

## AIR QUALITY ASSESSMENT

on behalf of

**TORIVIEW LTD**

for

**NEW VICTORIA OFFICE, MANCHESTER**

**REPORT DATE: 5TH APRIL 2022**

**REPORT NUMBER: 102817V2**

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## Summary

This air quality report has been prepared to accompany a planning application for a proposed commercial development at New Victoria, Manchester. It assesses the potential changes in air quality due to the construction and operation of the proposed development and whether these potential changes would significantly alter air quality.

The assessment of dust soiling and human health impacts during the demolition and construction phase of the development results in the proposal of dust mitigation measures. The implementation of these will ensure that residual dust impacts during the demolition and construction phase are not significant.

Concentrations of NO<sub>2</sub> and PM<sub>10</sub> are likely to be below their respective long and short-term objectives at the proposed development site which is therefore considered suitable for the intended use with regards to air quality. Concentrations of PM<sub>2.5</sub> are expected to be below the annual mean target.

The proposed development is not expected to have a significant impact on local air quality.

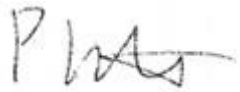
There is, therefore, no reason for this application to be refused on the grounds of air quality.

Prepared By Philip Walton

Reviewed By

Lesley Goodall

Signed



Signed



Date

5th April 2022

Date

5th April 2022

### Record of changes

| Version | Date                      | Change                                         | Initials |
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| 1       | 5th April 2022            | First issue                                    | PW       |
| 2       | 27 <sup>th</sup> May 2022 | Revision to text following review by Applicant | PW       |
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|         |                           |                                                |          |

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# 1 Introduction

- 1.1 Miller Goodall Ltd has been instructed to prepare an air quality assessment to accompany a planning application for a proposed office development at New Victoria, Manchester. The site lies within the administrative boundary of Manchester City Council (MCC).
- 1.2 The report provides a review of the existing air quality in proximity to the proposed development site and assesses the potential impact of the proposed development on local air quality following Local Air Quality Management Technical Guidance<sup>1</sup> and EPUK and IAQM guidance<sup>2</sup>.
- 1.3 The main pollutants of health concern from road traffic exhaust releases are nitrogen dioxide (NO<sub>2</sub>) and fine particulates, normally assessed as the fraction of airborne particles of mean aerodynamic diameter less than ten micrometres (PM<sub>10</sub>) and 2.5 micrometres (PM<sub>2.5</sub>) since these pollutants are most likely to approach their respective air quality objectives in proximity to major roads and congested areas. This assessment has therefore focused on the impact of the proposed development on concentrations of NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub>.

# 2 Site Description

- 2.1 The site is adjacent to Manchester Victoria train station. The site primarily comprises hardstanding, a small number of temporary cabins are present on the site, supporting Phase 1 of New Victoria. The Site is currently partially fenced off restricting access, as it is located within the boundary of the construction compound for New Victoria Phase 1: residential development and currently accommodates site access, parking and storage facilities.
- 2.2 The site is within the Greater Manchester Air Quality Management Area (AQMA).
- 2.3 Phase 1 of an extant consent is currently under construction on the land to the north of the site for two high-rise residential buildings. Corporation Street borders the development site to the east, with a mix of commercial and residential uses located beyond. Corporation Street and a rail line border the site to the south. A rail line and Manchester Victoria train station border the site to the west. The site location is shown in **Appendix A**.

# 3 Proposed Development

- 3.1 The proposals comprise the construction of a 10 Storey office building plus basement, comprising up to 18,101 sq. m. (GEA) of office accommodation, ground floor commercial units, roof terrace, plant, cycle parking, hard and soft landscaping, access and servicing and other associated works.
- 3.2 The development is car-free. Cycle storage and shower facilities will be provided at the basement level. The development will be situated on the land previously designated for car parking, as permitted by the extant planning approval for the site.

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<sup>1</sup> Department for the Environment Food and Rural Affairs (2018) 'Local Air Quality Management Technical Guidance Document LAQM.TG (16)', London: Defra.

<sup>2</sup> EPUK and IAQM (January 2017) Land Use Planning and Development Control: Planning for Air Quality (v1.2)

## 4 Extant Planning Permission

- 4.1 The site was the subject of planning permission for residential and commercial office use in 2016, planning reference 111777/FO/2016/C1. The approved scheme is for the erection of two residential buildings of a maximum 21 and 26 storeys to accommodate 520 apartments (178 x 1 bed, 286 x 2 bed and 56 x 3 bed apartments) (Use Class C3). Erection of one office building of maximum eight storeys comprising up to 11,647 sq. m (GIA) of office accommodation. Ground floor commercial space (Use Class A1, A2, A3 and B1), lower ground level car parking, access and servicing arrangements, alterations to Corporation Street, new public realm and other associated works.
- 4.2 Phase 1 of this development is currently under construction, and comprises two residential buildings, along with ground floor commercial space, parking and other associated works. Phase 2 covers this Site, and the consented proposals comprise an 8 storey commercial office development, providing 14,413 sq. m office floorspace and 679 sq. m retail floorspace at the ground floor.
- 4.3 The office building originally proposed as part of the New Victoria development will now be delivered under this separate application, reflecting changes to the design of the office building in order to better address current market requirements.
- 4.4 The submission package for the planning application included an Environmental Statement. An Air Quality Chapter was produced for the submission. The conclusions of the ES and air quality submission have been reviewed for this report.

## 5 Policy Context

### 5.1 Air Quality Objectives

- 5.1.1 The standards and objectives relevant to the LAQM framework have been prescribed through the Air Quality (England) Regulations (2000) and the Air Quality (England) (Amendment) Regulations 2002; the Air Quality Standards Regulations 2010 set out the combined Daughter Directive limit values and interim targets for Member State compliance.
- 5.1.2 The United Kingdom left the European Union on 31<sup>st</sup> January 2020 and is no longer a member state. However, the current framework of air quality legislation was converted into domestic law through the European Union (Withdrawal) Act 2018<sup>3</sup>.
- 5.1.3 The relevant air quality standards and objectives are presented in **Table 1**. Pollutant standards relate to ambient pollutant concentrations in air, set on the basis of medical and scientific evidence of how each pollutant affects human health.

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<sup>3</sup> UK Parliament (2018): <http://www.legislation.gov.uk/ukpga/2018/16/contents/enacted>

**Table 1: Air Quality Strategy Objectives (England) for the Purposes of Local Air Quality Management**

| Pollutant                           | Air Quality Objective |                                                            |
|-------------------------------------|-----------------------|------------------------------------------------------------|
|                                     | Concentration         | Measured As                                                |
| Nitrogen dioxide (NO <sub>2</sub> ) | 200 µg/m <sup>3</sup> | 1-hour mean not to be exceeded more than 18 times per year |
|                                     | 40 µg/m <sup>3</sup>  | Annual mean                                                |
| Particles (PM <sub>10</sub> )       | 50 µg/m <sup>3</sup>  | 24-hour mean not to be exceeded more than 35 per year      |
|                                     | 40 µg/m <sup>3</sup>  | Annual mean                                                |
| Particles (PM <sub>2.5</sub> )      | 25 µg/m <sup>3</sup>  | Annual mean (target)                                       |

- 5.1.4** Where an air quality objective is unlikely to be met by the relevant deadline, local authorities must designate those areas as Air Quality Management Areas (AQMAs) and take action to work toward meeting the objectives. Following the designation of an AQMA, local authorities are required to develop an Air Quality Action Plan (AQAP) to work toward meeting the objectives and improving air quality locally.
- 5.1.5** Possible exceedances of air quality objectives are generally assessed in relation to those locations where members of the public are likely to be regularly present and are likely to be exposed for a period of time appropriate to the averaging period of the objective.
- 5.1.6** As the development is for commercial use, the annual mean air quality objectives do not apply; however, the short-term objectives do apply<sup>4</sup>.

## 5.2 Manchester City Council Air Quality & Planning Technical Guidance

- 5.2.1** MCC has published the Air Quality & Planning Technical Guidance, 2022 <sup>[4]</sup> to assist developers with air quality matters. The Guidance provides a summary of local air quality, the department overseeing air quality matters, local policy, but broadly for air quality it considers three overarching topics:
- Construction & demolition – assessment of dust and particulate matter emissions. The Guidance refers to assessment using the Institute of Air Quality Management ‘Guidance on the assessment of dust from demolition and construction’ 2014. Concerning Non-Road Mobile Machinery (NRMM) emissions, the Guidance specifies “MCC recommends that NRMM used on the site of any major development within Manchester city centre for the purpose of construction or demolition works should meet Stage IV of EU directive 97/68/EC, and Stage IIIA as a minimum.”
  - Development Planning – assessment of air quality change to existing residents and predictions of air quality concentrations for future receptors. The Guidance refers to an assessment using the Environmental Protection UK ‘Land-use Planning & Development Control: Planning for Air Quality’ 2017.

<sup>4</sup> Manchester City Council, 2022. Air Quality & Planning Technical Guidance

- Electric vehicle charging – MCC encourages the adoption of electric vehicle charging for developments. Best practice is outlined in Appendix IV of the Guidance. MCC recommend 1 charging point per residential unit with any parking space and for all spaces of commercial use with any parking spaces. The Guidance continues and specifies the capacities and electric requirements.

5.2.2 The MCC Guidance also specifies guidance for chimney stacks, however, it is not relevant to this assessment. All of the bullet points and referenced guidance are considered in this report.

## 5.3 Greater Manchester Action Plan 2016-2021

5.3.1 The Greater Manchester Combined Authority (GMCA) Air Quality Action Plan 2016-2021 <sup>[5]</sup> provides information in respect of the actions planned by the Greater Manchester Authorities in relation to declared AQMAs. Action Plans are the mechanism by which the local authorities, in collaboration with national agencies and others, outline their plans for working towards achieving the air quality objectives through the powers available to them. In relation to managing new development, the action plan states that:

### **“Action 1.1**

*Greater Manchester (GM)councils to adopt the most recent IAQM Guidance on the Assessment of Dust from Demolition and Construction as current best practice to assess and mitigate emissions from construction sites. i. Where a key priority area is affected by a proposed scheme, a high level of mitigation control will be requested.*

### **Action 1.2**

*GM local authorities will adopt the most recent IAQM/EPUK guidance for air quality assessment as current best practice, to help ensure that planning applications consider potential local air quality impacts and opportunities to improve air quality are realised. i. Where a Key Priority Area is significantly adversely affected by a proposed scheme, a high level of mitigation control will be requested. ii. The IAQM/EPUK guidance will also be used to screen and assess industrial sources, such as boilers or large stationary engines. GM local authorities to recommend mitigation controls in accordance with the most recent guidance and the other actions in this document for new developments that contribute to a deterioration of air quality in Air Quality Management Areas (AQMAs). Where an air quality assessment is triggered, it should include a review of monitoring data. Where monitoring is not currently undertaken, it may be requested to inform the application or to confirm the effects.”*

5.3.2 Greater Manchester has commenced the process of updating the Action Plan. The following information has been obtained from Clean Air Greater Manchester:

*The Greater Manchester Air Quality Administration Committee will begin the process of reviewing the evidence and options for a new Clean Air Plan that can improve public health without hurting jobs and businesses when it meets next week (Wednesday 23 March).*

*The committee will consider the scope of the options available as Greater Manchester works with government to deliver a new plan by 1 July 2022, to bring harmful nitrogen dioxide (NO<sub>2</sub>) levels within legal limits as soon as possible and by 2026 at the latest.*

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<sup>5</sup> GMCA (2016) Greater Manchester Air Quality Action Plan 2016-2021

## 6 Methodology

### 6.1 Data Sources

6.1.1 The air quality assessment has been undertaken and prepared with reference to information from several sources, as detailed in **Table 2** (overleaf).

**Table 2: Key Information Sources**

| Data Source                                                                       | Reference                                                                                                      |
|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| Manchester City Council (MCC) / Greater Manchester Combined Authority (GMCA)      | MCC / GMCA (2016) <i>Greater Manchester Air Quality Action Plan 2016-2021</i>                                  |
|                                                                                   | MCC / GMCA Clean Air Greater Manchester (website)                                                              |
|                                                                                   | MCC (2022) <i>Air Quality &amp; Planning Technical Guidance</i>                                                |
| Transport for Greater Manchester (TfGM)                                           | AQMA NO <sub>2</sub> contour plot                                                                              |
| Institute of Air Quality Management (IAQM)                                        | IAQM (2014) <i>Assessment of Dust from Demolition and Construction (v1.1)</i>                                  |
| Department for Environment Food and Rural Affairs (Defra)                         | Defra <i>Local Air Quality Management Technical Guidance TG(16), updated 2021</i>                              |
| Environmental Protection UK (EPUK) and Institute of Air Quality Management (IAQM) | EPUK and IAQM (January 2017) <i>Land Use Planning and Development Control: Planning for Air Quality (v1.2)</i> |
| Ministry of Housing, Communities & Local Government                               | Planning Practice Guidance: Air Quality, November 2019                                                         |
|                                                                                   | National Planning Policy Framework (NPPF), July 2021                                                           |
| Defra's LAQM Support Tools                                                        | Local Air Quality Management 1 km x 1 km grid background pollutant maps                                        |
|                                                                                   | NO <sub>x</sub> to NO <sub>2</sub> Calculator                                                                  |

## 6.2 Consultation

- 6.2.1 The proposed air quality assessment methodology was discussed and agreed with Mr Graeme Souter of MCC Environmental Health Department by email between 23<sup>rd</sup> to 25<sup>th</sup> May 2022.
- 6.2.2 The proposed methodology included the reasoning for a simple assessment scope and a construction phase risk assessment. Mr Souter responded that due to the AQMA location an exposure assessment would be required in addition to details of any air intake. Electric charging and boiler emissions shall also require consideration as applicable.
- 6.2.3 Miller Goodall responded that the exposure assessment would be included and that a ventilation strategy has been prepared for the development. No parking is proposed at the development, and the building will include air source heat pumps.
- 6.2.4 The assessment has been prepared using the MCC Air Quality & Planning Technical Guidance which outlines the content and requirements of air quality assessments to be submitted to the MCC planning department.

## 6.3 IAQM Construction Dust Assessment

- 6.3.1 The 2016 planning application included an assessment of construction dust. However, the risk assessment included this development land, as well as the land to the north of the development site to produce a single risk assessment. Planning Condition 10 of Planning reference 111777/FO/2016/C1 required the submission of dust mitigation measures. A discharge of condition application for planning condition 10 was made. Therefore, we would expect a dust management plan to exist for the current Phase 1 activities ongoing and the wider construction site.
- 6.3.2 A construction dust risk assessment has been prepared for this development as it is a new submission.
- 6.3.3 The IAQM has produced guidance<sup>6</sup> on the assessment of air quality impacts arising from dust associated with construction and demolition activities and provides a methodology by which to complete such assessments. The IAQM methodology provides a risk assessment structure to determine the likely impact of the development on nearby receptor locations and recommends mitigation measures that should be implemented to reduce any such impact. The methodology for the assessment is shown in **Appendix B**. The study area in relation to dust and the zones of interest used within the assessment (<20 m, 20 m – 50 m and 50 – 100 m from the site) are shown in **Appendix C**. The dust assessment informed the recommended mitigation outlined in **Appendix D**.

## 6.4 Simple Air Quality Assessment

- 6.4.1 A simple assessment of air quality in terms of the impact of the development and suitability of the site, which relies on already published information, has been completed using sources such as the Local Authority's monitoring network and the Defra LAQM support tools.

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<sup>6</sup> IAQM "Assessment of dust from demolition and construction" v1.1 2014

## 7 Baseline Air Quality

### 7.1 Local Air Quality

7.1.1 Baseline air quality at the proposed development has been established by examining monitoring data produced by MCC (provided on the Clean Air Greater Manchester website) and background concentration maps provided by Defra for the grid squares covering the proposed development.

7.1.2 The site is located within the Greater Manchester AQMA which has been declared for exceedance of the NO<sub>2</sub> annual mean air quality objective. The site location and its relationship to the AQMA are shown in **Appendix A**.

### 7.2 Air Quality Monitoring

#### *Nitrogen Dioxide (NO<sub>2</sub>)*

7.2.1 MCC operates an extensive air quality network of automatic and non-automatic monitors. MCC operates two non-automatic NO<sub>2</sub> diffusion tubes within 400 m of the site.

7.2.2 The results from the diffusion tube are shown in **Table 3** and the monitor locations are shown in **Appendix A**.

**Table 3: Annual Mean NO<sub>2</sub> Concentrations Monitored by MCC within the Study Area**

| Site ID                                           | Location |        | Annual Mean NO <sub>2</sub> Concentrations (µg/m <sup>3</sup> ) |      |                      |       |      |
|---------------------------------------------------|----------|--------|-----------------------------------------------------------------|------|----------------------|-------|------|
|                                                   |          |        | 2016                                                            | 2017 | 2018                 | 2019  | 2020 |
| MAN26A                                            | 383971   | 399876 | 37.1                                                            | 35.5 | 33.4                 | 33.00 | 22.9 |
| MAN88A                                            | 384469   | 398981 | 52.7                                                            | 47.5 | 44.3                 | 43.3  | 30.1 |
| Annual Mean NO <sub>2</sub> air quality objective |          |        |                                                                 |      | 40 µg/m <sup>3</sup> |       |      |

7.2.3 The monitoring results in **Table 3** indicate that annual mean concentrations of NO<sub>2</sub> were above the NO<sub>2</sub> annual mean objective at MAN88A in 2019. Diffusion tube ID 'MAN88A' is a roadside monitor which is located approximately 360 m to the west of the site. This monitor is located in a setting that is likely to experience street canyon effects, as the building façade heights on either side of the road exceed the road width distance. Diffusion tube ID 'MAN26A' is an urban background classification monitor which is located approximately 120 m to the west of the site.

7.2.4 Air quality monitoring data for 2020 is available. The Covid-19 pandemic caused significant traffic reductions on the UK road network during 2020. Consequently, air quality concentrations during 2020 experienced significant and noticeable reductions compared to the pre-2019 record.

7.2.5 The results indicate that the short-term objective for NO<sub>2</sub> was unlikely to be exceeded at the identified monitoring sites as monitored annual mean concentrations were well below the indicative screening concentration of 60 µg/m<sup>3</sup> during the period shown.

### Particulate Matter ( $PM_{10}$ & $PM_{2.5}$ )

- 7.2.6 MCC does not undertake  $PM_{10}$  or  $PM_{2.5}$  monitoring in the vicinity of the proposed development site. The nearest monitor is located at Piccadilly Gardens approximately 650 m to the south-west of the site.  $PM_{10}$  concentrations are below the annual mean air quality objective, since at least 2016.

## 7.3 Transport for Greater Manchester Contour Map

- 7.3.1 The declaration and extent of the GMCA AQMA were finalised based on predictions made from air dispersion modelling work completed by Transport for Greater Manchester (TfGM). The AQMA is declared in locations that were shown to have a  $NO_2$  annual mean that exceeds  $35 \mu g/m^3$ . Declaration at this criterion, which is below the annual mean air quality objective, accounts for potential model uncertainty.
- 7.3.2 A screenshot of the model outputs at and in the vicinity of the development site is shown in **Appendix E**. The screenshot indicates that  $NO_2$  concentrations across the proposed development site are below the  $40 \mu g/m^3$   $NO_2$  annual mean air quality objective. The nearest point of reference indicates a concentration of  $38.93 \mu g/m^3$  at the north-eastern boundary of the development site. The contour plots were prepared in 2016 when  $NO_2$  concentrations were higher.

## 7.4 Background Concentrations

- 7.4.1 MCC operates MAN26A, an urban background monitor near the development site. A comparison to the Defra background concentrations has been provided, to provide further evidence of likely background concentrations for the area. Background concentrations are below the annual mean air quality objectives and target level.
- 7.4.2 Background concentrations of  $NO_2$ ,  $PM_{10}$  and  $PM_{2.5}$  obtained from the background concentration maps provided by Defra for the grid squares covering the proposed development and receptor locations<sup>7</sup> are shown in **Table 4**.

**Table 4: Background Pollutant Concentrations Obtained for the 1km x 1km Grid Squares Covering the Site\***

| Grid Square    | Pollutant  | 2022            |
|----------------|------------|-----------------|
|                |            | ( $\mu g/m^3$ ) |
| 384500, 398500 | $NO_2$     | 26.25           |
|                | $PM_{10}$  | 13.04           |
|                | $PM_{2.5}$ | 8.38            |

Annual Mean  $NO_2$  &  $PM_{10}$  air quality objective  $40 \mu g/m^3$

Annual Mean  $PM_{2.5}$  air quality target level  $25 \mu g/m^3$

\* Background concentrations obtained from the latest 2018 based background maps

## 8 Construction Dust Impact Assessment

<sup>7</sup> <http://uk-air.defra.gov.uk/data/laqm-background-maps?year=2018>

## 8.1 Step 1 – Requirement for a Detailed Assessment

- 8.1.1 There are sensitive receptors located within 350m of the site boundary, therefore, a detailed assessment of the construction phase of the development has been undertaken. There are no ecological designations within 50m of the site boundary or trackout routes which require assessment.

## 8.2 Step 2 – Assess the Risk of Dust Impacts

### *Step 2A Dust Emission Magnitude*

- 8.2.1 Planning Condition 10 of extant planning permission, reference 111777/FO/2016/C1, required the submission of dust mitigation measures. A discharge of condition application for planning condition 10 was made. Phase 1 is currently under construction which includes enabling works at the proposed development site. Therefore, we would expect a dust management plan to exist for the current Phase 1 activities ongoing and the wider construction site. The risk assessment outlined will complement the existing dust management, and one will be prepared for the future construction of this development, in accordance with the risks determined in the following risk assessment.
- 8.2.2 The potential dust emission magnitude in relation to the development has been determined using the criteria detailed in **Table B1** in **Appendix B**. The scale and nature of works onsite were considered to determine the potential dust emission magnitude for earthwork activities, construction and trackout activities. Information to determine the classification has been estimated from the site plans, Google Earth and information provided by the Applicant. The dust emission magnitude is outlined in **Table 5**.

**Table 5: Dust Emission Magnitudes for Each Activity**

| Activity     | Dust Emission Magnitudes | Justification for Sensitivity Classification                                                                           |
|--------------|--------------------------|------------------------------------------------------------------------------------------------------------------------|
| Demolition   | N/A                      | <ul style="list-style-type: none"> <li>N/A</li> </ul>                                                                  |
| Earthworks   | Small                    | <ul style="list-style-type: none"> <li>the site area is &lt;2,500 m<sup>2</sup></li> </ul>                             |
| Construction | Large                    | <ul style="list-style-type: none"> <li>total building volume to be constructed is &gt;100,000 m<sup>3</sup></li> </ul> |
| Trackout     | Medium                   | <ul style="list-style-type: none"> <li>there are likely to be 10 to 50 HDV outward movements in any one day</li> </ul> |

### *Step 2B Sensitivity of the Receptors to Dust Soiling and Health Effects*

- 8.2.3 There are commercial sensitive receptors located within a distance of 50 m from construction, demolition and earthworks and 20 m of road edges used by traffic associated with the site construction. In accordance with the criteria in **Table B2** in **Appendix B** and the IAQM guidance, the sensitivity of human receptors is **high**.

### *Step 2B Sensitivity of the Area to Dust Soiling and Human Health Effects of PM<sub>10</sub>*

- 8.2.4 The sensitivity of the area for dust soiling and human health effects has been determined using the criteria detailed in **Table B3** and **Table B4** respectively in **Appendix B**.
- 8.2.5 The sensitivity of the area to dust soiling and human health for each activity is summarised in **Table 6**.

**Table 6: Outcome of Defining the Sensitivity of the Area**

| Pollution    | Activity     | Sensitivity of the Surrounding Area | Justification for Sensitivity Classification                                                                                                                    |
|--------------|--------------|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Dust Soiling | Demolition   | N/A                                 | N/A                                                                                                                                                             |
|              | Earthworks   | Low                                 | There is more than 1 medium sensitive commercial receptor within 50 m of the site boundary                                                                      |
|              | Construction | Low                                 | There is more than 1 medium sensitive commercial receptor within 50 m of the site boundary                                                                      |
|              | Trackout     | Medium                              | There is more than 1 medium sensitive commercial receptor within 20 m of the trackout route, up to 50 m from the site exit                                      |
| Human Health | Demolition   | N/A                                 | N/A                                                                                                                                                             |
|              | Earthworks   | Low                                 | There is more than 1 medium sensitive commercial receptor within 50 m of the site boundary. Background pollutant concentrations are below 24 µg/m <sup>3</sup>  |
|              | Construction | Low                                 | There is more than 1 medium sensitive commercial receptor within 50 m of the site boundary. Background pollutant concentrations are below 24 µg/m <sup>3</sup>  |
|              | Trackout     | Low                                 | There is more than 1 medium sensitive commercial receptor within 20 m of the trackout route. Background pollutant concentrations are below 24 µg/m <sup>3</sup> |

### Step 2C Risk of Impacts

- 8.2.6 The dust emission magnitude and sensitivity of the area were combined and the risk of impacts have been determined using the criteria detailed in **Table B5** to **Table B8** in **Appendix B**.
- 8.2.7 A summary of the risks, before mitigation measures are applied, for dust soiling and human health are shown in **Table 7**.

**Table 7: Risk of Dust Impacts**

| Potential Impact    | Dust Risk  |                 |              |          |
|---------------------|------------|-----------------|--------------|----------|
|                     | Demolition | Earthworks      | Construction | Trackout |
| <b>Dust Soiling</b> | N/A        | Negligible Risk | Low Risk     | Low Risk |
| <b>Human Health</b> | N/A        | Negligible Risk | Low Risk     | Low Risk |

## 8.3 Step 3 – Site-Specific Mitigation

- 8.3.1 Step 3 of the IAQM guidance identifies appropriate site-specific mitigation. These measures are related to the site risk for each activity. Mitigation measures specific to earthworks, construction and trackout are proposed based on the risk classifications in **Table 7**. Recommended mitigation measures are shown in **Appendix D**.

8.3.2 The general mitigation measures (for site management, preparing and maintaining the site, operating vehicle/machinery, operations and waste management), are appropriate for a site with a 'low risk' classification (in this instance the site is classified as "low" risk due to construction)<sup>8</sup>.

## 8.4 Step 4 – Determine Significant Effects

8.4.1 The characteristics of the site and the surrounding area suggest that mitigation would not be impracticable or ineffective. With the implementation of the mitigation measures, therefore, the residual impacts from the construction are considered to be not significant when considered following IAQM guidance.

# 9 Effect of Air Quality on the Proposed Development

9.1 All levels of the proposed development will be designated for commercial uses. Future sensitive receptors would include short term users (visitors, employees, guests); therefore, they will not be present on-site for extended periods and will not be exposed to the 24-hour or annual mean air quality objectives. However, the one-hour NO<sub>2</sub> short-term objective does apply<sup>1</sup>.

9.2 The background concentrations in **Table 4** show that background concentrations of NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> are below health-based air quality objectives of 40 µg/m<sup>3</sup> for both pollutants. However, the site is likely experiencing higher concentrations due to its proximity to the road network.

9.3 The extant planning permission for the development land included an Environmental Statement as part of the planning submission. The air quality assessment considered a 2016 baseline, in line with the original submission timeframes. Air quality concentrations have broadly improved between 2016 to 2022. Therefore, this resource is still valid as it represents potential worst-case exposure for future users when pollutant concentrations were considered to be higher.

9.4 The Air Quality Chapter included two assessment approaches; an assessment of the 2025 proposed opening year using future air quality predictions from Defra, and a second scenario that included no air quality improvements from the 2014 base year. The latter represents a highly pessimistic method for predicting air quality, but it was a common approach used with earlier versions of the Emission Factor Toolkit.

9.5 The 2025 improvement scenario predicted NO<sub>2</sub> concentrations to be just below the 40 µg/m<sup>3</sup> annual mean air quality objective. The worst-case no-improvement scenario predicted NO<sub>2</sub> concentrations would exceed the annual mean air quality objective, with concentrations predicted to be in the mid-40s µg/m<sup>3</sup>.

9.6 The nearest roadside air quality monitor to the development site is MAN88A, which is likely to be affected by street canyon effects. Pollutant concentrations are exceeding the air quality objective (as of 2019), but remain below 60 µg/m<sup>3</sup>, which is the indicative criterion established in Defra LAQM.TG(16) is when there is a risk of the one-hour NO<sub>2</sub> objective being exceeded.

9.7 The Transport for Greater Manchester NO<sub>2</sub> contour plot shows the outputs of the city-wide air quality modelling used to declare the Greater Manchester AQMA boundaries. NO<sub>2</sub> concentrations, at the time of the 2016 modelling

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<sup>8</sup> For those mitigation measures that are general, the highest risk category should be applied. For example, if the site is medium risk for earthworks and construction, but a high risk for demolition and track-out, the general measures applicable to a high risk site should be applied.

study, show concentrations would be slightly below the annual mean air quality concentrations at the development site.

- 9.8 The evidence from the reviewed resources would indicate that the site is not in a location where there is a risk of the one-hour air quality objective being exceeded. Future sensitive receptors would not be exposed to adverse air quality exceeding the relevant air quality objectives.
- 9.9 Mechanical ventilation is to be installed at all floors of the development. This system will protect future occupants. A ventilation strategy and odour abatement has also been designed for the kitchen exhaust extraction system, for the restaurant proposed at Level 9 of the development. Odours will be vented at the restaurant level, and therefore, exhaust emissions will be well above the surrounding sensitive receptors. This will ensure odours are mitigated.

## 10 Impact of the Proposed Development on Existing Air Quality

- 10.1 Traffic generation is not significant as the development is car-free. The electric and heating capacity of the development will be met with air source heat pumps.
- 10.2 The development location is favourable for cycling and public transport access. The risk of impacts to surrounding existing sensitive receptors is, therefore, not significant.

## 11 Summary of Impacts and Conclusion

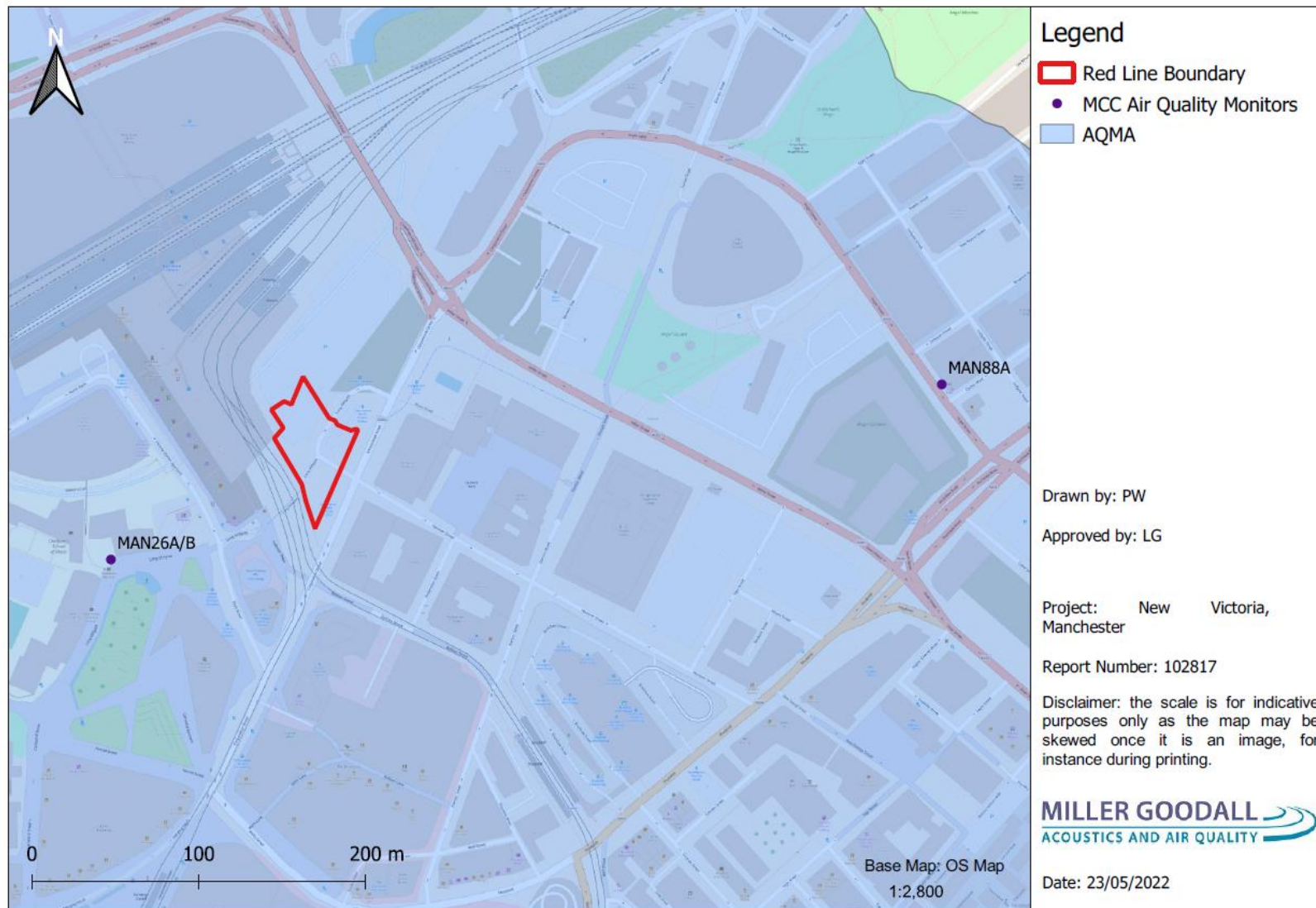
- 11.1 This air quality report assesses the potential changes in air quality due to the construction and operation of the proposed development and whether these potential changes would significantly alter air quality.
- 11.2 The assessment of dust soiling and human health impacts during the demolition and construction phase of the development results in the proposal of dust mitigation measures. The implementation of these will ensure that residual dust impacts during the demolition and construction phase are not significant.
- 11.3 Concentrations of NO<sub>2</sub> and PM<sub>10</sub> are likely to be below their respective long and short-term objectives at the proposed development site which is therefore considered suitable for commercial use with regards to air quality. Concentrations of PM<sub>2.5</sub> are expected to be below the annual mean target. Mechanical ventilation is to be introduced at all levels of the development with no openable windows, therefore, there is no risk of exceedances of the air quality objectives to future sensitive receptors.
- 11.4 The proposed development is not expected to have a significant impact on local air quality. A cycle storage area and shower facilities are to be provided at the development. The development is located adjacent to Manchester Victoria train station provides excellent transport options for future users of the development.
- 11.5 There is, therefore, no reason for this application to be refused on the grounds of air quality.

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## APPENDICES

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## Appendix A: Location of site



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## Appendix B: IAQM Dust Risk Assessment Methodology

The following section outlines criteria developed by the IAQM for the assessment of air quality impacts arising from construction and demolition activities<sup>6</sup>. The assessment procedure is divided into four steps and is summarised below:

### *Step 1: Screen the Need for a Detailed Assessment*

An assessment will normally be required where there are human receptors within 350 m of the site boundary and/or within 50 m of the route(s) used by construction vehicles on the public highway, up to 500 m from the site entrance(s). Ecological receptors within 50 m of the site boundary or within 50 m of the route(s) used by construction vehicles on the public highway, up to 500 m from the site entrance(s), are also identified at this stage. An ecological receptor refers to any sensitive habitat affected by dust soiling. For locations with a statutory designation, such as a Site of Specific Scientific Interest (SSSI), Special Area of Conservation (SACs) and Special Protection Areas (SPAs), consideration should be given as to whether the particular site is sensitive to dust. Some non-statutory sites may also be considered if appropriate.

Where the need for a more detailed assessment is screened out, it can be concluded that the level of risk is 'negligible' and any effects will not be significant.

### *Step 2: Assess the Risk of Dust Impacts*

In step two, a site is allocated to a risk category on the basis of the scale and nature of the works (Step 2A) and the sensitivity of the area to dust impacts (Step 2B). These two factors are combined in Step 2C to determine the risk of dust impacts before the implementation of mitigation measures. The assigned risk categories may be different for each of the construction activities outlined by the IAQM (construction, demolition, earthworks and trackout). A site can be divided into zones, for example on a large site where there are differing distances to the nearest receptors.

#### *Step 2A: Define the Potential Dust Emission Magnitude*

Dust emission magnitude is based on the scale of the anticipated works and is classified as Small, Medium or Large. The IAQM guidance recommends that the dust emission magnitude is determined separately for demolition, earthworks, construction and trackout. **Table B1** describes the potential dust emission class criteria for each outlined activity.

**Table B1: Criteria Used in the Determination of Dust Emission Magnitude**

| Activity     | Criteria used to Determine Dust Emission Magnitude                                                         |                                                                                                              |                                                                                         |
|--------------|------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
|              | Small                                                                                                      | Medium                                                                                                       | Large                                                                                   |
| Demolition   | Total building volume <20,000 m <sup>3</sup> , construction materials with low potential for dust release. | Total building volume 20,000 m <sup>3</sup> – 50,000 m <sup>3</sup> , potential dusty construction material. | Total building volume >50,000 m <sup>3</sup> , potentially dusty construction material. |
| Earthworks   | Total site area <2,500 m <sup>2</sup> , soil type with large grain                                         | Total site area 2,500 – 10,000 m <sup>2</sup> , moderately dusty soil type                                   | Total site area >10,000 m <sup>2</sup> , potentially dusty soil type                    |
| Construction | Total building volume <25,000 m <sup>3</sup> .                                                             | Total building volume 25,000 – 100,000 m <sup>3</sup> .                                                      | Total building volume >100,000 m <sup>3</sup> .                                         |

| Activity | Criteria used to Determine Dust Emission Magnitude                  |                                                                          |                                                                      |
|----------|---------------------------------------------------------------------|--------------------------------------------------------------------------|----------------------------------------------------------------------|
|          | Small                                                               | Medium                                                                   | Large                                                                |
| Trackout | <10 outward HDV trips in any one day.<br>Unpaved road length <50 m. | 10-50 outward HDV trips in any one day.<br>Unpaved road length 50-100 m. | >50 outward HDV trips in any one day.<br>Unpaved road length >100 m. |

### Step 2B: Define the Sensitivity of the Area

The sensitivity of the area takes into account the following factors:

- the specific sensitivities of receptors in the area;
- the proximity and number of receptors;
- the local background PM<sub>10</sub> concentration; and
- site-specific factors, such as whether there are natural shelters, such as trees, to reduce the risk of windblown dust.

The criteria detailed in **Table B2** is used to determine the sensitivity of the receptor in relation to dust soiling, health effects and ecological effects.

**Table B2: Criteria for Determining Sensitivity of Receptors**

| Sensitivity of Receptor | Criteria for Determining Sensitivity                                                                            |                                                                        |                                                                                                                                                                           |
|-------------------------|-----------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                         | Dust Soiling Effects                                                                                            | Health Effects of PM <sub>10</sub>                                     | Ecological Sites                                                                                                                                                          |
| High                    | Dwellings, museums and other culturally important collections, medium and long-term car parks and car showrooms | Residential properties, hospitals, schools and residential care homes  | International or national designation <i>and</i> the features may be affected by dust soiling                                                                             |
| Medium                  | Parks, places of work                                                                                           | Office and shop workers not occupationally exposed to PM <sub>10</sub> | Presence of an important plant species where dust sensitivity is uncertain or locations with a national designation with features that may be affected by dust deposition |
| Low                     | Playing fields, farmland, footpaths, short-term car parks and roads                                             | Public footpaths, playing fields, parks and shopping streets           | Local designation where features may be affected by dust deposition                                                                                                       |

**Table B3** and **Table B4** are then used to define the sensitivity of the area to dust soiling and human health effects. This should be derived for each of construction, demolition, earthworks and trackout.

**Table B3: Sensitivity of the Area to Dust Soiling Effects on People and Property.**

| Receptor Sensitivity | Number of Receptors | Distance from Source (m)* |        |        |      |
|----------------------|---------------------|---------------------------|--------|--------|------|
|                      |                     | <20                       | <50    | <100   | <350 |
| High                 | >100                | High                      | High   | Medium | Low  |
|                      | 10-100              | High                      | Medium | Low    | Low  |
|                      | 1-10                | Medium                    | Low    | Low    | Low  |

| Receptor Sensitivity | Number of Receptors | Distance from Source (m)* |     |      |      |
|----------------------|---------------------|---------------------------|-----|------|------|
|                      |                     | <20                       | <50 | <100 | <350 |
| Medium               | >1                  | Medium                    | Low | Low  | Low  |
| Low                  | >1                  | Low                       | Low | Low  | Low  |

\*distances considered are to the dust source

**Table B4: Sensitivity of the Area to Human Health Impacts**

| Receptor Sensitivity | Annual Mean PM <sub>10</sub> Concentrations | Number of Receptors | Distance from the Source (m) |        |        |        |      |
|----------------------|---------------------------------------------|---------------------|------------------------------|--------|--------|--------|------|
|                      |                                             |                     | <20                          | <50    | <100   | <200   | <350 |
| High                 | >32 µg/m <sup>3</sup>                       | >100                | High                         | High   | High   | Medium | Low  |
|                      |                                             | 10-100              | High                         | High   | Medium | Low    | Low  |
|                      |                                             | 1-10                | High                         | Medium | Low    | Low    | Low  |
|                      | 28-32 µg/m <sup>3</sup>                     | >100                | High                         | High   | Medium | Low    | Low  |
|                      |                                             | 10-100              | High                         | Medium | Low    | Low    | Low  |
|                      |                                             | 1-10                | High                         | Medium | Low    | Low    | Low  |
|                      | 24-28 µg/m <sup>3</sup>                     | >100                | High                         | Medium | Low    | Low    | Low  |
|                      |                                             | 10-100              | High                         | Medium | Low    | Low    | Low  |
|                      |                                             | 1-10                | Medium                       | Low    | Low    | Low    | Low  |
|                      | <24 µg/m <sup>3</sup>                       | >100                | Medium                       | Low    | Low    | Low    | Low  |
|                      |                                             | 10-100              | Low                          | Low    | Low    | Low    | Low  |
|                      |                                             | 1-10                | Low                          | Low    | Low    | Low    | Low  |
| Medium               | >32 µg/m <sup>3</sup>                       | >10                 | High                         | Medium | Low    | Low    | Low  |
|                      |                                             | 1-10                | Medium                       | Low    | Low    | Low    | Low  |
|                      | 28-32 µg/m <sup>3</sup>                     | >10                 | Medium                       | Low    | Low    | Low    | Low  |
|                      |                                             | 1-10                | Low                          | Low    | Low    | Low    | Low  |
|                      | 24-28 µg/m <sup>3</sup>                     | >10                 | Low                          | Low    | Low    | Low    | Low  |
|                      |                                             | 1-10                | Low                          | Low    | Low    | Low    | Low  |
|                      | <24 µg/m <sup>3</sup>                       | >10                 | Low                          | Low    | Low    | Low    | Low  |
|                      |                                             | 1-10                | Low                          | Low    | Low    | Low    | Low  |
| Low                  | -                                           | >1                  | Low                          | Low    | Low    | Low    | Low  |

The sensitivity of the area is then summarised.

*Step 2C Define the Risks of Impacts*

The dust emission magnitude from **Table B1** and sensitivity of the area and receptors from **Table B2**, **Table B3** and **Table B4** are combined, and the risk of impacts from each activity (demolition, earthworks, construction and trackout) before mitigation is applied, is determined using the criteria detailed in **Table B5** to **Table B8**.

**Table B5: Risk of Dust Impacts - Demolition**

| Potential Impact<br>Sensitivity of the<br>Area | Dust Emission Magnitude |             |             |
|------------------------------------------------|-------------------------|-------------|-------------|
|                                                | Large                   | Medium      | Small       |
| High                                           | High Risk               | Medium Risk | Medium Risk |
| Medium                                         | High Risk               | Medium Risk | Low Risk    |
| Low                                            | Medium Risk             | Low Risk    | Negligible  |

**Table B6: Risk of Dust Impacts- Earthworks**

| Potential Impact<br>Sensitivity of the<br>Area | Dust Emission Magnitude |             |            |
|------------------------------------------------|-------------------------|-------------|------------|
|                                                | Large                   | Medium      | Small      |
| High                                           | High Risk               | Medium Risk | Low Risk   |
| Medium                                         | Medium Risk             | Medium Risk | Low Risk   |
| Low                                            | Low Risk                | Low Risk    | Negligible |

**Table B7: Risk of Dust Impacts- Construction**

| Potential Impact<br>Sensitivity of the<br>Area | Dust Emission Magnitude |             |            |
|------------------------------------------------|-------------------------|-------------|------------|
|                                                | Large                   | Medium      | Small      |
| High                                           | High Risk               | Medium Risk | Low Risk   |
| Medium                                         | Medium Risk             | Medium Risk | Low Risk   |
| Low                                            | Low Risk                | Low Risk    | Negligible |

**Table B8: Risk of Dust Impacts- Trackout**

| Potential<br>Sensitivity of the<br>Area | Impact<br>of the | Dust Emission Magnitude |             |            |
|-----------------------------------------|------------------|-------------------------|-------------|------------|
|                                         |                  | Large                   | Medium      | Small      |
| High                                    |                  | High Risk               | Medium Risk | Low Risk   |
| Medium                                  |                  | Medium Risk             | Low Risk    | Negligible |
| Low                                     |                  | Low Risk                | Low Risk    | Negligible |

*Step 3 Determine Site Specific Mitigation*

Step three of the IAQM guidance identifies appropriate site-specific mitigation. These measures are related to whether the site is a low, medium or high risk site.

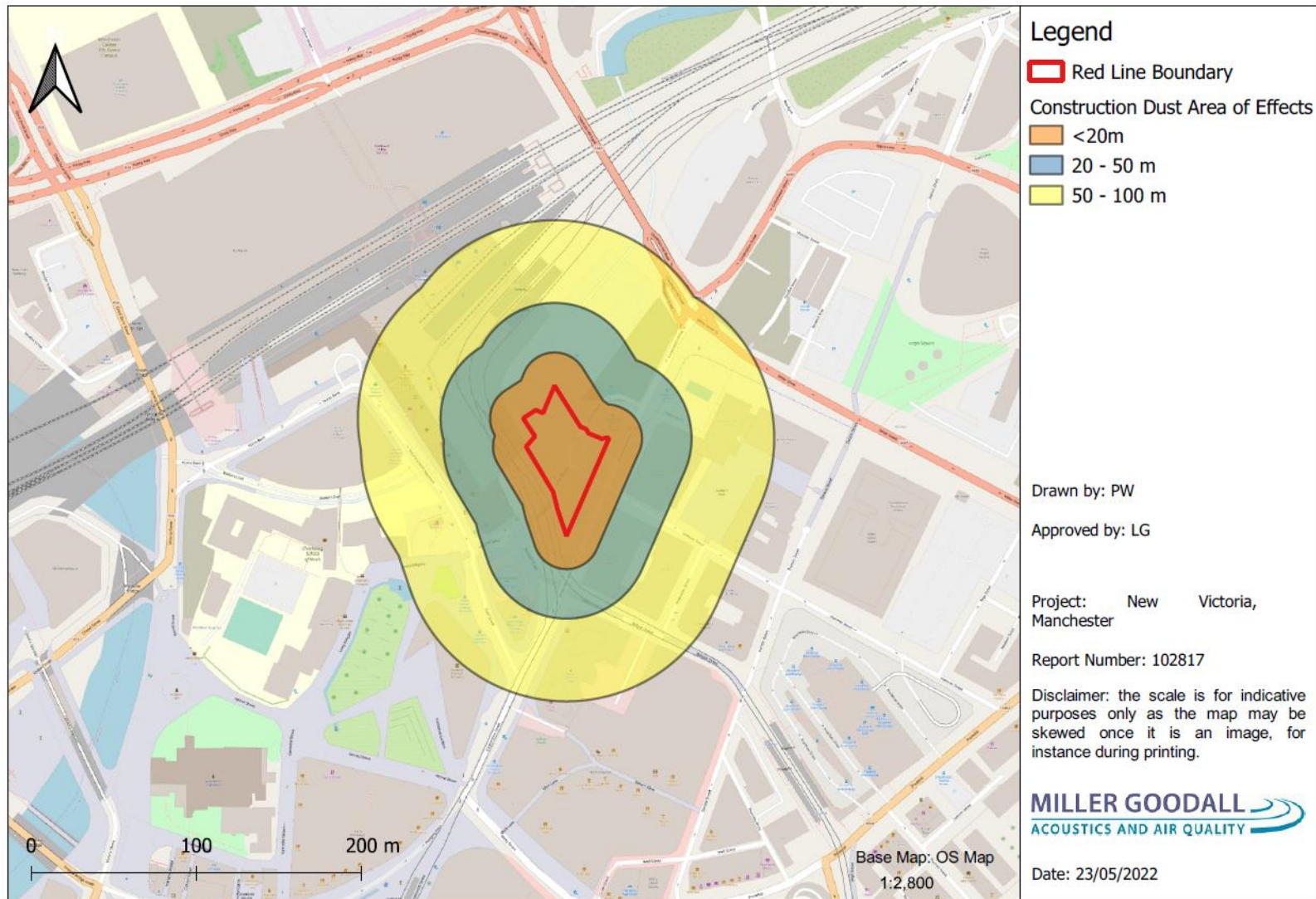
*Step 4 Determine Significance of Residual Effects*

At step four the significance of residual effects is assessed. For almost all construction activity, the aim should be to prevent significant effects on receptors through the use of effective mitigation. Experience shows that this is normally possible. Hence the residual effect will normally be 'not significant'.

There may be cases where, for example, there is inadequate access to water for dust suppression to be effective, and even with other mitigation measures in place there may be a significant effect. Therefore, it is important to consider the specific characteristics of the site and the surrounding area to ensure that a conclusion of no significant effect is robust.

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## Appendix C: Construction Dust Area of Effects



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## Appendix D: IAQM Dust Assessment Mitigation

xx Highly Recommended

x Desirable

### Measures relevant for demolition, earthworks, construction and trackout.

| Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                             | Low Risk |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| <b>Communications</b>                                                                                                                                                                                                                                                                                                                                                                          |          |
| Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary. This may be the environment manager/engineer or the site manager.                                                                                                                                                                                                          | xx       |
| Display the head or regional office contact information.                                                                                                                                                                                                                                                                                                                                       | xx       |
| Develop and implement a Dust Management Plan (DMP).                                                                                                                                                                                                                                                                                                                                            | x        |
| <b>Site management</b>                                                                                                                                                                                                                                                                                                                                                                         |          |
| Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken.                                                                                                                                                                                                                                | xx       |
| Make the complaints log available to the local authority when asked.                                                                                                                                                                                                                                                                                                                           | xx       |
| Record any exceptional incidents that cause dust and/or air emissions, either on- or offsite, and the action taken to resolve the situation in the log book.                                                                                                                                                                                                                                   | xx       |
| <b>Monitoring</b>                                                                                                                                                                                                                                                                                                                                                                              |          |
| Undertake daily on-site and off-site inspection, where receptors (including roads) are nearby, to monitor dust, record inspection results, and make the log available to the local authority when asked. This should include regular dust soiling checks of surfaces such as street furniture, cars and window sills within 100 m of site boundary, with cleaning to be provided if necessary. | x        |
| Carry out regular site inspections to monitor compliance with the DMP, record inspection results, and make an inspection log available to the local authority when asked.                                                                                                                                                                                                                      | xx       |
| Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions.                                                                                                                                                         | xx       |
| <b>Preparing and maintaining the site</b>                                                                                                                                                                                                                                                                                                                                                      |          |
| Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible.                                                                                                                                                                                                                                                                         | xx       |
| Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site.                                                                                                                                                                                                                                                              | xx       |
| Fully enclose site or specific operations where there is a high potential for dust production and the site is active for an extensive period.                                                                                                                                                                                                                                                  | x        |
| Avoid site runoff of water or mud.                                                                                                                                                                                                                                                                                                                                                             | xx       |
| Keep site fencing, barriers and scaffolding clean using wet methods.                                                                                                                                                                                                                                                                                                                           | x        |
| Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below.                                                                                                                                                                                                                | x        |
| Cover, seed or fence stockpiles to prevent wind whipping.                                                                                                                                                                                                                                                                                                                                      | x        |
| <b>Operating vehicle/machinery and sustainable travel</b>                                                                                                                                                                                                                                                                                                                                      |          |
| Ensure all on-road vehicles comply with the requirements of the London Low Emission Zone and the London NRMM standards, where applicable.                                                                                                                                                                                                                                                      | xx       |

|                                                                                                                                                                                                                                                                                                                                                               |    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| Ensure all vehicles switch off engines when stationary - no idling vehicles.                                                                                                                                                                                                                                                                                  | xx |
| Avoid the use of diesel or petrol-powered generators and use mains electricity or battery powered equipment where practicable.                                                                                                                                                                                                                                | xx |
| Impose and signpost a maximum-speed-limit of 15 mph on surfaced and 10 mph on unsurfaced haul roads and work areas (if long haul routes are required these speeds may be increased with suitable additional control measures provided, subject to the approval of the nominated undertaker and with the agreement of the local authority, where appropriate). | x  |
| <b>Operations</b>                                                                                                                                                                                                                                                                                                                                             |    |
| Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems.                                                                                                                                                  | xx |
| Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate.                                                                                                                                                                                             | xx |
| Use enclosed chutes and conveyors and covered skips.                                                                                                                                                                                                                                                                                                          | xx |
| Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate.                                                                                                                                                                                      | xx |
| Ensure equipment is readily available on site to clean any dry spillages, and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods.                                                                                                                                                                                | x  |
| <b>Waste management</b>                                                                                                                                                                                                                                                                                                                                       |    |
| Avoid bonfires and burning of waste materials.                                                                                                                                                                                                                                                                                                                | xx |

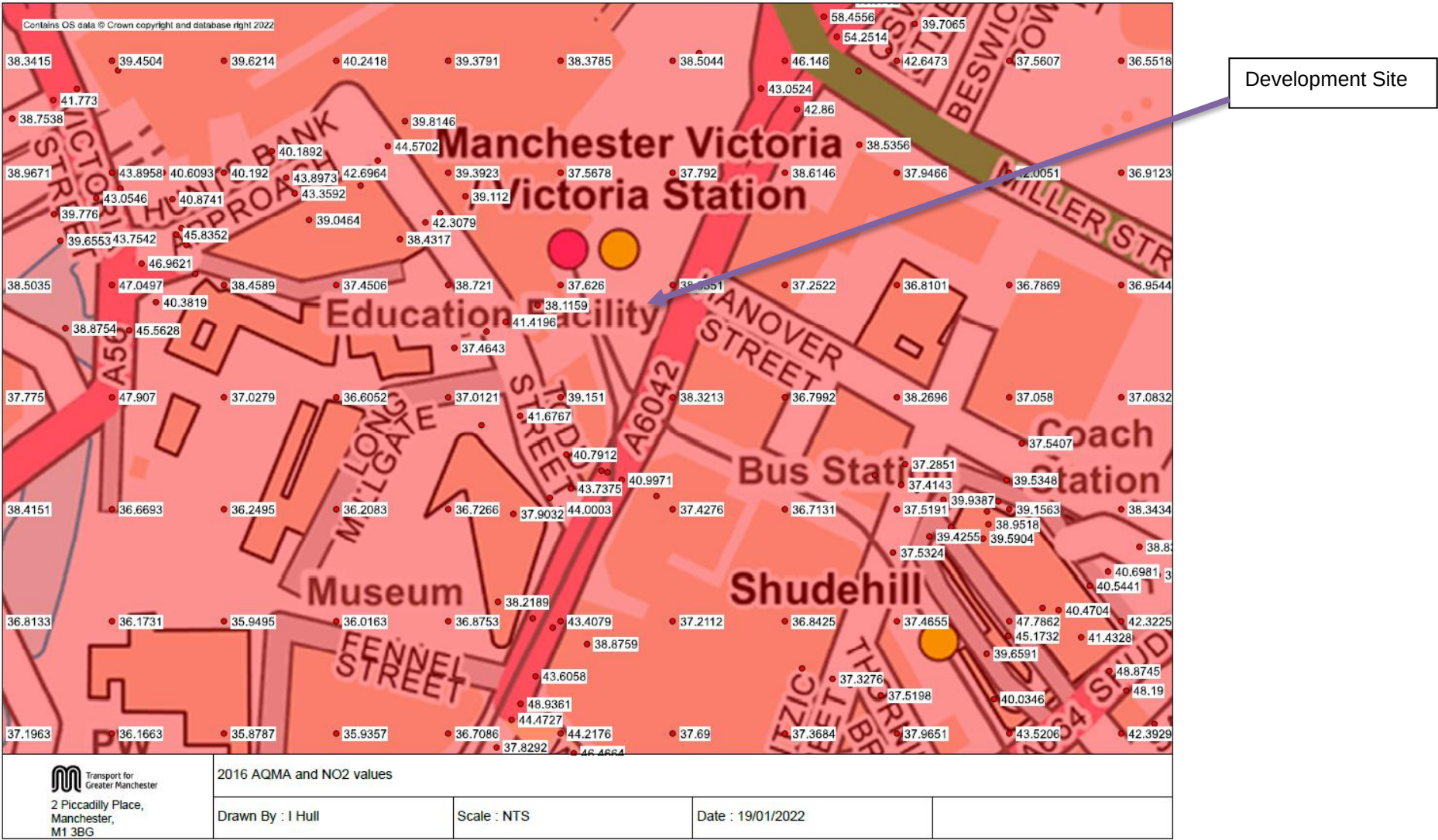
**Measures specific to construction.**

| Mitigation Measure                                                                                                                                                                                                            | Low Risk |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| Avoid scabbling (roughening of concrete surfaces) if possible.                                                                                                                                                                | x        |
| 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. | x        |

**Measures specific to trackout.**

| Mitigation Measure                                                                                                                                                                       | Low Risk |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site. This may require the sweeper being continuously in use. | x        |
| Avoid dry sweeping of large areas.                                                                                                                                                       | x        |
| Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport.                                                                                  | x        |
| Record all inspections of haul routes and any subsequent action in a site log book.                                                                                                      | x        |
| Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).                                        | x        |

Appendix E: TfGM Screenshot



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## Glossary of Terms

**AADT** Annual Average Daily Traffic flow

**Air Quality Standard** Pollutant standards relate to ambient pollutant concentrations in air, set on the basis of medical and scientific evidence of how each pollutant affects human health and the environment

**Air Quality Objective** Pollutant Objectives incorporate future dates by which a standard is to be achieved, taking into account economic considerations, practicability and technical feasibility

**Annual Mean** A mean pollutant concentration value in air which is calculated on a yearly basis, yielding one annual mean per calendar year. In the UK air quality regulations, the annual mean for a particular substance at a particular location for a particular calendar year is:

- (a) in the case of lead, the mean of the daily levels for that year;
- (b) in the case of nitrogen dioxide, the mean of the hourly means for that year;
- (c) in the case of PM<sub>10</sub>, the mean of the 24-hour means for that year.

**Annoyance (Dust)** Loss of amenity due to dust deposition or visible dust plumes, often related to people making complaints, but not necessarily sufficient to be a legal nuisance.

**AQAP** Air Quality Action Plan

**AQEG** Air Quality Expert Group

**AQMA** Air Quality Management Area

**AQMP** Air Quality Management Plan

**AQO** Air Quality Objective

**AQS** Air Quality Strategy for England, Scotland, Wales and Northern Ireland

**Background Concentrations** The term used to describe pollutant concentrations which exist in the ambient atmosphere, excluding local pollution sources such as roads and stacks

**Construction** Any activity involved with the provision of a new structure (or structures), its modification or refurbishment. A structure will include a residential dwelling, office building, retail outlet, road, etc.

**Construction Impact Assessment** An assessment of the impacts of demolition, earthworks, construction and trackout. In this Guidance, specifically the air quality impacts.

**Defra** Department for Environment, Food and Rural Affairs

**Demolition** Any activity involved with the removal of an existing structure (or structures). This may also be referred to as de-construction, specifically when a building is to be removed a small part at a time.

**Deposited Dust** that is no longer in the air and which has settled onto a surface. Deposited dust is also sometimes called amenity dust or nuisance dust, with the term nuisance applied in the general sense rather than the specific legal definition.

**DMP** Dust Management Plan; a document that describes the site-specific methods to be used to control dust emissions.

**Dust** Solid particles that are suspended in air, or have settled out onto a surface after having been suspended in air. The terms dust and particulate matter (PM) are often used interchangeably, although in some contexts one term tends to be used in preference to the other. In this guidance the term 'dust' has been used to include the particles that give rise to soiling, and to other human health and ecological effects. Note: this is different to the definition given in BS 6069, where dust refers to particles up to 75 µm in diameter.

**Earthworks** Covers the processes of soil-stripping, ground-levelling, excavation and landscaping.

**Effects** The consequences of the changes in airborne concentration and/or dust deposition for a receptor. These might manifest as annoyance due to soiling, increased morbidity or mortality due to exposure to PM<sub>10</sub> or PM<sub>2.5</sub> or plant dieback due to reduced photosynthesis. The term 'significant effect' has a specific meaning in EIA regulations. The opposite is an insignificant effect. In the context of construction impacts any effect will usually be adverse, however, professional judgement is required to determine whether this adverse effect is significant based in the evidence presented.

**EPUK** Environmental Protection UK

**HDV** Heavy Duty Vehicle

**Impacts** The changes in airborne concentrations and/or dust deposition. A scheme can have an 'impact' on airborne dust without having any 'effects', for instance if there are no receptors to experience the impact.

**LAQM** Local Air Quality Management

**LDV** Light Duty Vehicle

**Mg/m<sup>3</sup>** Microgrammes (of pollutant) per cubic metre of air. A measure of concentration in terms of mass per unit volume. A concentration of 1 µg/m<sup>3</sup> means that one cubic metre of air contains one microgramme (millionth of a gramme) of pollutant

**NO<sub>2</sub>** Nitrogen Dioxide

**NO<sub>x</sub>** A collective term used to represent the mixture of nitrogen oxides in the atmosphere, as nitric oxide (NO) and nitrogen dioxide (NO<sub>2</sub>)

**NPPF** National Planning Policy Framework

**Nuisance** The term nuisance dust is often used in a general sense when describing amenity dust. However, this term also has specific meanings in environmental law:

Statutory nuisance, as defined in S79(1) of the Environmental Protection Act 1990 (as amended from time to time).

Private nuisance, arising from substantial interference with a person's enjoyment and use of his land.

Public nuisance, arising from an act or omission that obstructs, damages or inconveniences the right of the community.

Each of these applying in so far as the nuisance relates to the unacceptable effects of emissions. It is recognised that a significant loss of amenity may occur at lower levels of emission than would constitute a statutory nuisance.

Note: as nuisance has a specific meaning in environmental law, and to avoid confusion, it is recommended that the term is not used in a more general sense.

**PM<sub>2.5</sub>** The fraction of particles with a mean aerodynamic diameter equal to, or less than, 2.5 µm. More strictly, particulate matter which passes through a size selective inlet as defined in the reference method for the sampling and measurement of PM<sub>2.5</sub>, EN 14907, with a 50% efficiency cut-off at 2.5 µm aerodynamic diameter

**PM<sub>10</sub>** The fraction of particles with a mean aerodynamic diameter equal to, or less than, 10 µm. More strictly, particulate matter which passes through a size selective inlet as defined in the reference method for the sampling and measurement of PM<sub>10</sub>, EN 12341, with a 50% efficiency cut-off at 10 µm aerodynamic diameter

**Running Annual Mean** A mean pollutant concentration value in air which is calculated on an hourly basis, yielding one running annual mean per hour. The running annual mean for a particular substance at a particular location for a particular hour is the mean of the hourly levels for that substance at that location for that hour and the preceding 8759 hours

**Trackout** The transport of dust and dirt from the construction/demolition site onto the public road network, where it may be deposited and then re-suspended by vehicles using the network. This arises when heavy duty vehicles (HDVs) leave the construction/demolition site with dusty materials, which may then spill onto the road, and/or when HDVs transfer dust and dirt onto the road having travelled over muddy ground on site.

