A summary of the amendments, prepared by Arcadis, is provided as Attachment A to this letter.

The ER was requested by NIC to review the updated CEMP and associated sub-plans and monitoring programs and if the updates were considered by the ER to be consistent with SSI10053 Conditions of Approval (CoA) A31(i), to approve the amendments.

Pursuant to SSI10053 CoA A31(i), I confirm that I have reviewed the following MARW documentation:

- Construction Environmental Management Plan, Version F, dated 22 January 2025
- Construction Air Quality Management Plan, Version F, dated 22 January 2025



- Construction Bushfire Management Plan, Version F, dated 22 January 2025
- Construction Biodiversity Management Plan, Version H, dated 22 January 2025
- Construction Contamination Management Plan, Version E, dated 22 January 2025
- Construction Heritage Management Plan, Version I, dated 22 January 2025
- Construction Noise and Vibration Management Plan, Version H, dated 22 January 2025 and associated Construction Noise and Vibration Monitoring Program, Version H, dated 22 January 2025
- Construction Soil and Water Management Plan, Version E, dated 22 January 2025 and associated Construction Surface Water Monitoring Program, Version E, dated 22 January 2025
- Construction Traffic and Transport Management Plan, Version H, dated 22 January 2025
- Construction Waste and Resource Management Plan, Version H, dated 22 January 2025.

In my opinion, the amendments to the approved CEMP and associated subplans and monitoring programs do not increase impacts to nearby receivers, are of an administrative nature, and are consistent with the terms of SSI10053. On this basis, I approve the amendments.

Yours sincerely,



Maurice Pignatelli
Environmental Representative – MARW Project
OptimE Pty Ltd

Attachment A - MARW CEMP and Sub-plan minor updates, Q4 2024

Date 12 February 2025
To Maurice Pignatelli
From Jamie Crawford
Copy to Gail Hall, Wes Owers, Ben Bracken
Subject MARW CEMP and Sub-plan minor updates, Q4 2024

CEMP AND SUB-PLAN MINOR ADMENDMENTS

The MARW CEMP and Sub-plans have been updated to reflect the following:

- Moorebank Avenue Realignment Works (MARW) Division 5.2 Consistency Assessment – Proposed Design and Boundary Changes, Revision E, 16 July 2024
- Artefact Moorebank Avenue Realignment Works Surface Collection Completion Memo, 30 August 024
- Moorebank Avenue Realignment Project Remediation Action Plan (Rev C)
- Approval of variation to the conditions attached to the Environment Protection and Biodiversity Conservation (EPBC) Act 1999 approval 2020/8839, dated 14 January 2025.

The following table summarises the updates made to the CEMP and Sub-plans in order to reflect the above documentation.

Reason for update	Plan, version and section subject to minor update
Construction Environmental Management Plan	
Consistency Assessment – Proposed Design and Boundary Changes	Construction Environmental Management Plan (Version E), updated to Version F: <ul style="list-style-type: none"> • Figure 1.1 Project regional and local context, updated to reflect revised construction footprint. • Figure 2.1 Project Overview, updated to reflect revised construction footprint. • Figure 2.2a Project Overview, updated to reflect revised construction footprint and renamed Figure 2.2 • Figure 2.3b Project Overview, updated to reflect revised construction footprint and renamed Figure 2.3 • Figure 2.4c Project Overview, updated to reflect revised construction footprint and renamed Figure 2.4 • Figure 2.5d Project Overview, updated to reflect revised construction footprint and renamed Figure 2.5 • Appendix E Sensitive Area Plans: <ul style="list-style-type: none"> ○ App E Main Figure ○ App E Fig a ○ App E Fig b ○ App E Fig d
Moorebank Avenue Realignment Works Surface Collection Completion Memo	Construction Environmental Management Plan (Version E), updated to Version F: <ul style="list-style-type: none"> • Section 3.2.5. Bullet list summary of information included on Sensitive Area Plans updated to remove reference to Aboriginal heritage sites

Reason for update	Plan, version and section subject to minor update
	<ul style="list-style-type: none"> • Appendix E Sensitive Area Plans: <ul style="list-style-type: none"> ○ App E Main Figure. 'Recorded AHIMS' removed ○ App E Fig a. 'Recorded AHIMS' removed ○ App E Fig c. 'Recorded AHIMS' removed ○ App E Fig d. 'Recorded AHIMS' removed
<p>EPBC Act 2020/8839 variation, dated 14 January 2025.</p>	<p>Construction Environmental Management Plan (Version E), updated to Version F:</p> <ul style="list-style-type: none"> • Section 1.1 Overview updated to reflect approval of the variation to EPBC 2020/8839 dated 14 January 2025 • Section 1.2 Purpose of the CEMP updated to reflect that EPBC 2020/8839 was varied on 14 January 2025 • Table 4.2 Approvals permits and licences required for the Project updated to include Commonwealth EPBC Approval (EPBC 2020-8839) variation dated 14 January 2025 • Appendix C1 Legislation Register updated to reflect that EPBC 2020/8839 was varied on 14 January 2025.
<p>Other minor updates</p>	<p>Construction Environmental Management Plan (Version E), updated to Version F:</p> <ul style="list-style-type: none"> • Section 5.4.2 updated to reflect current Project website.
<p>Construction Biodiversity Management Plan</p>	
<p>Consistency Assessment – Proposed Design and Boundary Changes</p>	<p>Construction Biodiversity Management Plan (Version G), updated to Version H:</p> <ul style="list-style-type: none"> • Figure 1.1: Project location. Figure updated to reflect revised construction footprint. • Figure 1.2: Project overview. Figure updated to reflect revised construction footprint. • Figure 6.1: Project exclusion zones. Figure updated to reflect revised construction footprint. • Figure D-1 Native Plant Community Types and threatened flora and fauna. Figure updated to reflect revised construction footprint.
<p>EPBC Act 2020/8839 variation, dated 14 January 2025.</p>	<p>Construction Biodiversity Management Plan (Version G), updated to Version H:</p> <ul style="list-style-type: none"> • Section 1.1 Background and Project Description updated to reflect approval of the variation to EPBC 2020/8839 dated 14 January 2025 • Section 2.2 Objectives updated to reflect that EPBC 2020/8839 was varied on 14 January 2025.
<p>Construction Traffic and Transport Management Plan</p>	
<p>Consistency Assessment – Proposed Design and Boundary Changes</p>	<p>Construction Traffic and Transport Management Plan (Version G), updated to Version H:</p> <ul style="list-style-type: none"> • Figure 1.1: Project location. Figure updated to reflect revised construction footprint.

Reason for update	Plan, version and section subject to minor update
	<ul style="list-style-type: none"> Figure 1.2: Project layout. Figure updated to reflect revised construction footprint. Figure 4.1: Key intersections. Figure updated to reflect revised construction footprint.
<p>EPBC Act 2020/8839 variation, dated 14 January 2025.</p>	<p>Construction Traffic and Transport Management Plan (Version G), updated to Version H:</p> <ul style="list-style-type: none"> Section 1.1 Background and Project Description updated to reflect approval of the variation to EPBC 2020/8839 dated 14 January 2025 Section 2.2 Objectives updated to reflect that EPBC 2020/8839 was varied on 14 January 2025.
<p>Construction Noise and Vibration Management Plan</p>	
<p>Consistency Assessment – Proposed Design and Boundary Changes</p>	<p>Construction Noise and Vibration Management Plan (Version G), updated to Version H:</p> <ul style="list-style-type: none"> Figure 1.1: Project location. Figure updated to reflect revised construction footprint. Figure 1.2: Project layout. Figure updated to reflect revised construction footprint. Figure 4.1: Sensitive receivers and assessment and monitoring locations. Figure updated to reflect revised construction footprint. Figure 7.1: Modelled Construction Noise Contours (NVIA). Figure updated to reflect revised construction footprint. <p>Construction Noise and Vibration Monitoring Program (Version G)</p> <ul style="list-style-type: none"> Figure 2.1: Location of noise and vibration assessment and monitoring locations. Figure updated to reflect revised construction footprint.
<p>EPBC Act 2020/8839 variation, dated 14 January 2025.</p>	<p>Construction Noise and Vibration Management Plan (Version G), updated to Version H:</p> <ul style="list-style-type: none"> Section 1.1 Background and Project Description updated to reflect approval of the variation to EPBC 2020/8839 dated 14 January 2025 Section 2.2 Objectives updated to reflect that EPBC 2020/8839 was varied on 14 January 2025.
<p>Construction Heritage Management Plan</p>	
<p>Consistency Assessment – Proposed Design and Boundary Changes</p>	<p>Construction Heritage Management Plan (Version H), updated to Version I:</p> <ul style="list-style-type: none"> Figure 1.1: Project location. Figure updated to reflect revised construction footprint. Figure 1.2: Project layout. Figure updated to reflect revised construction footprint. Figure 4.1 (previously Figure 4.2): Location of Non-Aboriginal heritage sites and items. Figure renamed as Figure 4.1 and updated to reflect revised construction footprint.

Reason for update	Plan, version and section subject to minor update
Moorebank Avenue Realignment Works Surface Collection Completion Memo	<p>Construction Heritage Management Plan (Version H), updated to Version I</p> <p>The following updates have been made in response to completion of surface collection activities on 19 August 2024 in accordance with Section 6.1.1 of the CHMP, Appendix A of Infrastructure Approval SSI-10053 and REMM ABH01, during which no Aboriginal objects were identified and an Aboriginal Site Impact Recording Form (ASIRF) was submitted to AHIMS to note the revised status of these sites.</p> <ul style="list-style-type: none"> • Section 4.1 – Update to include reference to Artefact Moorebank Avenue Realignment Works Surface Collection Completion Memo (30 August 2024) • Section 4.2.1.2 Known Aboriginal Cultural Heritage Values – Project Site updated to reflect that there are now no known Aboriginal sites within the Project Site (previous desktop and field investigations identified six remaining sites). • Section 4.2 – Removal of Figure 4.1: Location of Aboriginal sites and isolated finds across the Project • Section 5.2.1 Aboriginal Heritage Impacts revised to reflect that no known Aboriginal sites are identified within the construction boundary and therefore no impacts to Aboriginal heritage associated with Project construction are anticipated. • Section 5.3 Cumulative impacts revised to reword paragraph three and remove reference to “...the Aboriginal items identified within the Project Site...” • Section 6.1 Management of Aboriginal Cultural Heritage Risks updated to remove inference that there are known Aboriginal heritage objects on the Project Site • Section 6.1.1 Salvage of Aboriginal Objects updated to reflect that surface collection activities are now complete and no Aboriginal objects were identified. • Section 6.1.2 Care of Salvaged Aboriginal Objects updated to reflect that surface collection activities are now complete and, as no objects were identified, no temporary storage locations were required for the storage of collected objects. • Section 7.5, Table 7.1 reference to Heritage Salvage Report retained, but reference to six Aboriginal sites removed
EPBC Act 2020/8839 variation, dated 14 January 2025.	<p>Construction Heritage Management Plan (Version H), updated to Version I</p> <ul style="list-style-type: none"> • Section 1.1 Background and Project Description updated to reflect approval of the variation to EPBC 2020/8839 dated 14 January 2025 • Section 2.2 Objectives updated to reflect that EPBC 2020/8839 was varied on 14 January 2025.
Construction Soil and Water Management Plan	
Consistency Assessment – Proposed Design and Boundary Changes	<p>Construction Soil and Water Management Plan (Version D), updated to Version E:</p> <ul style="list-style-type: none"> • Figure 1.1: Project location. Figure updated to reflect revised construction footprint.

Reason for update	Plan, version and section subject to minor update
	<ul style="list-style-type: none"> Figure 1.2: Project Layout. Figure updated to reflect revised construction footprint. Figure 4.1: Nearby Waterways. Figure updated to reflect revised construction footprint. Figure 4.2: Groundwater dependent ecosystems. Figure updated to reflect revised construction footprint. <p>Construction Surface Water Monitoring Program (Version D), updated to Version E:</p> <ul style="list-style-type: none"> Figure 3.1: Proposed Monitoring Locations. Figure updated to reflect revised construction footprint. <p>NOTE: Appendix F Preliminary Erosion and Sediment Control Plan is not proposed for update as this effort is unwarranted given Progressive Erosion and Sediment Control Plans will be developed reflecting the revised construction footprint.</p>
<p>EPBC Act 2020/8839 variation, dated 14 January 2025.</p>	<p>Construction Soil and Water Management Plan (Version D), updated to Version E:</p> <ul style="list-style-type: none"> Section 1.1 Background and Project Description updated to reflect approval of the variation to EPBC 2020/8839 dated 14 January 2025 Section 2.2 Objectives updated to reflect that EPBC 2020/8839 was varied on 14 January 2025.
<p>Contamination Management Sub-Plan</p>	
<p>Consistency Assessment – Proposed Design and Boundary Changes</p>	<p>Contamination Management Sub-Plan (Version D), updated to Version E:</p> <ul style="list-style-type: none"> Figure 1.1: Project location. Figure updated to reflect revised construction footprint. Figure 1.2: Project Layout. Figure updated to reflect revised construction footprint. Figure 4.1: Sources of potential contamination. Figure updated to reflect revised construction footprint.
<p>Moorebank Avenue Realignment Remediation Action Plan (Rev C)</p>	<p>Contamination Management Sub-Plan (Version D), updated to Version E:</p> <p>The following updates have been made as a result of preparation of the Interim Audit Advice and the Remediation Action Plan (RAP).</p> <ul style="list-style-type: none"> Section 1.5.1 Interactions with Other Management Plans and Documents updated to confirm that a RAP has been prepared Section 6.1 Targeted Site Investigations updated to reflect completion of the Interim Audit Advice verifying the appropriateness of the SAQP (Condition E33), and completion of the targeted investigations required and subsequent reporting of findings (Condition E34). A summary of the key remediation recommendations has been included. <p>Section 6.2 Remediation Action Plan updated to reflect preparation of a RAP in accordance with NSW Condition E35, E36, E37 and E38.</p>

Reason for update	Plan, version and section subject to minor update
<p>EPBC Act 2020/8839 variation, dated 14 January 2025.</p>	<p>Contamination Management Sub-Plan (Version D), updated to Version E:</p> <ul style="list-style-type: none"> Section 1.1 Background and Project Description updated to reflect approval of the variation to EPBC 2020/8839 dated 14 January 2025 Section 2.2 Objectives updated to reflect that EPBC 2020/8839 was varied on 14 January 2025.
<p>Construction Bushfire Management Plan</p>	
<p>Consistency Assessment – Proposed Design and Boundary Changes</p>	<p>Construction Bushfire Management Plan (Version E), updated to Version F:</p> <ul style="list-style-type: none"> Figure 1.1: Project location. Figure updated to reflect revised construction footprint. Figure 1.2: Project layout. Figure updated to reflect revised construction footprint. Figure 4.2: Project Bushfire Prone Land Map. Figure updated to reflect revised construction footprint. Figure 6.1: Assembly Points and Evacuation Route. Figure updated to reflect revised construction footprint.
<p>EPBC Act 2020/8839 variation, dated 14 January 2025.</p>	<p>Construction Bushfire Management Plan (Version E), updated to Version F:</p> <ul style="list-style-type: none"> Section 1.1 Background and Project Description updated to reflect approval of the variation to EPBC 2020/8839 dated 14 January 2025 Section 2.2 Objectives updated to reflect that EPBC 2020/8839 was varied on 14 January 2025.
<p>Construction Air Quality Management Plan</p>	
<p>Consistency Assessment – Proposed Design and Boundary Changes</p>	<p>Construction Air Quality Management Plan (Version E), updated to Version F:</p> <ul style="list-style-type: none"> Figure 1.1: Project location. Figure updated to reflect revised construction footprint. Figure 1.2: Project layout. Figure updated to reflect revised construction footprint. Figure 4.1: Receptors for construction impacts. Figure updated to reflect revised construction footprint.
<p>EPBC Act 2020/8839 variation, dated 14 January 2025.</p>	<p>Construction Air Quality Management Plan (Version E), updated to Version F:</p> <ul style="list-style-type: none"> Section 1.1 Background and Project Description updated to reflect approval of the variation to EPBC 2020/8839 dated 14 January 2025 Section 2.2 Objectives updated to reflect that EPBC 2020/8839 was varied on 14 January 2025.
<p>Construction Waste and Resource Management Sub-Plan</p>	
<p>Consistency Assessment – Proposed Design and Boundary Changes</p>	<p>Construction Waste and Resource Management Sub-Plan (Version D), updated to Version E:</p> <ul style="list-style-type: none"> Figure 1.1: Project location. Figure updated to reflect revised construction footprint.

Reason for update	Plan, version and section subject to minor update
	<ul style="list-style-type: none"> Figure 1.2: Project layout. Figure updated to reflect revised construction footprint.
EPBC Act 2020/8839 variation, dated 14 January 2025.	<p>Construction Waste and Resource Management Sub-Plan (Version D), updated to Version E:</p> <ul style="list-style-type: none"> Section 1.1 Background and Project Description updated to reflect approval of the variation to EPBC 2020/8839 dated 14 January 2025 Section 2.2 Objectives updated to reflect that EPBC 2020/8839 was varied on 14 January 2025.

APPENDIX B Secondary CoA and REMMs

B1: Secondary NSW CoA relevant to the CTTMP

No.	Requirements	Document reference
A5	Where the terms of this approval require a document or monitoring program to be prepared or a review to be undertaken in consultation with identified parties, evidence of the consultation undertaken must be submitted to the Planning Secretary with the document. The evidence must include:	Section 1.6
(a)	documentation of the engagement with the party identified in the condition of approval that has occurred before submitting the document for approval;	Section 1.6
(b)	a log of the dates of engagement or attempted engagement with the identified party;	Section 1.6
(c)	documentation of the follow-up with the identified party where engagement has not occurred to confirm that they do not wish to engage or have not attempted to engage after repeated invitations;	Section 1.6
(d)	outline of the issues raised by the identified party and how they have been addressed; and	Section 1.6
(e)	a description of the outstanding issues raised by the identified party and the reasons why they have not been addressed.	Section 1.6
C8	<p>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.</p> <p><i>Note: The Planning Secretary will consider the assessment of the predicted level of environmental risk and potential level of community concern required under Condition A14(e) when deciding whether any CEMP Sub-plans may be endorsed by the ER.</i></p>	Section 1.5 Appendix A
C9	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 1.5 Appendix A
C10	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 1.5 Appendix A
C11	Construction must not commence until the CEMP and all CEMP Sub-plans have been approved by the Planning Secretary or endorsed by the ER (whichever is applicable), unless otherwise agreed by the Planning Secretary. The CEMP and CEMP Sub-plans, as approved by the Planning Secretary or endorsed by the ER (whichever is applicable), including any minor amendments approved by the ER, must be implemented for the duration of construction.	Section 1.5 Appendix A
E1	Measures must be implemented to minimise and manage the emission of dust, odour and other air pollutants during construction.	Requirements 4, 5 and 8 to 12 of Table 6.1

B2: Secondary REMMs relevant to the CAQMP

No.	Requirements	Timing	Document reference
AIR03	A complaints logbook will be maintained throughout the construction phase which should include any complaints related to dust. Where a dust complaint is received, the details of the response actions to the complaint should be detailed in the logbook.	Construction	Section 7.7
AIR04	The Project will record any exceptional incidents ⁶ that cause dust and/or air emissions, either on or off site, and the action taken to resolve the situation in the logbook.	Construction	Requirements 2 and 3 of Table 6.1 Section 7.6
AIR05	The Project will hold regular meetings with the operators of other high-risk construction sites within 500 m of the Project site boundary (if applicable) to ensure that cumulative particulate matter emissions are minimised.	Construction	Section 5.5
AIR07	Shade cloth barriers to site fences will be erected around potentially dusty activities such as trench excavations and material stockpiles where practicable.	Construction	Requirement 5 of Table 6.1
AIR08	Site fencing and barriers will be kept clean using wet methods.	Construction	Requirement 4 of Table 6.1
AIR09	A maximum-speed-limit of 20 km/h on all internal roads and work areas during construction will be implemented.	Construction	Requirement 6 of Table 6.1
AIR10	Proper maintenance and tuning of all equipment engines will be undertaken.	Construction	Requirements 10 and 11 of Table 6.1
AIR11	Water carts will be deployed to ensure that exposed areas and topsoils/subsoil are kept moist.	Construction	Requirement 4 of Table 6.1
AIR12	Adequate water supply on the construction site will be provided for effective dust/particulate matter suppression/mitigation.	Construction	Requirements 4 and 5 of Table 6.1
AIR13	Working practices will be modified to limit clearing, stripping and spoil handling during periods of adverse weather (hot, dry and windy conditions) and when dust is seen leaving the Project site.	Construction	Requirements 1 and 4 of Table 6.1
AIR15	Drop heights from loading or handling equipment will be minimised.	Construction	Requirement 4 of Table 6.1
AIR17	Water-assisted dust sweeper(s) will be utilised to remove, as necessary, any material tracked out of the Project Site.	Construction	Requirement 4 of Table 6.1
AIR18	Dry sweeping of large areas will be avoided.	Construction	Requirement 4 of Table 6.1
AIR20	All trucks delivering fill or leaving the Project site with spoil material will have their load covered.	Construction	Requirement 7 of Table 6.1
AIR21	Daily on-site and off-site inspections, where receptors are nearby, will be undertaken to monitor dust. The inspection results will be recorded in a specific log. Inspections will include regular dust soiling checks of surfaces such as street furniture and cars.	Construction	Requirement 2 of Table 6.1
AIR22	At the commencement of each day's activities, the local meteorological forecast will be reviewed, including the timing of	Construction	Requirement 1 of Table 6.1

⁶ It is noted that "exceptional incidents" is not a defined term. As such, all incidents will be managed in accordance with the incident management procedure (Section 6 of the CEMP).

No.	Requirements	Timing	Document reference
	notable increases in wind speed and/or temperature. Appropriate increased intensity or additional mitigation measures will be planned for the day based on this forecast review. The likely meteorological conditions and implications for dust emissions and impacts will be discussed at the morning toolbox meeting.		Section 7.3
AIR23	Site inspections will occur at increased frequencies when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions. Should notable visual dust emissions be observed leaving the Project site, increased intensity or additional mitigation measures will be deployed.	Construction	Requirements 1 and 3 of Table 6.1

