

JHCPB Joint Venture

Dust Deposition Monitoring Program

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Glossary/Abbreviations

Abbreviation	Expanded text
AQMP	Air Quality Management Sub-plan
CEMP	Construction Environmental Management Plan
CoA	Conditions of Approval
DDMP	Dust Deposition Monitoring Program (this Program)
DPIE	Department of Planning, Industry and Environment
EIS	WestConnex M4-M5 Link Environmental Impact Statement
EPA	NSW Environment Protection Authority
EPL	Environment Protection Licence
JHCPB	John Holland CPB Contractors Joint Venture
REMMs	Revised Environmental Management Measures
Roads and Maritime	NSW Roads and Maritime Services
SPIR	WestConnex M4-M5 Link Submissions and Preferred Infrastructure Report

1. Introduction

1.1. Context

This Dust Deposition Monitoring Program (DDMP or Program) has been prepared for the construction stage of the WestConnex Rozelle Interchange (the Project). The Program forms Annexure B of the Air Quality Management Sub-plan (AQMP).

The DDMP addresses the requirements of the Minister's Conditions of Approval (CoA), the WestConnex M4-M5 Link Environmental Impact Statement (EIS), the Revised Environmental Management Measures (REMMs) listed in the WestConnex M4-M5 Link Submissions and Preferred Infrastructure Report (SPIR) and applicable guidelines and legislation.

2. Purpose and objectives

2.1. Purpose

The purpose of the DDMP is to describe how JHCPB propose to monitor dust deposition during construction of the Project.

The DDMP will be implemented to monitor the effectiveness of mitigation measures applied during the construction phase of the Project. Monitoring of dust deposition will be undertaken to identify potential impacts and ensure an appropriate management regime can be implemented to address those impacts and manage local air quality.

This Program provides details of the dust deposition monitoring network, frequency of monitoring, and test parameters. This DDMP supplements the AQMP, which itself is an appendix of the Construction Environmental Management Plan (CEMP).

Operational monitoring and operation measures do not fall within the scope of the construction phase and therefore are not included within the processes contained within this DDMP.

2.2. Objectives

The key objective of this DDMP is to ensure that CoA, REMMs, and licence/permit requirements relating to dust deposition monitoring are described, scheduled, and assigned responsibility as outlined in:

- The EIS prepared for WestConnex M4-M5 Link,
- The SPIR prepared for WestConnex M4-M5 Link,
- The CoA granted to the project on 17 April 2018, as modified on 25 February 2019,
- Roads and Maritime Specifications G36 and G40,
- The Project's Environment Protection Licence (EPL), and
- Relevant legislation and other requirements described in Section 3 of the AQMP.

2.3. Consultation

This Program has been provided to the NSW Environment Protection Authority (EPA) as part of the Air Quality Management Plan (AQMP) in accordance with CoA C9(e). The EPA stated that it is not EPA policy to review management plans. Refer to Section 2 of the CEMP for the consultation requirements relating to the CEMP and all sub-plans.

Ongoing consultation with relevant councils (City of Sydney Council and Inner West Council) and other stakeholders, including any unique local receivers (e.g. residents and schools), may be undertaken for particular issues pertaining to the Project's impact on local air quality. Community feedback and complaints relating to local air quality will be dealt with in accordance with the Communication Strategy and Complaints Management System.

3. Dust deposition monitoring

3.1. Baseline monitoring

Baseline monitoring data for dust deposition was not undertaken during the EIS. Additionally, a review of the EPA's Sydney air quality monitoring stations identified that the EPA do not measure dust deposition as part of their air quality monitoring program. Therefore, no baseline data for dust deposition has been presented.

The EPA criteria of $4\text{g}/\text{m}^2/\text{month}$ as detailed in the *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales* (2016) will be used in place of baseline data.

3.2. Construction monitoring

3.2.1. Overview

Dust deposition gauges record airborne dust which can be derived from construction activities and provide a useful measure of changing local air quality. A total network of five dust deposition gauges will be installed during construction of the Project (refer to Section 4.1).

Data from these gauges enables determination of dust deposition levels at the relevant ancillary facility. Data will be collected on a monthly basis, and results for dust deposition will be compared against the criterion and reported in the Dust Deposition Monitoring Reports prepared every six months (Section 5.5).

3.2.2. Performance criteria

The EPA expresses dust deposition criteria in two ways. Firstly; in terms of an acceptable increase in dust deposition over the existing background/baseline deposition levels. As background/baseline dust deposition levels are not available this criterion has not currently been adopted.

The second criterion is a measure of maximum total dust deposition levels. This criterion has currently been adopted for the Project. The long-term (annual average) EPA criterion for depositional dust that applies to the Project is provided in Table 1.

Table 1 Long-term impact assessment criterion for deposited dust

Pollutant	Averaging period	Maximum total* deposited dust level
Deposited dust	Annual	$4\text{g}/\text{m}^2/\text{month}$

* Total impact (i.e. concentrations due to the Project plus background concentrations due to other sources)

Monitoring will be undertaken on a monthly basis for the duration of construction.

The Project is located in an urban environment, and in the absence of background / baseline data, there is a potential that existing deposited dust levels may already be in exceedance of the criterion listed in Table 1.

If the above trigger is observed, a review will be initiated to determine the significance of the exceedance(s) and possible causes. The review will assess the available dust deposition data, recent weather records, and recent activities or recorded air quality control incidents occurring at the relevant ancillary facility. In addition, the review will also identify what, if any dust minimisation improvements can be made.

4. Monitoring methodology / Sampling protocol

4.1. Monitoring locations

Monitoring will be undertaken using dust deposition gauges located at each of the Project ancillary facilities as identified in Table 2 and shown in Figure 1.

Table 2 Dust deposition gauges proposed location

Ancillary facility	Description
Rozelle civil and tunnel site (C5)	Two (2) gauges will be installed within the Rozelle civil and tunnel site on the 'northern' / Lilyfield Road side of the site. One gauge will be located in the eastern half of the site and one gauge in the western half of the site.
The Crescent civil site (C6)	One (1) gauge will be installed within The Crescent civil site. This gauge is also expected to capture any potential dust deposition from the 'southern' / City West Link side of the Rozelle civil and tunnel site.
Victoria Road civil site (C7)	One (1) gauge will be installed within the Victoria Road civil site.

The specific locations for each of the sampling locations will be selected in accordance with AS/NZS 3580.1.1 2016, *Methods for Sampling and analysis of ambient air – Guide to siting air monitoring equipment*, as far as practicable. The requirements for AS/NZS 3580.1.1 2016 are outlined in Table 3. The specific sampling locations will be determined in consultation with the Project's Environmental Representative.

Table 3 Locating criteria

Pollutant	Type of Monitoring Station	Height above ground	Other locating criteria (minimum requirements)*
Deposited matter	Peak, neighbourhood and background	1.8 – 2.2m	<ul style="list-style-type: none"> ▪ Clear sky angle 120° ▪ Unrestricted airflow of 360° around sample gauge ▪ 10m from nearest object or tree dripline ▪ 5m from road ▪ No boiler or incinerator flues nearby

* As detailed in AS/NZS 3580.1.1 2016, where these distances are not possible justification will be provided as to site selection.



Figure 1 Indicative Dust Deposition Gauge Locations

4.2. Sample collection and laboratory analysis

The dust deposition gauges will be collected, and replaced, from site every 30 ± 2 days and then analysed for insoluble solids.

Analysis will be undertaken by a National Association of Testing Authorities (NATA) accredited laboratory. Monitoring for depositional dust must comply with AS/NZS 3580.10.1 2016, *Methods for sampling and analysis of ambient air – Determination of particulates – Deposited Matter – Gravimetric Method* and the NSW EPA *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales* (2016).

4.3. Quality Assurance and documentation

Any sample to be sent to a laboratory will be subject to quality assurance protocols.

Quality assurance and control protocols during sampling and recording parameters will be undertaken with each sampling event in accordance with AS/NZS 3580.10.1 2016, *Methods for sampling and analysis of ambient air – Determination of particulates – Deposited Matter – Gravimetric Method* to ensure the integrity of the dataset.

Samples are to be transported to a NATA-accredited laboratory under documented chain-of-custody protocols.

Monitoring records will be maintained in accordance with the appropriate standard.

5. Compliance management

5.1. Roles, responsibilities and training

The JHCPB Project Team's organisational structure and overall roles and responsibilities are outlined in Section 3.3 of the CEMP. Specific responsibilities for the implementation of environmental controls are detailed in AQMP.

All employees, contractors and utility staff working on site will undergo site induction and targeted training relating to air quality issues, detailed in the AQMP.

Further details regarding staff induction and training are outlined in Section 3.5 of the CEMP.

5.2. Monitoring and inspection

This Program details the monitoring requirements for dust deposition.

Additional requirements and responsibilities in relation to inspections are documented in Section 3.8.1 and Section 3.8.2 of the CEMP.

5.3. Data analysis and management responses

Results from the construction monitoring program will be compared with the criterion identified in Table 1 and with results previously recorded on the project.

Monthly monitoring results for dust deposition will be compared against the criterion and reported in the Dust Deposition Monitoring Reports (Section 5.5). If a trigger is observed (see Section 3.2.2), a review will be initiated to determine the significance of the exceedance(s) and possible causes.

The review will assess available dust deposition data, recent weather data, and recent activities or air quality incidents occurring at the relevant ancillary facility site.

If the exceedance is determined to be attributable to Project works, the event will be treated as an environmental incident and managed in accordance with the requirements of the CEMP. Corrective and preventative actions will be identified and implemented as part of that process.

5.4. Auditing

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

Audit requirements are detailed in Section 3.9.3 of the CEMP.

5.5. Reporting

During construction, dust deposition data will be collected, tabulated and assessed against the criterion identified in Table 1. Monitoring reports will be submitted to DPIE, EPA and Port Authority within 30 days of the reporting period unless otherwise agreed with DPIE.

Reporting requirements associated with the Program for the construction phase of the Project are presented in Table 4.

Table 4 Reporting requirements

Schedule (during construction)	Requirements	Recipient (relevant authority)
Dust Deposition Monitoring Reports (every six months)	Data summary reports presenting tabulated dust deposition data collected during the reporting period. Dust deposition monitoring exceedance results will be presented. Applicable management responses will be documented.	EPA, DPIE, Port Authority

6. Review and improvement

6.1. Continuous improvement

Continuous improvement of this Program will be achieved by the ongoing evaluation of environmental management performance against environmental policies, objectives and targets, and the Project performance outcomes of the EIS 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-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, and
- Make comparisons with objectives and targets.

6.2. DDMP update and amendment

The processes described in Section 3.13.1 and Section 3.13.2 of the CEMP may result in the need to update or revise the Program.

Revisions of this Program will be in accordance with the process outlined in Section 3.13.1 of the CEMP.

A copy of the updated Program and changes will be distributed to all relevant stakeholders in accordance with the approved document control procedure – refer to Section 3.11.2 of the CEMP.