

M5 Junction 10 Improvements Scheme

Environmental Management Plan

Annex B4 - Air Quality Management Plan

TR010063 – APP 9.4

Regulation 5 (2) (q)

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Environmental Management Plan
Annex B4 - Air Quality Management Plan

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B.4. Air Quality Management Plan

B.4.1. Introduction

Purpose

- B.4.1.1. This document forms Annex B.4 of the Environmental Management Plan (EMP) (1st iteration) (Application document TR010063/APP/7.3). Annex B4 is an Air Quality Management Plan (AQMP) (1st iteration) for the M5 Junction 10 Improvements Scheme (the Scheme). This AQMP (1st iteration) will be updated by the appointed Principal Contractor (PC) into an AQMP (2nd iteration), as required by Requirement 3 of the DCO, prior to commencement of works.
- B.4.1.2. The purpose of this AQMP (1st iteration) is to detail the measures that the appointed PC would be required to adopt to control and limit nuisance at residential properties and other sensitive receptors in the vicinity of the Scheme. This AQMP applies to all construction activities related to the Scheme.

B.4.2. Structure of the air quality management plan

- B.4.2.1. This AQMP identifies the key items which will be included in the final AQMP as follows:
- Relevant legislation that relates to dust and emissions management during construction.
 - Roles and responsibilities at project and site-specific levels.
 - Construction activities and dust risk level.
 - Dust and emissions control measures.
 - Inspections and monitoring.
 - Communication and complaints arrangements.

B.4.3. Relevant legislation

- B.4.3.1. The appointed PC will need to update this section prior to construction and provide an overview of the key legislation that the Scheme has to comply with.
- B.4.3.2. A comprehensive review of legislation relevant to dust and emissions was included in Chapter 5: Air Quality of the Environmental Statement (ES) (Application document TR010063/APP/6.3).

B.4.4. Project team roles and responsibilities

- B.4.4.1. In relation to the control and management of dust and emissions to air, the appointed PC shall establish the main roles and responsibilities of site personnel to ensure the proposed control measures are being implemented during the construction activities. These are set out in Section 2 of the EMP (1st iteration) (Application document TR010063/APP/7.3) and will be established in the final AQMP. Consultation will be carried out, where necessary, with the environmental health departments of Tewkesbury Borough Council and Cheltenham Borough Council regarding the management of dust and emissions to air during construction of the Scheme.
- B.4.4.2. The implementation of a Community Engagement Plan will ensure that local residents and other affected parties are kept informed of the progress of the works.

B.4.5. Construction activities and risk level

- B.4.5.1. The study area for construction dust for the Scheme is provided in Appendix 5.2 (Application document TR010063/APP/6.15) Figure 5.2 – Construction dust assessment.
- B.4.5.2. Table B 4-1 sets out activities, and examples of the works and associated risks of emissions from site activities that could give rise to poor air quality and the risk level in accordance with DMRB LA 105 – Air Quality

Table B 4-1 - Summary of key construction activities and sources of dust from each activity and risk level

Activity	Dust type and risk	Risk level*
General Site Operations	Potential for fugitive dust / Particulate Matter arising from general site operations.	High
Muck away/ trackout	Potential for fugitive dust / Particulate Matter arising from activities on site including stockpiles, and movement of vehicles on haul roads and off site.	High
Demolition	Potential for fugitive dust / Particulate Matter arising from planned demolition works.	High
Excavation	Potential for fugitive dust / Particulate Matter arising from earthworks.	High
Construction	Potential for fugitive dust / Particulate Matter arising from construction of an all-movements junction at M5 Junction 10, a new West Cheltenham Link Road east of Junction 10 from the A4019 to the B4634 and widening of the A4019 to the east of Junction 10, including a bus lane on the A4019 eastbound carriageway from the West Cheltenham Fire Station to the Gallagher Junction.	High

*The risk level can be High or Low according to DMRB LA105 guidance (Table 2.58b) depending on the distance of the sensitive receptor to the construction activities. For projects with a large construction dust risk potential such as this one, the risk level is high where receptors are within 100 metres, and low where they are within 100 – 200 metres.

B.4.6. Dust and emissions control measures

- B.4.6.1. The measures that are set out in Table B 4-2 are considered appropriate for a high-risk site, as identified in the Dust Risk Assessment, presented in Chapter 5: Air Quality of the ES (Application document TR010063/APP/6.3).
- B.4.6.2. The appointed PC shall observe the requirement to use Best Practical Means (BPM) by providing for and adopting all necessary means to prevent a statutory nuisance occurring from the site.

Table B 4-2 - Control measures to be implemented during the construction activities

Activity	Control
General Site Operations	Control of Dust Emissions from General Site Operations: <ul style="list-style-type: none"> • Implement a no burning policy on site. • Equipment that is likely to generate excessive quantities of dust will be enclosed, shielded or where appropriate fitted with dust extractors, filters or scrubbers, which shall be maintained in accordance with manufacturer's specifications. • Keep the number of material handling operations to a minimum. • Undertake cutting and grinding operations using equipment and techniques which suppress and reduce dust emissions.

Activity	Control
	<ul style="list-style-type: none"> • Where appropriate, erect and maintain windbreaks, netting screens or semi-permeable fences to effectively reduce dust emissions from working areas and/or to screen sensitive location. • Where necessary employ water sprays to control dust generated during earthworks. • Minimise drop heights of soils and excavated material into vehicles. • Sheet vehicles taking soils and friable material from site at all times • Avoid site runoff of water or mud. • Damping down of surfaces prior to their being worked. • Control of dust emissions from materials storage/ stockpiling and handling areas. • Store aggregates, sand and spoil with adequate protection from the wind and, where practicable, within buildings. • Storing dusty materials away from site boundaries and in appropriate containment (e.g. sheeting, sacks, barrels etc.). • Maintain slopes of stockpiles, tips and mounds at an angle not greater than the natural angle of repose and avoid creating sharp changes of shape. • Aim to minimise any double handling of soils and other friable materials. • Minimise the amount of excavated material stockpiled and dampen the surfaces of stockpiles of dry friable materials by controlled application of water sprays or alternatively, shroud or screen stockpiles. • Maintain handling areas to reduce the risk of dust emissions using static misting systems, bowsers and other watering methods as necessary to reduce or prevent dust emissions. <p>Control of Dust Emissions from Haul Roads and Vehicle Movements on Site:</p> <ul style="list-style-type: none"> • Enforcing speed limits for vehicles on unmade surfaces and site haul roads to minimise dust entrainment and dispersion. • Sheeting vehicles carrying dusty materials to prevent materials being blown from the vehicles whilst travelling. • Ensure all vehicles switch off engines when stationary. <p>Control of Exhaust Emissions from Vehicles and Plant/ Equipment:</p> <ul style="list-style-type: none"> • Select a suitable supplier in accordance with the Procurement Policy. • Select and procure plant and equipment with the least potential for dust and other pollutant emissions, allowing for economic constraints and practicability. • Use plant and equipment powered by mains electricity or battery powered whenever practicable. • Request the power output and EU staged emissions classification of the equipment. Where equipment is under 37 kW output no action is required, but where it is above 37 kW output the supplier is informed of the need to fit Diesel Particulate Filter (DPF) device. • Use low emission fuels such as ultra-low sulphur fuels for all non-road mobile machinery (NRMM). • Use plant fitted with catalysts, DPF and similar devices as listed by the Energy Saving Trust for NRMM with a power output greater than 37kW, where practicable. Ensure the process for managing this is detailed in the contractor's relevant plans and procedures.

Activity	Control
	<ul style="list-style-type: none"> • Ensure project suppliers' commercial vehicles comply with the necessary legislative requirements including Regulation (EC) No 715/2007. • Ensure that no vehicle or equipment emitting visible black smoke from its exhaust system other than during ignition is used on any construction site or public highway. • Ensure that combustion engines are not left running when not in use. • Ensure that all vehicles and equipment engines and exhaust systems are maintained so that exhaust emissions do not breach statutory limits set for vehicle/ equipment type and mode of operation. • Ensure all vehicles and equipment are maintained in accordance with manufacturer's specifications and statutory requirements. • Construction vehicle movements will be restricted, where possible, to specified preferred construction traffic routes. PC to confirm the preferred construction traffic route to each construction area within the Traffic Management Plan (Annex B11 to the EMP 1st iteration, Application document TR010063/APP/9.12).
Muck away/ trackout	<ul style="list-style-type: none"> • Locate haul roads and access points as far away as practicable from sensitive receptors. • Undertake wet cleaning of any large-scale concrete hard standing. • Restrict dry sweeping to small areas only. • Inspect haul road condition at least weekly and repair as soon as possible if damage is identified. • Apply water to site roads (including haul roads) using bowsers at an appropriate rate to effectively suppress dust. • Maintain unpaved roads and verges in a compacted condition. • Regular water-spraying and sweeping of unpaved and paved roads to minimise dust and remove mud and debris. • Provide easily cleaned hard standings for vehicles. • Using wheel washes, shaker bars or rotating bristles for vehicles leaving the site where appropriate to minimise the amount of mud and debris deposited on the public highway. • Ensuring any temporary site roads are no wider than necessary to minimise their surface area.
Demolition	<ul style="list-style-type: none"> • Fully sheet all vehicles carrying loose or potentially dusty material to or from the working areas. • Use effective water suppression during demolition operations. • Screen buildings where dust producing activities are taking place with debris screens or sheeting, where appropriate.
Excavation	<ul style="list-style-type: none"> • Ensure regular cleaning of hard standings using wet sweeping methods. • Fully sheet all vehicles carrying loose or potentially dusty material to or from the working areas. • Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment. • Avoid carrying out earthworks during dry weather if reasonably practicable having regard to programme or provide and ensure appropriate use of water sprays to control dust.

Activity	Control
	<ul style="list-style-type: none"> Re-vegetate earthworks and exposed areas/ soil stockpiles to stabilise surfaces as soon as practicable.
Construction	<ul style="list-style-type: none"> Avoid scabbling (roughening of concrete surfaces) if possible. Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery. Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place. For smaller supplies of fine powder materials ensure bags are sealed after use and stored appropriately to prevent dust generation.

B.4.7. Inspections and monitoring

- B.4.7.1. A daily construction report log will be completed for each area where work is being undertaken by the Site Supervisor and recorded within the daily diary. The site will also be inspected by the Environment Manager (or delegate) at least weekly.
- B.4.7.2. On identification of a non-conformance where inspections, surveillance, or auditing identify a failure to implement this management plan and/or a substantiated complaint is received, a full review of working practices will be undertaken to ensure corrective and preventative measures are implemented.
- B.4.7.3. Inspection will also be undertaken in the event that a complaint is received. When investigating an incident, the following information will be gathered:
- Wind direction and strength.
 - Weather conditions.
 - Operations at the site at the time of the exceedance.
 - Any abnormal operations both inside the worksite and outside (by both the contractor and/or others).
 - Any air quality controls being applied.
 - Identification of additional controls required.

B.4.8. Communications

Stakeholder communication

- B.4.8.1. The appointed PC will maintain and develop a Community Engagement Plan (CEP) (application document TR010063 APP 9.10) in consultation with stakeholders.

Complaints

- B.4.8.2. All complaints received will be recorded, investigated and corrective actions implemented, and feedback given to the complainant. The relevant local authority will be advised of any justified complaint, actions taken to investigate, and any actions found necessary to put in place.

Records

- B.4.8.3. Documentation and records will be produced, filed and maintained to record the activities and processes used to manage dust and emissions to air.

B.4.9. Register of Environmental Actions and Commitments

B.4.9.1. The following are the Register of Environmental Actions and Commitments (REAC) as they relate to the Air Quality Management Plan.

Table B 4-3 - Air Quality Management Plan REAC

REAC	Commitment Text	Description of the mitigation measure or commitment	Implementation mechanisms
AQ1	Control of dust during construction.	<p>Scheme specific mitigation measures to control dust during construction would be specified within contract documentation and incorporated into the EMP (2nd iteration) prior to commencement of the Scheme.</p> <p>Prior to commencement of the Scheme, Best Practice guidance will be followed to determine appropriate limits for the implementation of dust control measures. These measures will be captured in the Air Quality Management Plan annexed (Annex B4) to the EMP (2nd iteration). The EMP (2nd iteration) will be submitted to and approved by the county planning authority following consultation with the relevant local planning authority and strategic highway authorities to the extent that it relates to matters relevant to its functions.</p> <p>Appropriate mitigation measures for the management of dust include the following. Full details are presented in the Nuisance Management Plan:</p> <ul style="list-style-type: none"> • Regular water-spraying and sweeping of unpaved and paved roads to minimise dust and remove mud and debris. • Using wheel washes, shaker bars or rotating bristles for vehicles leaving the site where appropriate to minimise the amount of mud and debris deposited on the roads. • Sheeting vehicles carrying dusty materials to prevent materials being blown from the vehicles whilst travelling. • Enforcing speed limits for vehicles on unmade surfaces to minimise dust entrainment and dispersion. • Ensuring any temporary site roads are no wider than necessary to minimise their surface area. • Damping down of surfaces prior to their being worked. 	EMP (2nd iteration). Annex B4 – Air quality management plan.

REAC	Commitment Text	Description of the mitigation measure or commitment	Implementation mechanisms
		<ul style="list-style-type: none"> Storing dusty materials away from site boundaries and in appropriate containment (e.g. sheeting, sacks, barrels etc.). 	
AQ2	Control of engine emissions during construction.	<p>Scheme specific mitigation measures to limit engine emissions during construction would be incorporated into the EMP (2nd iteration) prior to commencement of the Scheme.</p> <p>Specifically these measures will be captured in the Air Quality Management Plan annexed (Annex B4) to the EMP (2nd iteration).</p> <p>The EMP (2nd iteration) will be submitted to and approved by the county planning authority following consultation with the relevant local planning authority and strategic highway authorities to the extent that it relates to matters relevant to its functions.</p> <p>Appropriate mitigation measures include the following. Full details are presented in the Air Quality Management Plan:</p> <ul style="list-style-type: none"> Ensuring plant and equipment is maintained in good working order. Ensuring construction plant is not left running when not in use. 	EMP (2nd iteration). Annex B4 – Air quality management plan.

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