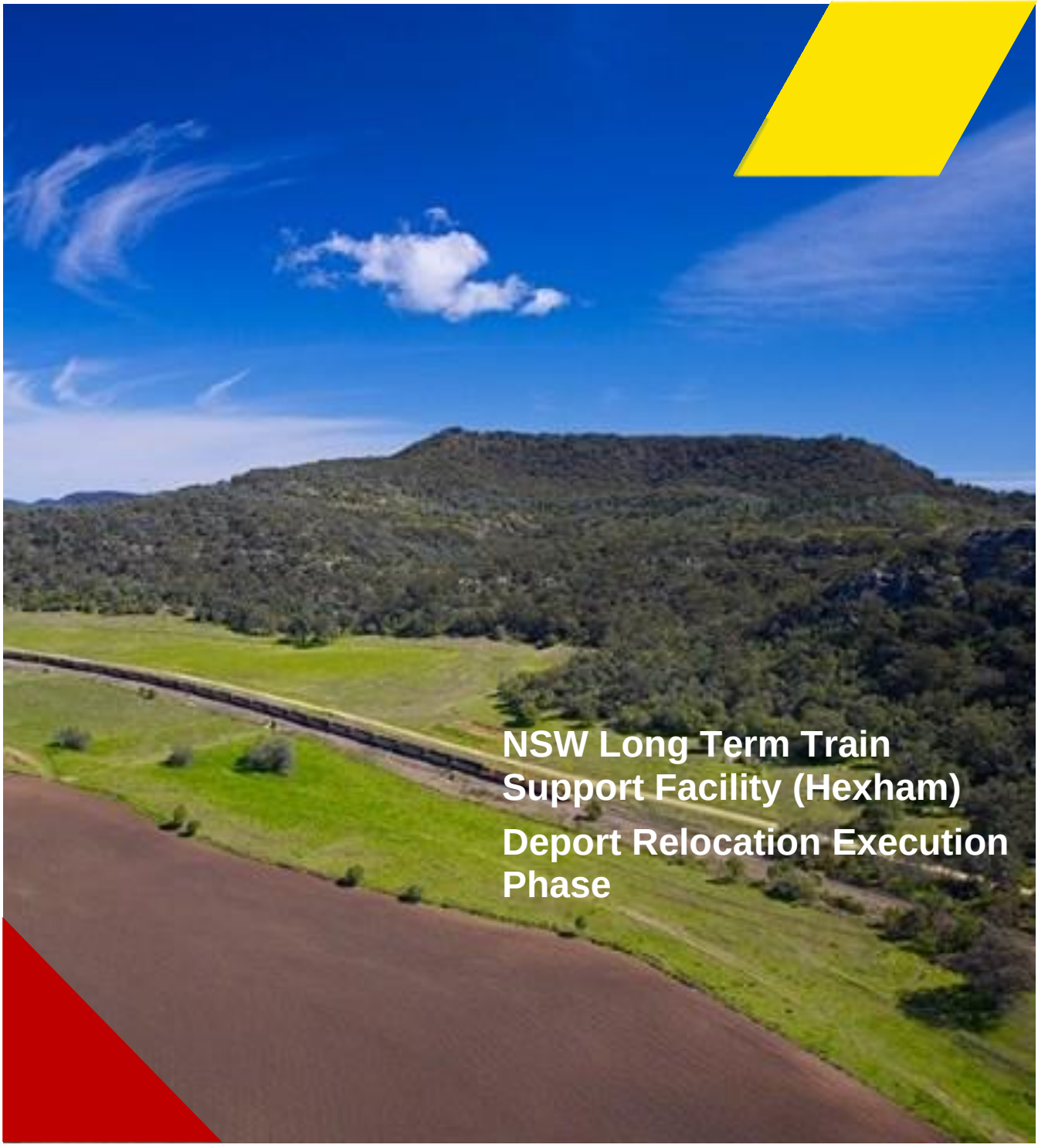
August 2022

Construction Air Quality Management Plan



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Document Approval/ Sign Off

Position	Name	Signature	Date
Project Manager	Rachel Lauritzen	Digitally signed by Rachel Lauritzen Date: 2022.10.26 13:54:00 +10'00'	

Version Control

Date	Version	Author	Comments
10/08/22	1	Harry Egan	

1.0 Purpose

This Construction Air Quality Management Plan (CAQMP) supplements the Project Construction Environmental Management Plan (CEMP) for the construction phase of the NSW Long Term Train Support Facility (TSF) Depot Relocation (the Project). This CAQMP is based on the following

- Hexham Train Support Facility Air Quality Assessment (SLR, September 2012);
- NSW TSF Environmental Assessment (ADW Johnson, 2012);
- State Significant Infrastructure – Modification: Detailed Environmental Assessment Report (Ethos Urban, June 2019); and
- Section 5.25 Modification to SSI-6090: Hexham Long Term Train Support Facility-Ancillary Depot and Wagon Storage (Ethos Urban, 08 April 2022).

This CAQMP details background air quality levels applicable to the project, potential air quality impacts of the project and applicable mitigation measures.

This CAQMP addresses the relevant Ministers Conditions of Approval (MCoA) as shown in Table 1.1.

Table 1.1 Relevant Ministers Conditions of Approval

MCoA	Task Detail	Where addressed
E55	The Proponent shall construct the SSI in a manner that minimises, as far as practicable, dust emissions from the site, including wind-blown and traffic-generated dust, dust from stockpiles, and dust from the tracking of materials from the construction site onto public roads.	Section 2.2
E56	Should such visible dust emissions occur at any time, the Proponent shall identify and implement all feasible and reasonable dust mitigation measures (including temporary cessation of relevant works) such that emissions of visible dust cease.	Section 3.1
E57	The Proponent shall ensure that plant and equipment used in connection with the construction of the SSI is maintained and operated in a proper and efficient condition to minimise air quality impacts.	Section 3.1

1.1. Indicative Construction Activities Schedule

The project is expected to be completed over a nominal duration of 7 months from approval. A range of activities with varying impacts on air quality are required in that time as summarised in Table 1.2.

Table 1.2 Indicative Construction Stages and Scheduling

Construction Phase	Activity	Indicative Schedule
Mobilisation	• Tarro interchange dilapidation survey • Delineation of sensitive areas • Site establishment	November 2022
Civil Earthworks	• Clear and grub • Strip topsoil • Bulk earthworks • Civil stormwater and services reticulation	November 2022 to December 2023
Construction	• Construction: • Stage 1 - Depot	December 2022 – August 2023

Construction Phase	Activity	Indicative Schedule
	• Stage 2 - Warehouse of depot • Stage 3 – Carpark • Stage 4 – Heavy vehicle loading area • Stage 5a and 5b – Eastern carpark	
Demobilisation	• Site clean-up and demobilisation	May 2023

2.0 Air Quality Assessment

2.1. Sensitive Receptors

The nearest sensitive receivers potentially affected by the Turning Angle construction are shown on Figure 2.1.

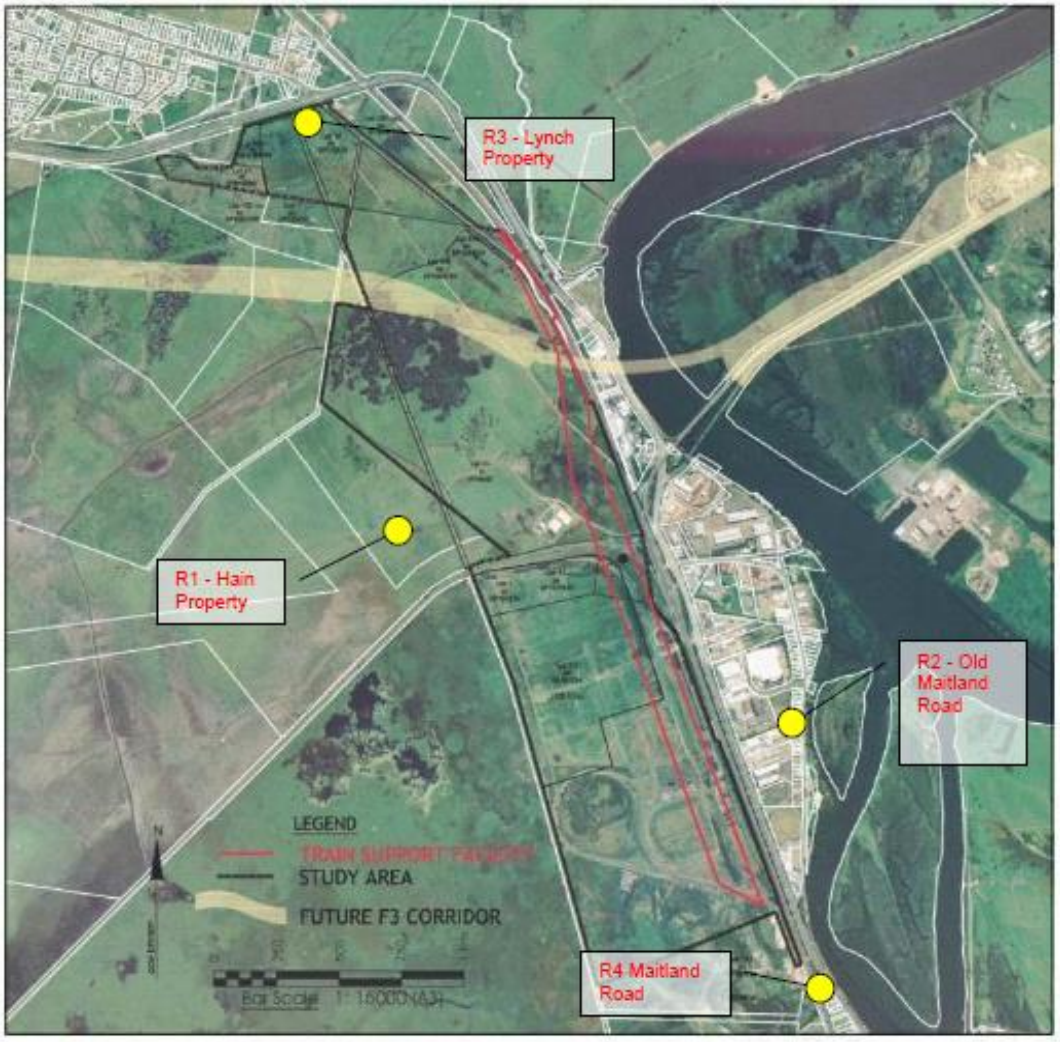

Figure 2.1 Site Locality and Sensitive Receivers

2.2. Construction Air Quality

Dust generation during construction at the site will result from various phases including:

- Road construction;
- Importing fill;
- Loading and unloading of trucks;
- Excavating;
- Use of backhoes;
- Movement of trucks on unsealed roads; and
- Wind erosion of stockpiles and exposed area.

The pre TSF and ARTC HRR background dust concentrations are provided in Table 2.1 below.

Table 2.1 Background Dust Concentrations

Air Quality Indicator	Averaging Period	Regional Background Levels Assumed
PM_{10}	24 hour	42.8 µg/m^3
	Annual	17.2 µg/m^3
Dust Deposition	Annual	2.0 g/m^3/month

2.3. Adopted Emissions Criteria

Construction activities are not expected to generate significant levels of other air pollutants (nitrogen dioxide, carbon monoxide, sulphur dioxide, volatile organic compounds). The SLR (2012) modelling for the TSF project predicted cumulative emissions (for both the former ARTC HRR and TSF Projects) well below the NSW EPA criteria for all pollutants. Therefore, the adopted construction air quality criteria relate to dust emissions has been identified as appropriate for the Project (Table 2.2 below).

The adopted emissions criteria is shown in Table 2.2 below and will be assessed at the nearest offsite sensitive receivers identified in Figure 2.1 above upon receipt of a community complaint or identification of offsite impacts.

Table 2.2 Adopted Dust Emission Criteria

Pollutant	Averaging Time	Maximum Allowable Concentration
PM10	24 hour	50 µg/m3(1)
PM10	Annual	30 µg/m3(1)
Deposited Dust	Annual	4 g/m3/month(2)

(1) NSW EPA and National Environment Protection Measure (NEPM) reporting standard.
(2) *Approved Methods and Guidelines for the Modelling and Assessment of Air pollutants in NSW* (DEC 2005).

3.0 Environmental Impacts and Controls

3.1. Environmental Control Measures

Table 3.1 below details the specific air quality control measures. The mitigation measures are designed to ameliorate impacts on sensitive receivers. The strategies are based on the recommendations of the EA, the Minister's Conditions of Approval and the Statement of Commitments.

Table 3.1 Environmental Control Measures

Environmental Control Measure	Person Responsible	Timing/Frequency	Completed (initials/date)
Training and Induction			
Provide an induction to site personnel addressing the requirements of this CAQMP and their responsibilities with regard to noise and vibration management.	Contractor	Daily or as required	
Provide education of supervisors, operators and sub-contractors on the need to minimise noise through Toolbox meetings and on-site coaching.	Contractor	Monthly	
Ensure employees and contractors are appropriately trained in the use of equipment in ways to minimise dust.	Contractor	As required	
Work Practice			
Activities carried out on site will be undertaken in a manner that will ensure that all equipment used, and all facilities erected, are designed and operated to control the emission of smoke, dust, fumes and other pollutants into the atmosphere	Contractor	Daily	
Access roads will be sealed where practical. Unsealed tracks will be regularly watered, with the frequency determined by local climatic conditions and rainfall received, to minimise dust generation.	Contractor	Daily or as required	
Disturbed areas will be stabilised as soon as possible.	Contractor	Immediately	
Wind breaks composed of earth banks and other screens will be used to protect areas from wind erosion as required.	Contractor	Daily	
Trucks entering and leaving the site will be well maintained in accordance with the manufacturer's specification to comply with all relevant regulations.	Contractor	As required	
Restrict vehicle movements on site to designated access roads.	Contractor	Daily	
Vehicle speeds onsite will be controlled and enforced.	Contractor	As required	
Truck wheel washes or other dust removal procedures will be installed to minimise transport of dust offsite if necessary.	Contractor	Daily	
All soil transported to or from site will be covered.	Contractor	Daily	

Environmental Control Measure	Person Responsible	Timing/Frequency	Completed (initials/date)
Cease soil stripping in periods of high wind.	Contractor	Immediate	
Stockpiles and handling areas will be maintained in a condition which minimises windblown or traffic generated dust.	Contractor	Monthly	
Silt will be removed from behind sediment fences and other erosion control structures on a weekly basis (with changes in frequency determined by amount and duration of rainfall received), to prevent it becoming a source of dust.	Contractor	Weekly	
Cleared vegetation, demolition materials and other combustible waste material will not be burnt on site.	Contractor	Daily	
Non-essential idling of construction vehicles and plant (i.e. when not in operation for periods of more than 30 minutes) will be minimised, and vehicles and plant with excessive smoke will be expeditiously repaired.	Contractor	Immediate	
Any dust or soil deposited on a public road by construction activities and vehicle movements will be removed immediately and appropriately disposed.	Contractor	Immediate	
Plant and equipment is to be inspected daily during routine start up procedures to ensure that adequately maintained dust mitigation devices are in place to minimise the potential for the generation of fugitive dust emissions.	Contractor	Daily	
Construction shall occur with the objectives of meeting air quality goals for PM10 as prescribed in the National Environment Protection (Ambient Air Quality) Measure. That is, 50 µg/m^3 for a maximum allowable exceedence of 5 days/year.	Contractor	As required	
Should visible dust emissions occur due to work practices such as excavation, clearing, traffic, etc., works in that area will temporarily cease and all feasible and reasonable dust mitigation measures will be identified and implemented to stop the emission of visible dust	Project Manager/Contractor	As required	
Monitoring			
Upon receipt of a complaint implement a dust monitoring program on a 30 day cycle during the earthworks phase of the project. Deposition gauges would be installed at locations close to the perimeter of the site. This monitoring shall be used to assess compliance with goals for dust concentration and deposition.	Senior Adviser Environment	As required	
All environmental records including monitoring and complaints records shall be kept for a period of 4 years and produced to an authorised EPA officer on	Senior Adviser Environment	As required	

Environmental Control Measure	Person Responsible	Timing/Frequency	Completed (initials/date)
demand.			
Ensure site managers regularly check the site for problems such that solutions can be quickly applied.	Contractor	Daily	
Reporting and Non-conformance			
Submit reports to the client (and OEH when requested) outlining environmental performance and compliance with the MCoA.	Senior Adviser Environment	Weekly	
Where an exceedance of dust criteria is identified, additional mitigation measures shall be implemented where required.	Contractor	As required	
Community Consultation and Complaint Handling			
A Community Communications Strategy (CCS) will be implemented for communicating the air quality management measures outlined herein and for handling dust complaints that includes recording, reporting and acting on complaints.	Senior Adviser Environment	As required	
Establish and maintain complaints management system.	Senior Adviser Environment	Before Project commencement	
Consult with potentially affected receivers at an early stage and engage effective communication strategies.	Senior Adviser Environment	Before Project commencement	

4.0 Environmental Monitoring and Reporting

4.1. Dust Monitoring

Dust monitoring will be undertaken in response to community complaints or identified offsite impacts at sensitive receivers identified in Figure 2.1.

Where monitoring is undertaken dust deposition gauges will be established to monitor air quality for a 30 day cycle ± 2 days. All required monitoring will be conducted in accordance with Australia/New Zealand Standard 3580 and DEC's (2005) Approved Method for the Sampling and Analysis of Air Pollutants in NSW, where appropriate.

Results from the monitoring will be recorded in a monitoring register and assessed against the criteria outlined in Table 2.2 of this CAQMP.

4.1.1. Exceedance Response

In the event that an exceedance of dust emissions (concentrations above those presented in Table 2.2) is recorded at any dust monitoring location, the Senior Adviser Environment will conduct an investigation into the exceedance.

The investigation will examine external influences such as weather conditions during this period and other, non-related construction or dust generating activities occurring in the vicinity of the dust monitoring station.

In the event that the investigation process concludes that there were no external influences and the dust deposition was due to construction activities, a review of the mitigation measures implemented will be carried out.

If deficiencies are identified and non-compliances with the environmental requirements and the objectives of this management plan are observed, an Environmental Issue/Incident Report will be completed as described in the CEMP and relevant actions/mitigations will be enforced.

4.2. Reporting

Reporting will be undertaken as described in the CEMP. The results of dust monitoring will be recorded and compared against the project specific criteria identified in this CAQMP. Any complaints or non-compliances will be reported.

4.2.1. Review and Improvement of the CEMP

The Senior Adviser Environment will review this Plan and its implementation at least every six months from commencement of construction. The purpose of the review is to ensure that the CEMP and sub-plans and operating system is meeting the project's statutory requirements.

The review will consider:

- Clients, site personnel and agency comments;
- Audit findings;
- Environmental monitoring records;
- Complaints;
- Incident reports;
- Corrective actions taken;
- Environmental non-conformance;
- Changes in organisational structure;

- Changes in construction methodology; and
- Changes in legislation and standards.

The Environment Representative will review the compliance reports and any proposed updates to the CEMP. The ER has authority to approve/reject minor amendments to this CEMP. Minor amendments are changes that do not have a detrimental effect on the environment or increase the risk profile.

Major changes to the CEMP will require Director-General approval.

5.0 References

- ADW Johnson (2013) Environmental Assessment, NSW Train Support Facility, 16 November 2012, Project No. 37417.
- DEC (2005) Approved Methods and Guidelines for the Modelling and Assessment of Air pollutants in NSW.
- JBA (2013) Preferred Project Report and Response to Submissions Project Application MP07_0171, Maitland Road, Hexham, PPR NSW Train Support Facility, June 2013, Ref: 12599.
- SLR Consulting Australia (2012) Hexham Train Support Facility Air Quality Assessment, 26 September 2012, Report No. 630.01858.00300-R1, Revision 5.
- State Significant Infrastructure – Modification: Detailed Environmental Assessment Report (Ethos Urban, June 2019).
- Section 5.25 Modification to SSI 6090: Hexham Long Term Train Support Facility-Ancillary Depot ang Wagon Storage (Ethos Urban 8 April 2022)

Annexure 1 – Risk Assessment

11	**Air Quality** **Note: To satisfy Condition 62(e)(i) of MP07_0171 MOD 2**	A) Construction activities resulting in the emissions of dust which impact sensitive receivers. B) Construction activities resulting in diesel emissions impacting sensitive receivers and the environment.	**Elimination** Not applied **Substitution** Not applied **Isolation** Not applied **Engineering** B) Equipment is well maintained and operated as per manufactures requirements. B) Machinery is turned off when not in use. A) All truck on public roads to be covered with tracking of mud and deposit on public roads offsite not permitted. **Administration** A) Modify or cease operational activities during high wind periods that result in dust generation. A) No burning of materials onsite permitted at any time. B) NPI and GHG reporting is undertaken as required. A) Access roads are well maintained with unsealed roads watered as required. A) Vehicle movements are restricted to 40 km/h onsite. A/B) Aurizon Complaints Log is in place to record and respond to complaints.	**Guidance:** The selected HOC is justified on the basis that the controls form part of the accepted safe system of work for the known operating environment and have valid potential to minimise the identified risk. All credible control options were considered within the hierarchy of control (HOC) as applicable to the accountable sphere of control. Controls considered but rejected: NIL	**2**	**2**	**L**	**Elimination** Not applied **Substitution** Not applied **Isolation** Not applied **Engineering** Not applied **Administration** Not applied **PPE** Not applied **<u>Control Effectiveness:</u>** SE	**Guidance:** Risk Controls are subject to ongoing due diligence in accordance with the authorised implementation and review timeframes.	Project Manager and Principal Contractor		02/12/2020

			Incidents will be managed through SHEM. A) Air quality monitoring as per the AQMP. A) Stockpiles and disturbed areas managed as per SWMP with disturbance revegetated as per the requirements of the FFMP. A) Induct personnel on air quality issues and safeguards **PPE** Not applied. **<u>Control Effectiveness:</u>** SE									