



Section 4.0 - Dust and Air Pollution Management Plan

Guidance Notes:

As required by section 6 of the CoCP, details of control measures in respect of dust and air pollution are contained within this section.

GRAHAM

CONSTRUCTION

FORTH REPLACEMENT CROSSING – FIFE ITS

FRC/ITS/GC/DAPMP/01

Dust and Air Pollution Management Plan

Contents

- 4.1 Objective**
- 4.2 Activities that may give rise to dust and air pollution**
- 4.3 Effects of dust and air pollution**
- 4.4 Receptors**
- 4.5 Legal requirements**
- 4.6 Responsibility for control**
- 4.7 Dust and Air pollution mitigation measures**
 - 4.7.1 Site Management
 - 4.7.2 Construction Plant and Vehicles
 - 4.7.3 Transportation and storage of materials
 - 4.7.4 Use of haul roads
 - 4.7.5 Demolition Activities
 - 4.7.6 Excavations and Earthworks Activities
 - 4.7.7 Drilling, blasting, processing, crushing, cutting and grinding activities
 - 4.7.8 Mine grouting activities
- 4.8 Monitoring**

4.1 Objective

To carry out the works in such a way that emissions of dust and other air pollutants including odour are limited and that best practicable means are employed to avoid the creation of a statutory nuisance and risks to human health and to avoid unnecessary impacts on sensitive habitats .

4.2 Activities that may give rise to dust and air pollution

- Construction plant and vehicles.
- Transportation and storage of materials.
- Use of haul routes.
- Demolition activities.
- Excavations and earthworks construction.
- Drilling, blasting and grouting works.
- Processing and crushing rock for reuse in the works.
- Operation of the construction site or undertaking construction activities which results in odours being generated from, for example, smoke, fumes or gases.

4.3 Effects of dust and air pollution

Dust and air pollution, including odours, can cause nuisance affecting properties.

In addition there are statutory objectives in relation to nitrogen dioxide (NO₂) and fine particulate matter (PM₁₀) which have known health impacts.

4.4 Receptors

- The public adjacent to the construction site
- Site workers
- Watercourses
- Ecological receptors

4.5 Legal requirements

Section 79 of the Environmental Protection Act 1990 defines a number of factors relating to dust and air pollution which constitute a statutory nuisance. This includes:

- Smoke emitted from premises so as to be prejudicial to health or a nuisance.
- Fumes or gases emitted from premises so as to be prejudicial to health or a nuisance.
- Any dust, steam, smell or other effluvia arising on industrial, trade or business premises and being prejudicial to health or a nuisance.
- Any accumulation or deposit which is prejudicial to health or a nuisance.

4.6 Responsibility for control

Site Management to implement

4.7 Dust and Air pollution mitigation measures

4.7.1 Site Management

The Graham Site Management Team will use best practicable means to prevent nuisance as a result of dust.

Relevant requirements of the **Area Management Plan** are adhered to, including limiting the potential for dust and air pollution impacts due to the following construction activities;

- Smoke/ Burning.
- Waste.
- Fencing and hoardings.
- Site accesses.
- Clearance of the site.

The site is laid out such that machinery and dust-causing activities will be located away from sensitive receptors, where reasonably practicable.

Hoardings and other barriers have been erected along the site boundary, to mitigate the spread of dust to any sensitive buildings or other environmental receptors.

4.7.2 Construction Plant and Vehicles

- Construction plant is operated in accordance with the manufacturer's written recommendations and all vehicles and plant will be switched off when not in use.
- Vehicle and construction plant exhausts will be directed away from the ground where possible and be positioned at a height to facilitate appropriate dispersal of exhaust emissions.
- Enclosing, shielding and provision of filters on plant likely to generate excessive quantities of dust beyond the site boundaries have been employed. Items such as dust extractors, filters and collectors on drilling rigs and silos will be used.
- The movement of construction traffic around the site will be kept to the minimum reasonable for the effective and efficient operation of the site and construction of the Project.
- Construction plant is located away from site boundaries which are close to sensitive receptors where reasonable and practicable.
- Access points will be designed to avoid queuing traffic adjacent to access points. Access/Exit points will be inspected regularly and cleaned with appropriate methodology as necessary.
- We will avoid use of diesel or petrol powered generators by using mains electricity or battery powered equipment where reasonable and practicable.
- All non-road mobile machinery will use ultra low sulphur tax-exempt diesel where available. Machinery with power outputs of over 37kW will be fitted with appropriate exhaust after-treatment from approved Energy Saving Trust list (achieving filtration efficiency of over 85%).

- We will keep vehicle, plant and equipment maintenance records on site and these are made available to the Employer's Representative upon request.
- Roads and Accesses will be kept clean throughout the duration of the works

4.7.3 Transportation and storage of materials

- Deliveries and storage of materials are coordinated by the Site Management Team as shown in the green color boxes on the Organogram in Section 2.1.
- Delivery engines are turned off while waiting to be unloaded.
- Deliveries or loads entering and leaving the site will have a fixed cover, suitable for the purposes of preventing materials and dust spillage. This will apply to the transport of materials by road, rail or waterway.
- Vehicles transporting materials within or outside the construction site will not to be overloaded.
- Where appropriate stockpiles and mounds are kept away from the site boundary, sensitive receptors, watercourses and surface drains and sited to take into account the predominant wind direction.
- Stockpiles and mounds will be at a suitable angle of repose and avoid sharp changes in shape to prevent material slippage.
- Materials stockpiles will be enclosed or securely sheeted or kept watered.
- Long-term stockpiles, which give rise to a risk of dust or air pollution, will be covered with appropriate sheeting or the surfaces of the stockpiles will be stabilised.
- Where reasonably practicable, and where appropriate storage in line with the requirements for covering materials set out above is not implemented, fine dry material (under 3mm particle size) will be stored inside buildings or enclosures.
- Mixing of large quantities of concrete or bentonite slurries will be undertaken in enclosed or shielded areas.
- The number of handling operations for materials will be kept to the minimum practicable.
- Materials handling areas will be maintained to constrain dust emissions. Watering facilities will be utilised to reduce or prevent escape of dust from the site boundaries.

4.7.4 Use of haul roads

- Haul routes have been agreed with the Employer's Representative prior to their construction and use and we will advise the Employer's Representative of the intended level of trafficking for haul routes.
- Hard surface roads are swept regularly to remove mud and aggregate materials from their surface. The frequency of cleaning will be suitable for the purposes of suppressing dust emissions from the site boundaries.
- Un-surfaced roads will only be utilised by Site traffic.

- Any routes within the Site with the potential to give rise to dust are watered as appropriate.
- Haul routes are regularly inspected and promptly repaired if required.
- Opportunities will be sought to reuse haul route surfacing materials where the locations of haul routes change during the course of construction.
- Areas of hard-standing will be provided at site access and egress points to be used by any waiting vehicles.
- Vehicle speeds are restricted to 10m/h to prevent high levels of dust being released.

4.7.5 Demolition Activities

- Any buildings or structures to be demolished were sprayed with water as necessary, prior to and during demolition.
- Appropriate screening of buildings or structures to be demolished was used.
- Skips covered and secured.
- Prolonged storage of waste materials on site is avoided.
- No blasting is anticipated in the contract.
- Waste removal will be as per the requirements of the Geology, Land Contamination and Waste Management Plan.

4.7.6 Excavations and Earthworks Activities

- Topsoil is being stripped as close as reasonably practicable to the period of excavation or other earthworks activities to avoid risks associated with run-off or dust generation.
- Drop heights from excavators to vehicles involved in the transport of excavated material will be kept to the minimum practicable to control dust generation associated with the fall of materials.
- Water misting or sprays are used as required if particularly dusty Works activities shall be necessary during dry or windy periods
- Deposited materials will be compacted as soon as possible after deposition, with the exception of topsoil
- Soiling, seeding, planting or sealing of completed earthworks will be undertaken as soon as reasonably practicable following completion of the earthworks.

4.7.7 Drilling, blasting processing, crushing, cutting and grinding activities

Not applicable to the Fife ITS Project.

4.7.8 Mine grouting activities

Materials used for grouting, such as cements or pulverised fuel ash, are stored in accordance with the requirements of the CoCP for materials storage to prevent them becoming an airborne hazard. Mixing of grout or cement based materials will be undertaken using a process suitable for the prevention, as far as reasonably practicable, of dust emissions.

4.8 Monitoring

The inspection and monitoring procedures to be implemented to monitor the effectiveness of measures to prevent dust and air pollutant emissions and to avoid detrimental effects on the health of workers due to exposure to dust and air pollution are as follows:

- Implementation of the area management plan with regard to site inspections covering the establishment of operation of the construction site.
- Weekly inspection of areas adjacent to the construction site to monitor any dust and air pollution which may be generated despite the use of best practicable means to prevent dust and air quality emissions.
- Weekly inspection of construction vehicles, plant and machinery. These inspections will be logged within inspection and maintenance schedules.
- Weekly inspection of the level of trafficking, use and condition of haul routes.

Should inspections show a nuisance arising, work will be stopped until prevention and remediation measures are implemented.