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# Project:
# Land at Waterloo Road, Manchester

## Air Quality Assessment

**Client :**
Hampstead Developers Limited

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## EXECUTIVE SUMMARY

EnviroSolution were commissioned by Hampstead Developers Limited to undertake an Air Quality Assessment in support of a proposed development at Land at Waterloo Road, Manchester.

The proposal comprises the erection of four houses (two pairs of 5 bed semi detached houses) including landscaping and parking.

Due to the location of the development, within close proximity to the Greater Manchester Combined Authority AQMA, there is the potential for the development to expose future site users to poor air quality, as well as to cause impacts at nearby sensitive receptors because of the construction and operational phases. Therefore, an Air Quality Assessment is required to determine baseline conditions at the site, assess site suitability for the proposed end-use and assess the potential impacts as a result of the proposed development.

Potential construction phase air quality impacts from fugitive dust emissions were assessed as a result of earthworks and construction activities. It is considered that the use of good practice control measures would provide suitable mitigation for a development of this size and nature and reduce potential impacts to an acceptable level.

Dispersion modelling was undertaken in order to predict annual mean pollutant concentrations across the application site to determine exposure risk to future occupiers. Results were subsequently verified using local monitoring results provided by Manchester City Council (MCC).

The dispersion modelling results indicated that annual mean pollutant concentrations across the application site were below the relevant air quality objectives at proposed sensitive locations.

The level of anticipated traffic generation from the site concluded that impacts on existing pollutant levels as a result of operational phase pollutant emissions were predicted to be not significant in accordance with relevant screening criteria. The use of robust assumptions, where necessary, was considered to provide sufficient confidence of results for an assessment of this nature.

There is also no onsite combustion plant with significant emissions associated with the Proposed Development. As a result, building emissions from combustion processes were also screened as not significant throughout the operational phase.

Based on the assessment results the site is considered suitable for the proposed end use and complies with the MCC Local Plan, Places for Everyone Joint Development Plan, and NPPF.

# 1. INTRODUCTION

## 1.1 Background

EnviroSolution has been commissioned by Hampstead Developers Limited hereafter referred to as "the Client" to undertake an Air Quality Assessment in support of a proposal, comprising the erection of four houses (two pairs of 5 bed semi detached houses) including landscaping and parking, hereinafter referred to as the "Proposed Development".

## 1.2 Site Location and Assessment Context

The application site is located at Land at Waterloo Road, Manchester at approximate National Grid Reference (NGR) 384015, 401056.

The application site is located 13.2m from the Greater Manchester Combined Authority (GMCA) Air Quality Management Area (AQMA) which has been declared due to exceedances of $NO_2$ Air Quality Objective (AQO). Subsequently, the Proposed Development has the potential to introduce future occupants into an area of elevated $NO_2$ and particulate matter ($PM_{10}$ and $PM_{2.5}$) concentrations, as well as to cause impacts at sensitive receptor locations during the construction and operational phases.

An Air Quality Assessment has been produced to assess the potential for air quality impacts at existing sensitive use and to assess site suitability for the proposed end-use. The assessment will be undertaken in accordance with the requirements of the National Planning Policy Framework (NPPF) and the MCC Local Planning Policy.

Reference should be made to Figure 1 within Appendix A for a location plan.

## 1.3 Limitations

This report has been produced in accordance with EnviroSolution standard terms of engagement. EnviroSolution has prepared this report solely for the use of the Client and those parties with whom a warranty agreement has been executed, or with whom an assignment has been agreed. Should any third party wish to use or rely upon the contents of the report, written approval must be sought from EnviroSolution; a charge may be levied against such approval.

# 2. LEGISLATION, GUIDANCE AND POLICY

The following legislation, guidance and policy will be considered and adhered to during the preparation of the Air Quality Assessment:

- European Union (EU) Directive 2008/50/EC;
- The National Planning Policy Framework (NPPF), updated on 12th December 2024;
- The National Planning Practice Guidance (NPPG), relevant chapters produced on 1st November 2019;
- Section 82 of the Environment Act (1995) (Part IV), updated 9th November 2021;
- Air Quality Strategy: Framework for local authority delivery, April 2023;
- The Air Quality Standards (Amendment) Regulations (2016);
- Local Air Quality Management Technical Guidance 2022 LAQM.TG(22), DEFRA, 2022;
- Guidance on the Assessment of Dust from Demolition and Construction, Institute of Air Quality Management (IAQM), January 2024;
- Land-Use Planning and Development Control: Planning for Air Quality, Environmental Protection UK (EPUK) and Institute of Air Quality Management (IAQM), January 2017;
- Environmental Improvement Plan 2025, DEFRA, December 2025;
- Places For Everyone Joint Development Plan Document For Bolton, Bury, Manchester, Oldham, Rochdale, Salford, Tameside, Trafford and Wigan, March 2024; and
- Manchester's Local Development Framework Core Strategy Development Plan Document, July 2012.

## 2.1 UK Legislation and Guidance

The Air Quality Standards (Amendment) Regulations (2016) came into force on 31st December 2016. These Regulations amend the Air Quality Standards Regulations 2010 and transpose the EU Directive 2008/50/EC into UK law. Air Quality Limit Values (AQLVs) were published in these regulations for 7 pollutants, as well as Target Values for an additional 6 pollutants. It should be taken into consideration that the AQLV for $PM_{2.5}$ stated in the Air Quality Standards Regulations (2010) was amended in the Environment (Miscellaneous Amendments) (EU Exit) Regulations (2020).

Part IV of the Environment Act (2021) requires the UK government to produce a national Air Quality Strategy (AQS) which contains standards, objectives and measures for improving ambient air quality. The most recent AQS was produced by DEFRA and published on 28th April 2023. The AQS sets out Air Quality Objectives (AQOs) that are maximum ambient pollutant concentrations that are not to be exceeded either without exception or with a permitted number of exceedances over a specified timescale. These are generally in line with the AQLVs, although the requirements for compliance vary slightly.

The Environmental Improvement Plan, released in December 2025, outlines both long-term and interim objectives aimed at minimising public exposure to $PM_{2.5}$. Following this, the 2040

concentration goal was established within the Environmental Targets (Fine Particulate Matter) Regulations (2023).

Table 1 presents the AQOs for pollutants considered within this assessment.

**Table 1: Air Quality Objectives**

| Pollutant | Air Quality Objectives | |
|---|---|---|
| | **Concentration (µg/m³)** | **Averaging Periods** |
| $NO_2$ | 40 | Annual mean |
| | 200 | 1-hour mean; not to be exceeded more than 18 times a year |
| $PM_{10}$ | 40 | Annual mean |
| | 50 | 24-hour mean; not to be exceeded more than 35 times a year |
| $PM_{2.5}$ | 20 (10*) | Annual mean |

* Target to be achieved by 2030.

Table 2 summarises the advice provided in LAQM.TG(22) on where the AQOs for pollutants considered within this report apply.

**Table 2: Examples of Where the Air Quality Objectives Apply**

| Averaging Periods | Objectives Should Apply At | Objectives Should Not Apply At |
|---|---|---|
| Annual mean | All locations where members of the public might be regularly exposed: building façades of residential properties, schools, hospitals, care homes etc. | Building façades of offices or other places of work where members of the public do not have regular access: hotels, unless people live there as their permanent residence; gardens of residential properties; kerbside sites (as opposed to locations at the building façade); or any other location where public exposure is expected to be short term. |
| 24-hour mean | All locations where the annual mean objective would apply, together with hotels and gardens of residential properties. | Kerbside sites (as opposed to locations at the building façade), or any other location where public exposure is expected to be short term. |
| 1-hour mean | All locations where the annual mean and 24-hour mean objectives apply; kerbside sites (for example, pavements of busy shopping streets); those parts of car parks, bus stations and railway stations etc. which are not fully enclosed, where members of the public might reasonably be expected to spend one hour or more; any outdoor locations where members of | Kerbside sites where the public would not be expected to have regular access. |

| Averaging Periods | Objectives Should Apply At | Objectives Should Not Apply At |
|---|---|---|
| | the public might reasonably be expected to spend one hour or longer. | |

The results of the dispersion modelling assessment will also be compared against the relevant AQOs detailed in Table 1 to determine significance.

## 2.2 Local Air Quality Management

Under Section 82 of the Environment Act (2021) (Part IV), Local Authorities (LAs) are required to periodically review and assess air quality within their area of administration under the system of Local Air Quality Management (LAQM). This review and assessment of air quality involves considering present and likely future air quality against the AQOs. If it is predicted that levels at sensitive locations where members of the public are regularly present for the relevant averaging period are likely to be exceeded, the LA is required to declare an AQMA. For each AQMA the LA is required to produce an Air Quality Action Plan (AQAP), the objective of which is to reduce pollutant concentrations in pursuit of the AQOs.

## 2.3 Local Planning Policy

A review of the local policy indicated the following policy in relation to air quality that is relevant to this assessment:

**Policy JP-S5: Clean Air**
A comprehensive range of measures will be taken to support improvements in air quality, focusing particularly on locations where people live, where children learn and play, where there are impacts on the green infrastructure network and where air quality targets are not being met, including:

1. Locating and designing development, and focusing transport investment, so as to reduce reliance on forms of transport that generate air pollution;
2. Determining planning applications having regard to the most recent development and planning control guidance published jointly by the Institute of Air Quality Management (IAQM) and Environmental Protection UK (EPUK), and the most recent IAQM Guidance on the Assessment of Dust from Demolition and Construction, or relevant successor guidance, including the requirement for developers to submit construction management plans as appropriate;
3. Requiring applications for developments that could have an adverse impact on air quality to submit relevant air pollution data so that adverse impacts on air quality can be fully assessed and development only permitted where they are acceptable and/or suitable mitigation can be provided;
4. Restricting developments that would generate significant point source pollution such as some types of industrial activity and energy generation;
5. Significantly expanding the existing commercial network of electric vehicle charging points, both for public and private use, including as part of new developments;

6. Implementing the Clean Air Plan and associated measures;
7. Facilitating the more sustainable distribution of goods within the urban area, including through accommodating urban consolidation centres and urban distribution centres that use ultra-low-emission vehicles, and local delivery facilities to reduce repeat delivery attempts;
8. Designing streets to avoid trapping air pollution at ground level, including through the appropriate location and scale of buildings and trees;
9. Controlling traffic and parking within and around schools, early years sites and other locations that are particularly sensitive to air quality;
10. Promoting actions that help remove pollutants from the air, such as enhancing the green infrastructure network and using innovative building materials that capture air pollutants; and
11. Development should be located in areas that maximise the use of sustainable travel modes and be designed to minimise exposure to high levels of air pollution, particularly for vulnerable users

**Policy JP-P1 Sustainable Places**

We aim to become one of the most liveable city regions in the world, consisting of a series of beautiful, healthy and varied places, each having the following key attributes that all development, wherever appropriate, should be consistent with:

15. Comfortable and inviting, with indoor and outdoor environments:

B. Addressing microclimate issues such as sunlight, indoor air quality, overheating, shade, wind and shelter

**Policy EN 16**

**Air Quality**

The Council will seek to improve the air quality within Manchester, and particularly within Air Quality Management Areas, located along Manchester's principal traffic routes and at Manchester Airport. Developers will be expected to take measures to minimise and mitigate the local impact of emissions from traffic generated by the development, as well as emissions created by the use of the development itself, including from Combined Heat and Power and biomass plant.

When assessing the appropriateness of locations for new development the Council will consider the impacts on air quality, alongside other plan objectives. This includes cumulative impacts, particularly in Air Quality Management Areas.

**Policy DM 1**

**Development Management**

All development should have regard to the following specific issues for which more detailed guidance may be given within a supplementary planning document:

iii. Effects on amenity, including privacy, light, noise, vibration, air quality, odours, litter, vermin, birds, road safety and traffic generation. This could also include proposals which would be sensitive to existing environmental conditions, such as noise.

Reference has been made to these policies during the undertaking of this Air Quality Assessment.

# 3. METHODOLOGY

## 3.1 Construction Phase Assessment

There is the potential for fugitive dust emissions to occur as a result of construction phase activities. These have been assessed in accordance with the methodology outlined within the IAQM document 'Guidance on the Assessment of Dust from Demolition and Construction'.

Reference should be made to Appendix C for details of the relevant IAQM construction phase assessment criteria, which were utilised in conjunction with site specific information.

Activities on the proposed construction site have been divided into the following types to reflect their different potential impacts. These are:

- Demolition
- Earthworks
- Construction
- Trackout

The potential for dust emissions was assessed for each activity that is likely to take place and considered three separate dust effects:

- Annoyance due to dust soiling
- Harm to ecological receptors
- The risk of health effects due to a significant increase in exposure to $PM_{10}$ and $PM_{2.5}$

A desktop survey will be undertaken to identify human and ecological receptors within the relevant assessment buffers specified by the IAQM guidance. Should sensitive receptors not be present within the relevant distances then negligible impacts would be expected and further assessment is not necessary.

Following the identification of sensitive receptors, a site is then allocated a risk category which is assigned to each activity, based on the scale and nature of the works, as well as the sensitivity of the area to dust impacts.

The assigned magnitude and sensitivity will then determine the overall risk and appropriate mitigation measures to be employed during construction phase activities.

## 3.2 Operational Phase Assessment

### 3.2.1 Future Exposure

The Proposed Development is located 13.2m from the from GMCA AQMA. As such, the proposals have the potential to introduce new receptors into an area of existing poor air quality, as well as to cause impacts upon existing pollution levels at nearby sensitive receptors within the AQMA.

Detailed dispersion modelling was therefore undertaken to quantify $NO_2$, $PM_{10}$ and $PM_{2.5}$ pollutant exposure across the site and determine suitability for the proposed use. The following modelling scenarios were utilised during the assessment:

- 2024 as baseline year for verification against latest ratified data;
- 2029 do-something (DS) (predicted traffic flows in 2029 should the proposals be completed)

In light of expected emission improvements to the national vehicle fleet guided by government policy, it would be unrealistic not to assume a reduction to vehicle emission factors in future years, given the anticipated development year of 2029.

The 2029 scenario assumes an emission drop off based on assumptions provided by the Emission Factor Toolkit (Eft v14.1) supported by the uptake of low emission vehicles and government incentives and targets concerning fleet proportions by 2030.

The results of the dispersion modelling assessment will also be compared against the relevant AQOs detailed in Table 1 to determine significance. Full details of data used for the modelling assessment are presented in Appendix B of this report.

### 3.2.2 Road Vehicle Exhaust Impact Assessment

Based on the details of the Proposed Development and anticipated trip generation a screening assessment in accordance with the EPUK and IAQM guidance was determined a suitable assessment approach. The assessment will determine road traffic exhaust and combustion emission impacts associated with the Proposed Development and confirm the requirement for detailed assessment work. The EPUK and IAQM document states the following criteria to help establish when an air quality assessment is likely to be considered necessary:

- Proposals that will cause a change in Light Duty Vehicle (LDV) flows of more than 100 Annual Average Daily Traffic (AADT) within or adjacent to an AQMA or more than 500 elsewhere;
- Proposals that will cause a change in Heavy Duty Vehicle (HDV) flows of more than 25 AADT within or adjacent to an AQMA or more than 100 elsewhere;
- Proposals which include either a centralised plant using biofuel, a combustion plant with single or thermal input >300KWh or a standby emergency generator associated with a centralised energy centre; and
- Proposals which include combustion processes of any size.

Should the above criteria not be met, the EPUK and IAQM document considers air quality impacts associated with the scheme to be not significant and no further assessment is required. Conversely, should the criterion be exceeded it may be deemed necessary that further assessment is required.

# 4. BASELINE

Existing air quality conditions in the vicinity of the application site were identified in order to provide a baseline for assessment. These are detailed in the following sections.

## 4.1 Local Air Quality Management

As required by the Environment Act (2021), MCC has undertaken a review and assessment of air quality within their area of administration. The closest AQMA that has been declared is described as:

- Greater Manchester Combined Authority AQMA

The application site is located 13.2m from the GMCA AQMA. As such there is the potential for the Proposed Development to introduce future site users into an area of elevated $NO_2$ concentrations, and cause air quality impacts during the construction and operational phases. This has been considered within this report.

MCC has concluded that concentrations of all other pollutants considered within the AQS are currently below the relevant AQOs and as such no further AQMAs have been designated.

## 4.2 Air Quality Monitoring

Monitoring of pollutant concentrations is undertaken by MCC using monitoring methods throughout their areas of administration. A review of most recent Air Quality Monitoring Data indicated that there are currently no automatic analysers and 6 diffusion tubes located within the vicinity of the Proposed Development, presented in Table 3.

**Table 3: Monitoring Results**

| ID | Site Name | Type | NGR (m) | | Distance to Site (m) | Annual Mean Concentration (µg/m³) | | |
|---|---|---|---|---|---|---|---|---|
| | | | X | Y | | 2022 | 2023 | 2024 |
| SA86NO | Bury Old Road | Kerbside | 383819 | 401771 | 740.61 | **45.2** | **43.2** | 38.9 |
| SA83NO | Bury New Road | Roadside | 382945 | 400732 | 1118.64 | 25.5 | 23.2 | 19.9 |
| MA104BNO | Cheetwood Primary School, Waterloo Road | Roadside | 383511 | 399906 | 1256.59 | 37.9 | 34.5 | 31.1 |
| MA100BNO | Middleton Road | Roadside | 383606 | 402293 | 1302.44 | 33.0 | 30.6 | 27.2 |
| MA103BNO | Queens Rd, Harpurhey | Roadside | 385431 | 400653 | 1472.08 | **40.1** | 37.9 | 35.4 |
| MA101BNO | Rochdale Rd, Harpurhey | Roadside | 385999 | 402026 | 2207.66 | 35.6 | 34.9 | 32.1 |

As indicated in Table 3, there were exceedances of annual mean AQOs at the monitoring locations in recent years, shown above in bold. There are no recorded exceedances in the latest monitoring year of 2024. Reference should be made to Figure 2 within Appendix A for a graphical representation of the monitoring locations.

## 4.3 Background Pollutant Concentrations

The total concentration of a pollutant consists of explicit local emission sources (such as roads and industrial sources) and the background component. The background component consists of indeterminate sources which are transported into an area from further away by meteorological conditions. Background pollutant concentrations are therefore the ambient level of pollution that is not affected by local sources of pollution.

It is not usually practical to obtain a true representation of background levels in urban areas due to corruption by local sources; background levels used in assessments may contain a mixture of both sources.

Predictions of background pollutant concentrations on a 1km by 1km grid basis have been produced by DEFRA for the entire of the UK to assist LAs in their Review and Assessment of air quality. The Proposed Development site is located across grid square:

- NGR: 384500, 401500

Data for this location was downloaded from the DEFRA website. For the purpose of this assessment, background concentrations are summarised in Table 4 for the base year (2024) and the predicted development opening year (2029).

The Urban Background monitoring station (ID: MA26ANO), located approximately 2183.32 m from the site, was used to obtain background concentrations for $NO_2$, as it provides more representative measurements of local concentrations.

**Table 4: Predicted Background Pollutant Concentrations**

| Pollutant | Predicted Background Concentration (µg/m³) | |
|---|---|---|
| | **2024** | **2029** |
| $NO_x$ | 21.00438 | 16.82916 |
| $NO_2$ | 24.60000 | 24.60000 |
| $PM_{10}$ | 12.97041 | 12.73678 |
| $PM_{2.5}$ | 7.696197 | 7.442142 |

As shown in Table 4, background concentrations of all pollutants are below the relevant AQOs detailed in Table 1.

## 4.4 Sensitive Receptors

A sensitive receptor is defined as any location which may be affected by changes in air quality as a result of a development. These have been defined for construction dust impacts in the following Sections.

### 4.4.1 Construction Phase Sensitive Receptors

There are no nationally or European designated ecological receptors within 50m of the Site boundary, or within 50m from a route used by construction vehicles on the public highway (up to 250m from the Site entrance(s)). Therefore, the risk of dust effects at a nationally or European designated ecological receptor site from construction impacts have not been considered further in this assessment.

Human receptors sensitive to potential dust impacts during earthworks and construction were identified from a desk-top study of the area up to 250m from the Proposed Development boundary. These are summarised in Table 5.

**Table 5: Construction Phase Dust Sensitive Receptors**

| Distance from Site Boundary (m) | Approximate Number of Human Receptors |
|---|---|
| Less than 20 | 1 - 10 |
| 20 - 50m | 10 - 100 |
| 50 - 100m | More than 100 |
| 100 - 250m | More than 100 |

Reference should be made to Figure 3 within Appendix A for a graphical representation of construction phase dust buffer zones.

Receptors sensitive to potential dust impacts from trackout were identified from a desk-top study of the area up to 50m from the road network within 250m of the site access route. These are summarised in Table 6. The construction traffic will access the Proposed Development via Waterloo Road.

**Table 6: Trackout Dust Sensitive Receptors**

| Distance from Trackout Routes (m) | Approximate Number of Human Receptors |
|---|---|
| Less than 20 | 10 - 100 |
| 20 - 50m | More than 100 |

Reference should be made to Figure 4 within Appendix A for a graphical representation of trackout dust buffer zones. A number of additional factors have been considered when determining the sensitivity of the surrounding area. These are summarised in Table 7.

**Table 7: Additional Area Sensitivity Factors**

| Guidance | Comment |
|---|---|
| Whether there is any history of dust generating activities in the area | The site is located in a High sensitivity area. There is likely to have been a history of dust generating activities due to commuting and development processes in the locality. |
| The likelihood of concurrent dust generating activity on nearby sites. | A review of the MCC Planning Portal indicated that there are no planning applications within close proximity of the Proposed Development. As such, there is low potential for concurrent dust generation to occur. |
| Pre-existing screening between the source and the receptors | There is no pre-existing screening between the source and the receptors. |
| Conclusions drawn from analysing local meteorological data which accurately represent the area: and if relevant the season during which works will take place | The wind direction is predominantly from the South of the development. As such, properties to the North of the site would be most affected by dust emissions. |
| Conclusions drawn from local topography | The topography or the area appears to be predominantly flat. As such, there are no constraints to dust dispersion. |
| Duration of the potential impact, as a receptor may become more sensitive over time | Currently the duration of the construction phase is unknown. |
| Any known specific receptor sensitivities which go beyond the classifications given in the document. | No specific receptor sensitivities identified during the baseline. |

### 4.1.2 Operational Phase Sensitive Receptors

A desk top study was undertaken to identify the closest receptor locations to the application site. This indicated residential locations within close proximity to development boundaries. There are no educational or medical facilities in the vicinity of the application site and affected road networks.

# 5. ASSESSMENT

## 5.1 Construction Phase Assessment

The undertaking of activities such as excavation, ground works, cutting, construction, concrete batching and storage of materials has the potential to result in fugitive dust emissions throughout the construction phase. Vehicle movements both on-site and on the local road network also have the potential to result in the re-suspension of dust from haul road and highway surfaces.

The desk-study detailed in Section 4.4 identified a number of receptors with a high classification of sensitivity within 250m of the site boundary, and within 50m of the anticipated trackout routes. As such, a detailed assessment of potential dust impacts was required, and summarised in the below sections.

Reference should be made to Appendix B for details of the relevant IAQM construction phase assessment criteria, which were utilised in conjunction with site specific information.

### 5.1.1 Step 2A – Magnitude

The scale and nature of the works was determined to assess the magnitude of dust arising from each construction phase activity. The determination of magnitude was based upon the criteria detailed in Appendix B, with the outcome of Step 2A is summarised below in Table 8.

**Demolition**

Demolition was not required for this project, and thus, it is not anticipated that air quality impacts would arise as a result of demolition activities.

**Earthworks**

The area of the site is less than 18,000m². As such, the magnitude of potential dust emissions related to earthwork activities is considered Small.

**Construction**

Given the scale of the Proposed Development the total building and infrastructure volume is less than 12,000m³. As such, the magnitude of potential dust emissions related to construction activities is considered Small.

**Trackout**

Information on the number of HDV trips to be generated during the construction phase of the Proposed Development was not available at the time of assessment. As such, it is anticipated that

the unpaved road length is likely to be less than 50m. The magnitude of potential dust emissions from trackout is therefore considered Small.

**Table 8: Dust Emission Magnitude**

| Magnitude of Activities | | |
|---|---|---|
| **Earthworks** | **Construction** | **Trackout** |
| Small | Small | Small |

### 5.1.2 Step 2B – Sensitivity

The next step (Step 2B) is to determine the sensitivity of the surrounding area, based on general principles such as amenity and aesthetics, as well as human exposure sensitivity.

**Dust Soiling**

As shown in Section 4.4.1, the desktop study indicated approximately more than 100 sensitive receptors within 250m of the Proposed Development boundary and more than 100 within 20m of the anticipated trackout routes.

Based on the assessment criteria detailed in Appendix B, the sensitivity of the receiving environment to potential dust soiling impacts was considered to be Medium for all construction phase activities. This is because the site is situated in a predominantly High sensitivity area, and the people would reasonably be expected to be present here for extended periods of time.

**Human Health**

The annual mean concentration of $PM_{10}$ is 12.97µg/$m^3$ as detailed in Section 4. Based on annual mean $PM_{10}$ concentrations, receptor sensitivity and the receptor counts provided above, the area is considered to be Low for all construction phase activities.

The sensitivity of the receiving environment to specific potential dust impacts, based on the criteria detailed in Appendix B is summarised in Table 9.

**Table 9: Sensitivity of the Surrounding Area**

| Potential Impact | Sensitivity of the Surrounding Area | | |
|---|---|---|---|
| | **Earthworks** | **Construction** | **Trackout** |
| Dust Soiling | Medium | Medium | High |
| Human Health | Low | Low | Low |
| Ecological | Negligible | Negligible | Negligible |

### 5.1.3 Step 2C – Risk

Both the magnitude and sensitivity factors are combined in Step 2C to determine the risk of dust impacts without the application of best practice mitigation measures.

It should be noted that the potential for impacts depends significantly on the distance between the dust generating activity and receptor location. Risk was predicted based on a worst-case scenario of works being undertaken at the site boundary closest to each sensitive area. Therefore, actual risk is likely to be lower than that predicted during the majority of the construction phase. A summary of the risk from each dust generating activity is provided in Table 10.

**Table 10: Summary of Potential Unmitigated Dust Risks**

| Potential Impact | Risk | | |
|---|---|---|---|
| | Earthworks | Construction | Trackout |
| Dust Soiling | Low | Low | Low |
| Human Health | Negligible | Negligible | Negligible |
| Ecological | Negligible | Negligible | Negligible |

### 5.1.4 Step 3 – Mitigation

The IAQM guidance provides a number of potential mitigation measures to reduce impacts during the construction phase. These measures have been adapted for the Proposed Development site as summarised in Table 11.

**Table 11: Fugitive Dust Mitigation Measures**

| Issue | Control Measure |
|---|---|
| Communication | • 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.<br>• Display the head or regional office contact information.<br>• Develop and implement a Dust Management Plan (DMP), which may include measures to control other emissions, approved by the Local Authority. The level of detail will depend on the risk, and should include as a minimum the highly recommended measures in this document. The desirable measures should be included as appropriate for the site. |
| Site Management | • 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.<br>• Make the complaints log available to the local authority when asked. |

| Issue | Control Measure |
|---|---|
| | • Record any exceptional incidents that cause dust and/or air emissions, either on- or off-site, and the action taken to resolve the situation in the log book. |
| Monitoring | • 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.<br>• 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.<br>• 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.<br>• Agree dust deposition, dust flux, or real-time PM10 continuous monitoring locations with the Local Authority. Where possible commence baseline monitoring at least three months before work commences on site or, if it a large site, before work on a phase commences. Further guidance is provided by IAQM on monitoring during demolition, earthworks and construction. |
| Preparing and Maintaining the Site | • Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible.<br>• Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site.<br>• Fully enclose site or specific operations where there is a high potential for dust production and the site is actives for an extensive period.<br>• Avoid site runoff of water or mud.<br>• Keep site fencing, barriers and scaffolding clean using wet methods.<br>• 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.<br>• Cover, seed or fence stockpiles to prevent wind whipping. |
| Operating vehicle/machinery and sustainable travel | • Ensure all vehicles switch off engines when stationary - no idling vehicles.<br>• Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable.<br>• 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). |
| Operations | • 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.<br>• Ensure an adequate water supply on the site for effective dust/particulate matter suppression/ mitigation, using non-potable water where possible and appropriate.<br>• Use enclosed chutes and conveyors and covered skips.<br>• Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate. |

| Issue | Control Measure |
|---|---|
| | • 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. |
| Waste Management | • Avoid bonfires and burning of waste materials. |
| Construction | • Avoid scabbling (roughening of concrete surfaces) if possible.<br>• 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. |
| Trackout | • 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.<br>• Avoid dry sweeping of large areas.<br>• Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport.<br>• Record all inspections of haul routes and any subsequent action in a site log book.<br>• Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable). |

### 5.1.5 Step 4 – Residual Impacts

Assuming the relevant mitigation measures outlined in Table 11 are implemented, the residual effect from all dust generating activities is predicted to be negligible and therefore **not significant** in accordance with the IAQM guidance.

## 5.2 Operational Phase Assessment

The assessment was undertaken in accordance with the methodology detailed in Section 3.2.

### 5.2.1 Future Exposure

Annual mean $NO_2$, $PM_{10}$ and $PM_{2.5}$ concentrations were predicted across the Proposed Development for the 2029 DS scenario at a height of 1.5m to represent exposure across the ground floor level, as shown in Figures 7 to 9 within Appendix A.

Background $NO_2$ $PM_{10}$ and $PM_{2.5}$ levels are likely to be lower at elevated heights due to increased distance from emission sources, such as roads. Therefore, predicted concentrations at heights above ground floor level are considered acceptable in regards to future exposure and have not been assessed further.

**Nitrogen Dioxide ($NO_2$)**

Predicted annual mean $NO_2$ concentrations across the Proposed Development site during the DS scenario are summarised in Table 12.

**Table 12: Modelling Results - Annual Mean $NO_2$ at Proposed Development**

| Floor Level | Predicted 2029 Annual Mean $NO_2$ Concentration (µg/m³) |
|---|---|
| Ground (1.5m) | 25.21 – 27.26 |

The predicted concentrations indicate that there were no exceedances of the AQO across the Proposed Development. As such, it is considered that annual mean $NO_2$ levels at the Proposed Development site should not be viewed as a constraint to development.

Predictions of 1-hour $NO_2$ concentrations were not produced as part of the dispersion modelling assessment. LAQM.TG(22) states if annual mean $NO_2$ concentrations are below 60µg/m³ then it is unlikely that the 1-hour AQO will be exceeded. As such, based on the results in Table 12, it is not predicted that on-site concentrations will exceed the 1-hour mean AQO for $NO_2$.

Based on the results of the dispersion modelling assessment, the site is considered to be suitable for the proposed end use for $NO_2$ concentrations.

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

Predicted annual mean $PM_{10}$ and $PM_{2.5}$ concentrations across the Proposed Development site during the DS scenario are summarised in Table 13.

**Table 13: Modelling Results - Annual Mean $PM_{10}$ and $PM_{2.5}$ at Proposed Development**

| Floor Level | Predicted 2029 Annual Mean Concentration (µg/m³) | |
|---|---|---|
| | $PM_{10}$ | $PM_{2.5}$ |
| Ground (1.5m) | 13.31 – 14.20 | 7.65 – 8.57 |

The predicted concentrations indicate that there were no exceedances of the AQO across the Proposed Development. As such, it is considered that annual mean $PM_{10}$ and $PM_{2.5}$ levels at the Proposed Development site should not be viewed as a constraint to development.

Based on the results of the dispersion modelling assessment, the site is considered to be suitable for the proposed end use for $PM_{10}$ and $PM_{2.5}$ concentrations.

### 5.2.2 Road Vehicle Exhaust Emission Impacts

Any additional vehicle movements associated with the proposed development will generate exhaust emissions, such as $NO_2$, $PM_{10}$ and $PM_{2.5}$ on the local and regional road networks.

It is considered that the operational phase of the site will not result in a change of AADT flows of more than 100, produce over 25 HDV movements per day or significantly affect average speeds on the local road network.

Subsequently, potential air quality impacts associated with operational phase road vehicle exhaust emissions are predicted to be **not significant** in accordance with the EPUK and IAQM screening criteria shown in Section 3.2.2.

### 5.2.3 Combustion Emission Impacts

There is also no onsite combustion plant with significant emissions associated with the Proposed Development. As a result, building emissions from combustion processes were also screened as not significant throughout the operational phase.

# 6. CONCLUSION

EnviroSolution were commissioned by Hampstead Developers Limited to undertake an Air Quality Assessment in support of a proposed residential development at Land at Waterloo Road, Manchester.

During the construction phase of the Proposed Development there is the potential for air quality impacts as a result of fugitive dust emissions from the site. These were assessed in accordance with the IAQM methodology. Assuming good practice dust control measures are implemented, the residual potential air quality impacts from dust generated by earthworks and construction and trackout activities was predicted to be **not significant**.

Dispersion modelling was undertaken to quantify annual mean $NO_2$, $PM_{10}$ and $PM_{2.5}$ concentrations across the application to assess suitability for proposed use. Modelling results were subsequently verified using local monitoring data.

The dispersion modelling results indicated that annual mean $NO_2$, $PM_{10}$ and $PM_{2.5}$ concentrations across the application site were **below** the relevant AQOs at the proposed sensitive use.

An assessment was undertaken using the EPUK and IAQM screening criteria to determine the potential for vehicle trips generated by the Proposed Development to affect local air quality. The traffic data indicated that operational traffic flows are **below** the relevant EPUK and IAQM assessment thresholds.

There is also no onsite combustion plant with significant emissions associated with the Proposed Development. As a result, building emissions from combustion processes were also screened as not significant throughout the operational phase.

Based on the assessment results the site is considered suitable for the proposed end use and complies with the MCC Local Plan, Places for Everyone Joint Development Plan, and NPPF.

## ABBREVIATIONS

| | |
|---|---|
| MCC | Manchester City Council |
| AADT | Annual Average Daily Traffic |
| ADM | Atmospheric Dispersion Modelling |
| APEC | Air Pollution Exposure Criteria |
| AQLV | Air Quality Limit Value |
| AQMA | Air Quality Management Area |
| AQO | Air Quality Objectives |
| AQS | Air Quality Strategy |
| CERC | Cambridge Environmental Research Consultants |
| DEFRA | Department for Environment, Food and Rural Affairs |
| DfT | Department for Transport |
| DM | Do Minimum |
| DS | Do Something |
| DMP | Dust Management Plan |
| EPUK | Environmental Protection UK |
| EU | European Union |
| GIA | Gross Internal Area |
| HDV | Heavy Duty Vehicle |
| IAQM | Institute of Air Quality Management |
| LAQM | Local Air Quality Management |
| LA | Local Authority |
| LDV | Light Duty Vehicle |
| NGR | National Grid Reference |
| $NO_2$ | Nitrogen dioxide |
| $NO_x$ | Oxides of nitrogen |
| NPPF | National Planning Policy Framework |
| NPPG | National Planning Practice Guidance |
| $PM_{2.5}$ | Particulate matter with an aerodynamic diameter of less than 2.5µm |
| $PM_{10}$ | Particulate matter with an aerodynamic diameter of less than 10µm |
| TEMPRO | Trip End Model Presentation Program |
| $z_0$ | Roughness Length |

***END OF REPORT***

# APPENDIX A: FIGURES

Figure 1
Site Location

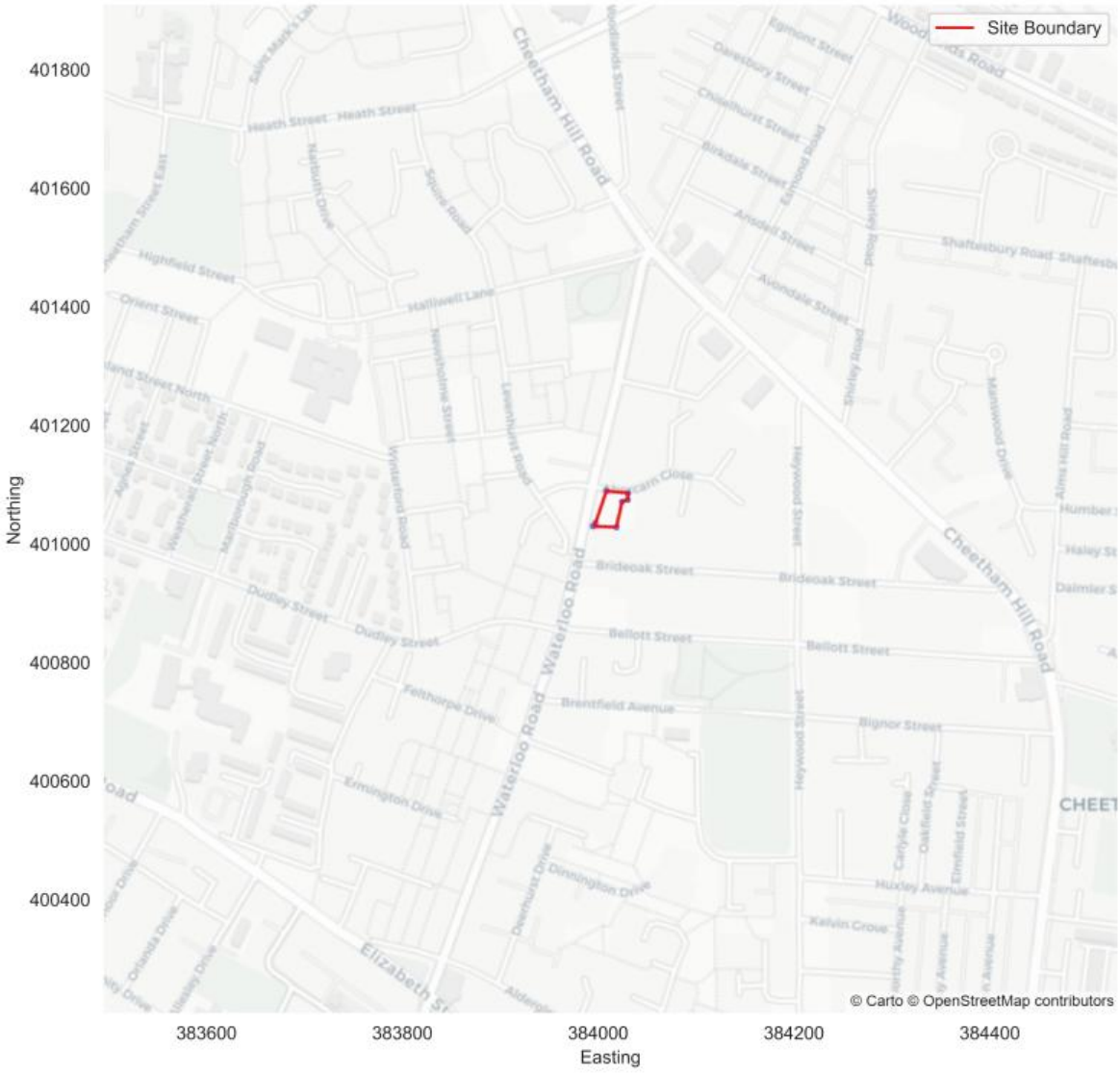
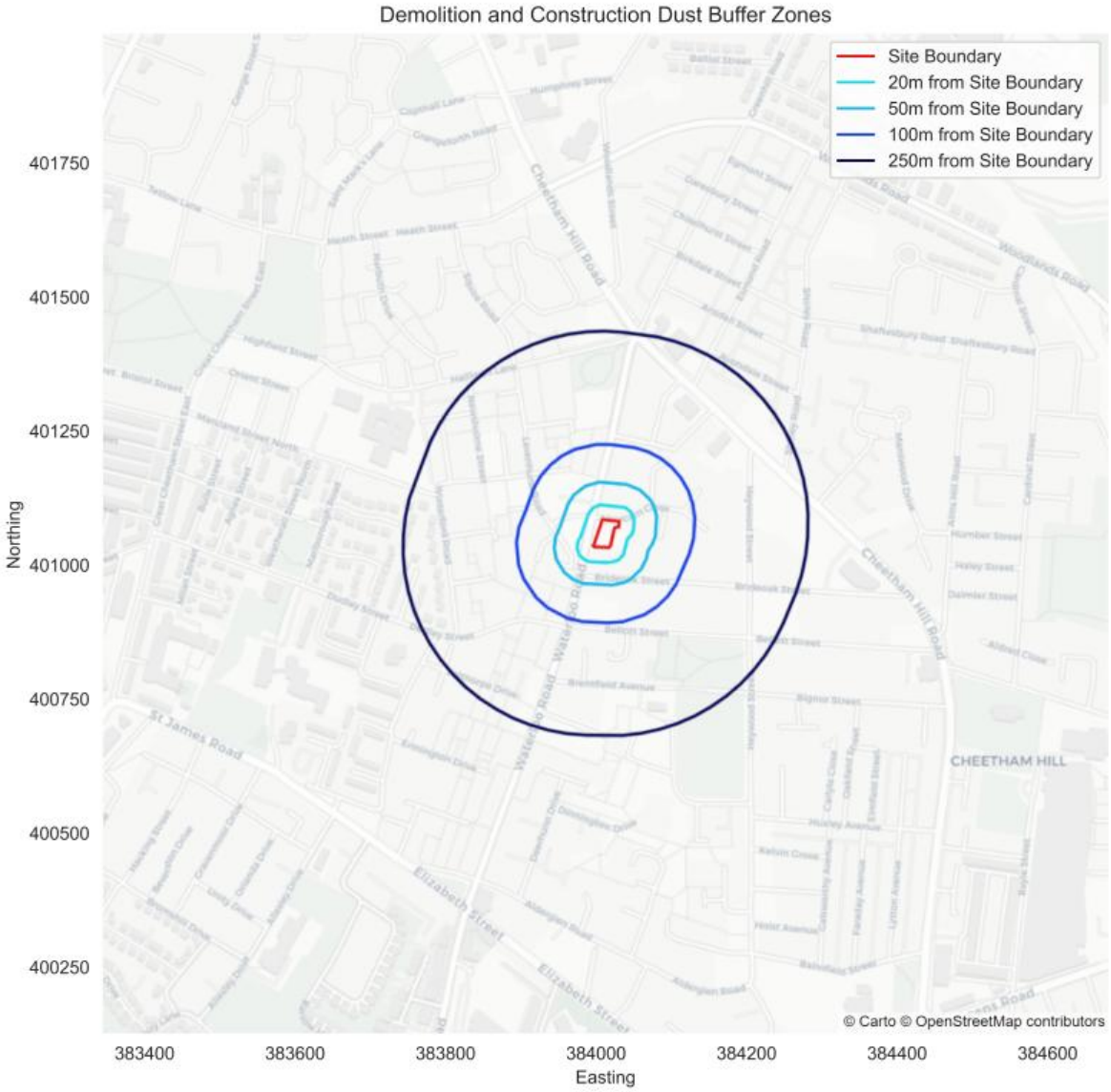
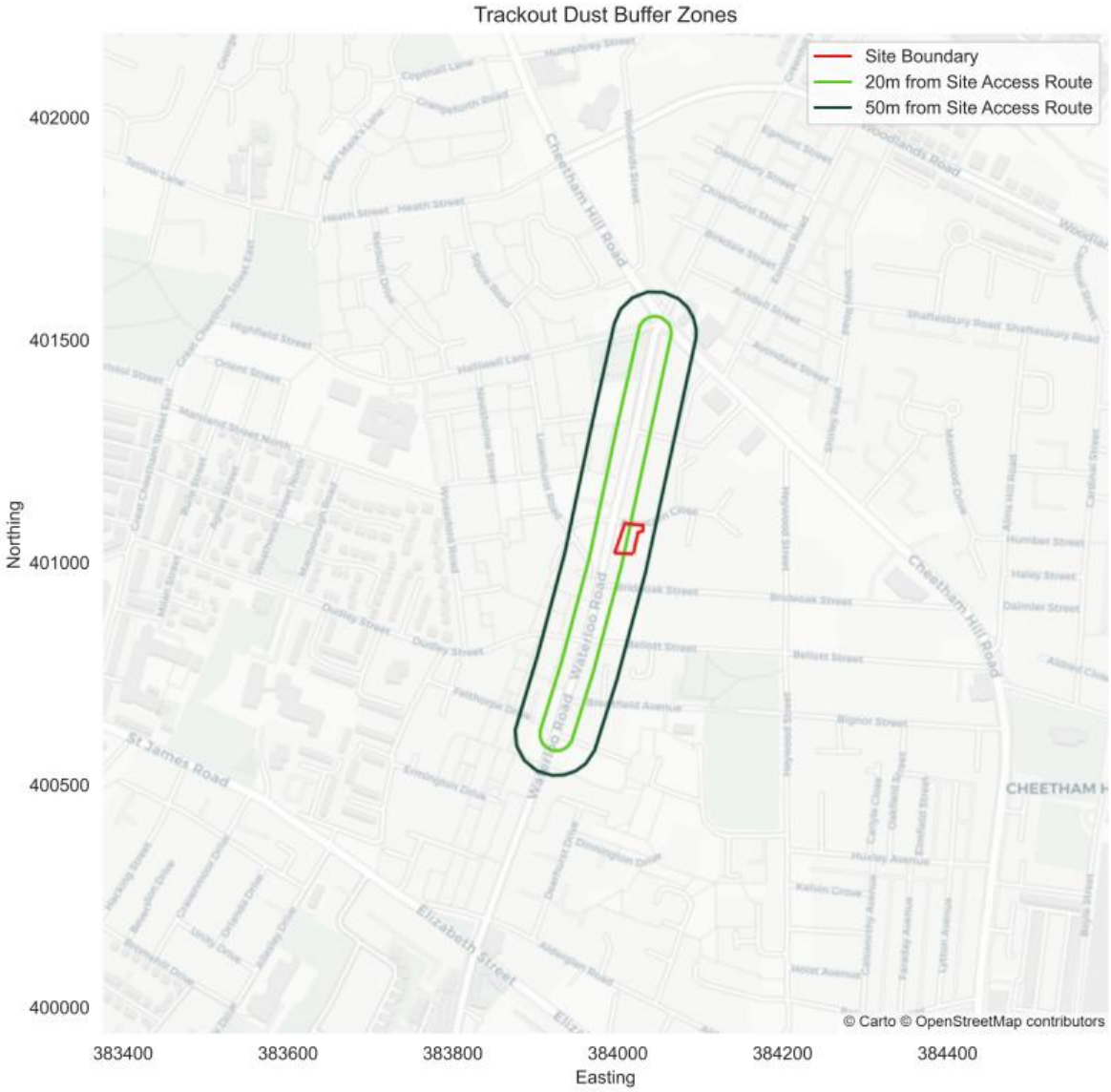


Figure 2
Monitoring Locations




Demolition and Construction Dust Buffer Zones
Site Boundary
20m from Site Boundary
50m from Site Boundary
100m from Site Boundary
250m from Site Boundary
Northing
401750
401500
401250
401000
400750
400500
400250
383400
383600
383800
384000
384200
384400
384600
Easting
CHEETHAM HILL
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Trackout Dust Buffer Zones
Site Boundary
20m from Site Access Route
50m from Site Access Route
402000
401500
401000
400500
400000
Northing
383400
383600
383800
384000
384200
384400
Easting
Cheetham Hill Road
Waterloo Road
St James Road
Elizabeth Street
© Carto © OpenStreetMap contributors

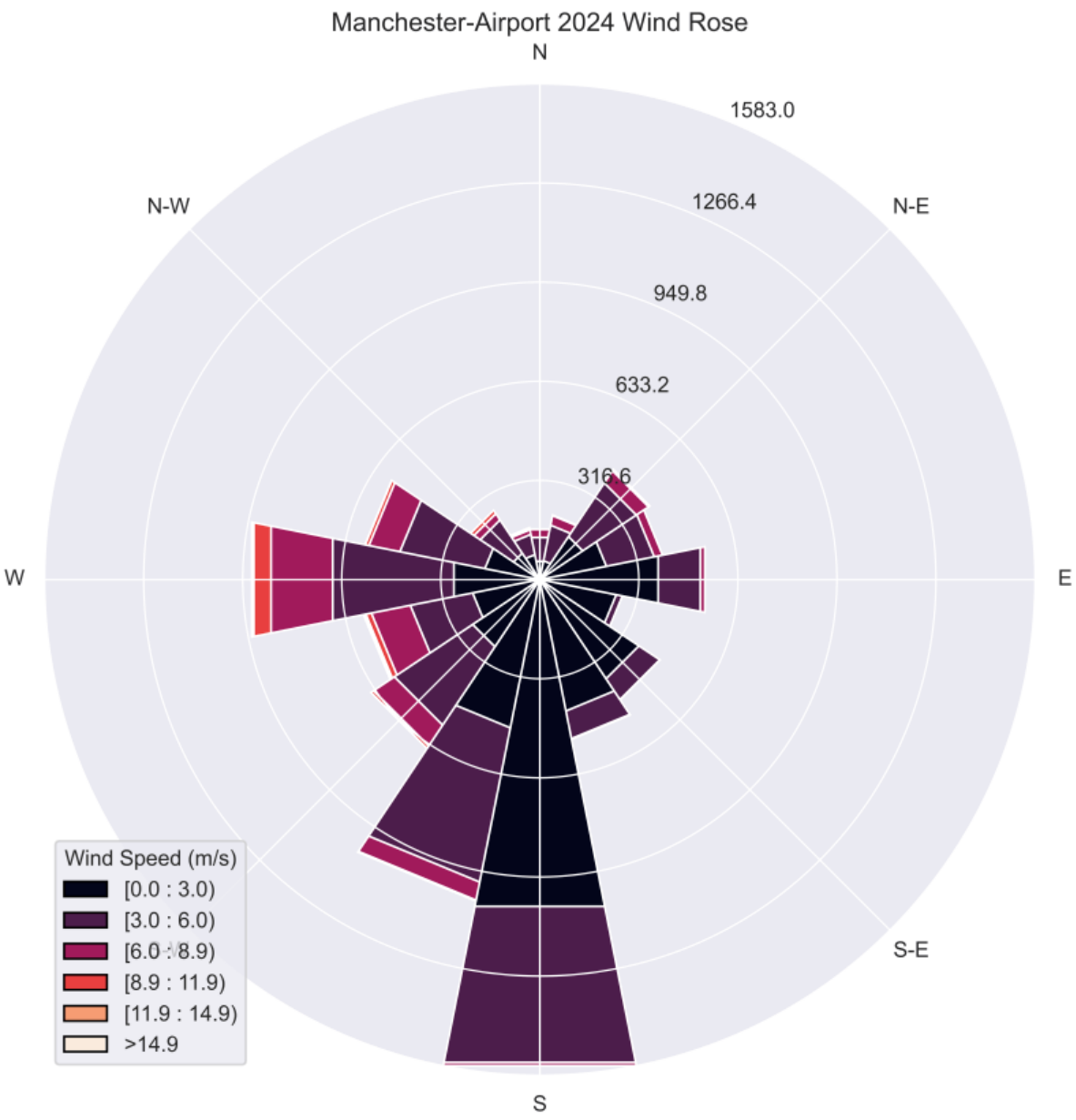
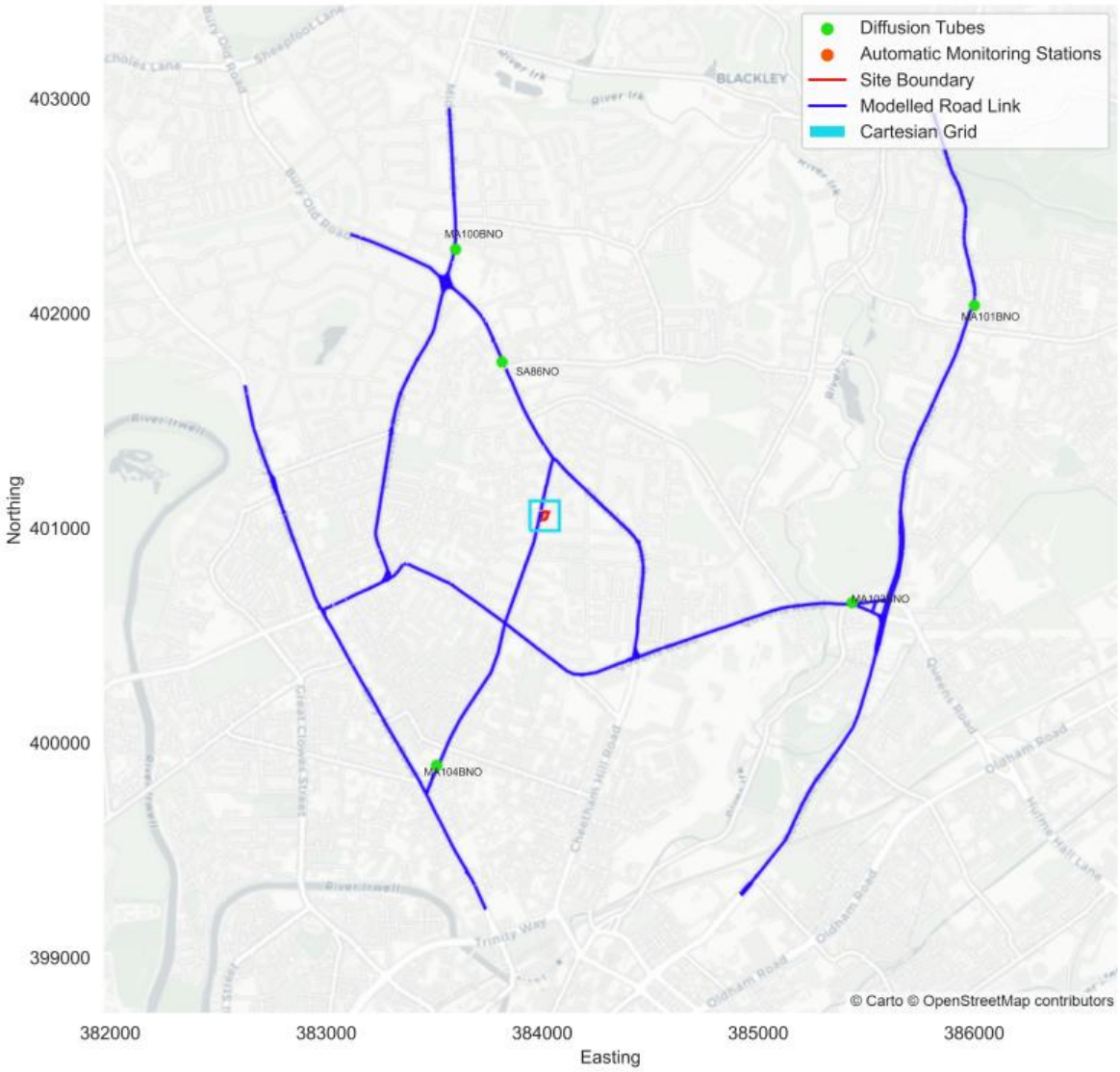
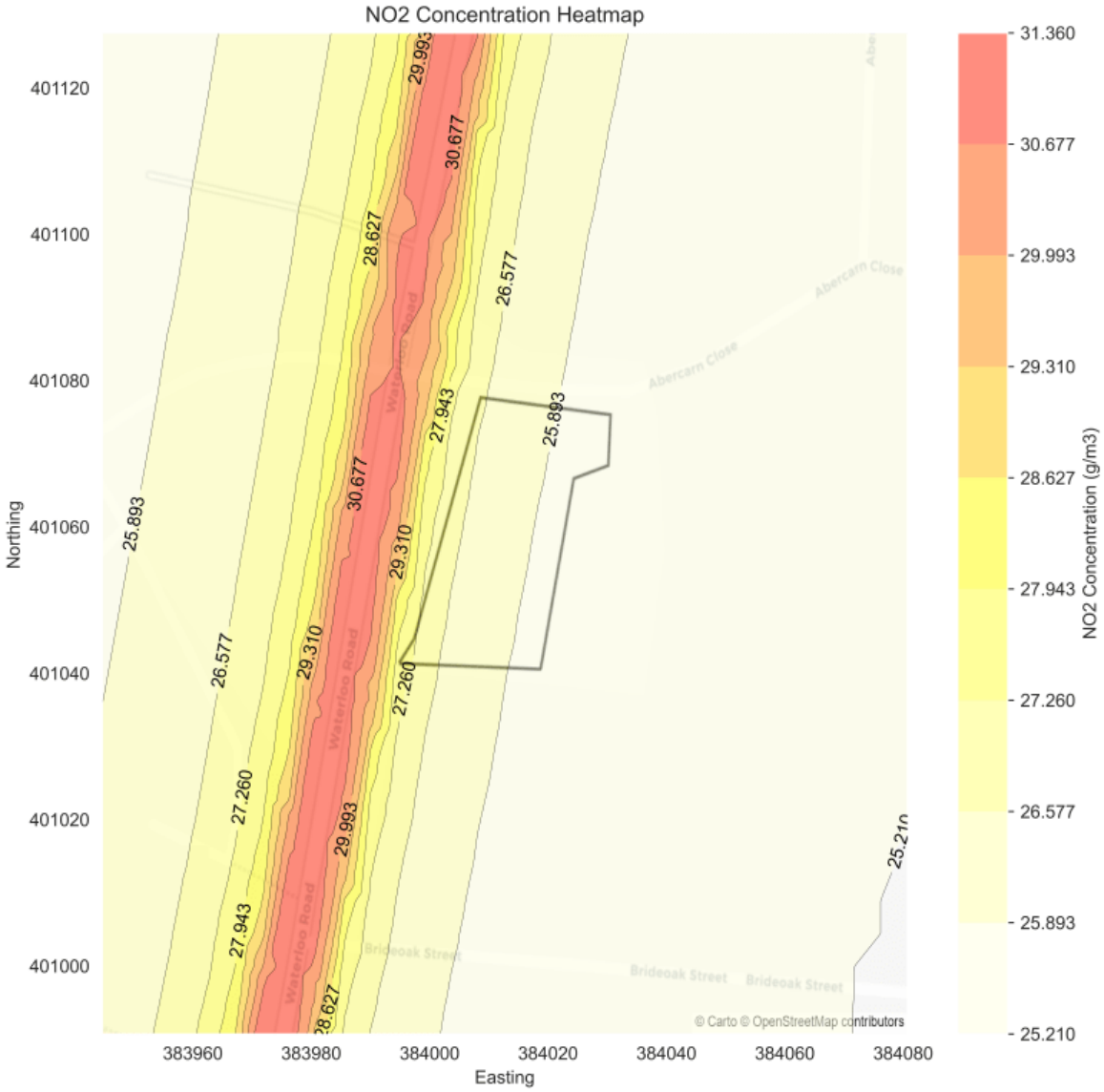
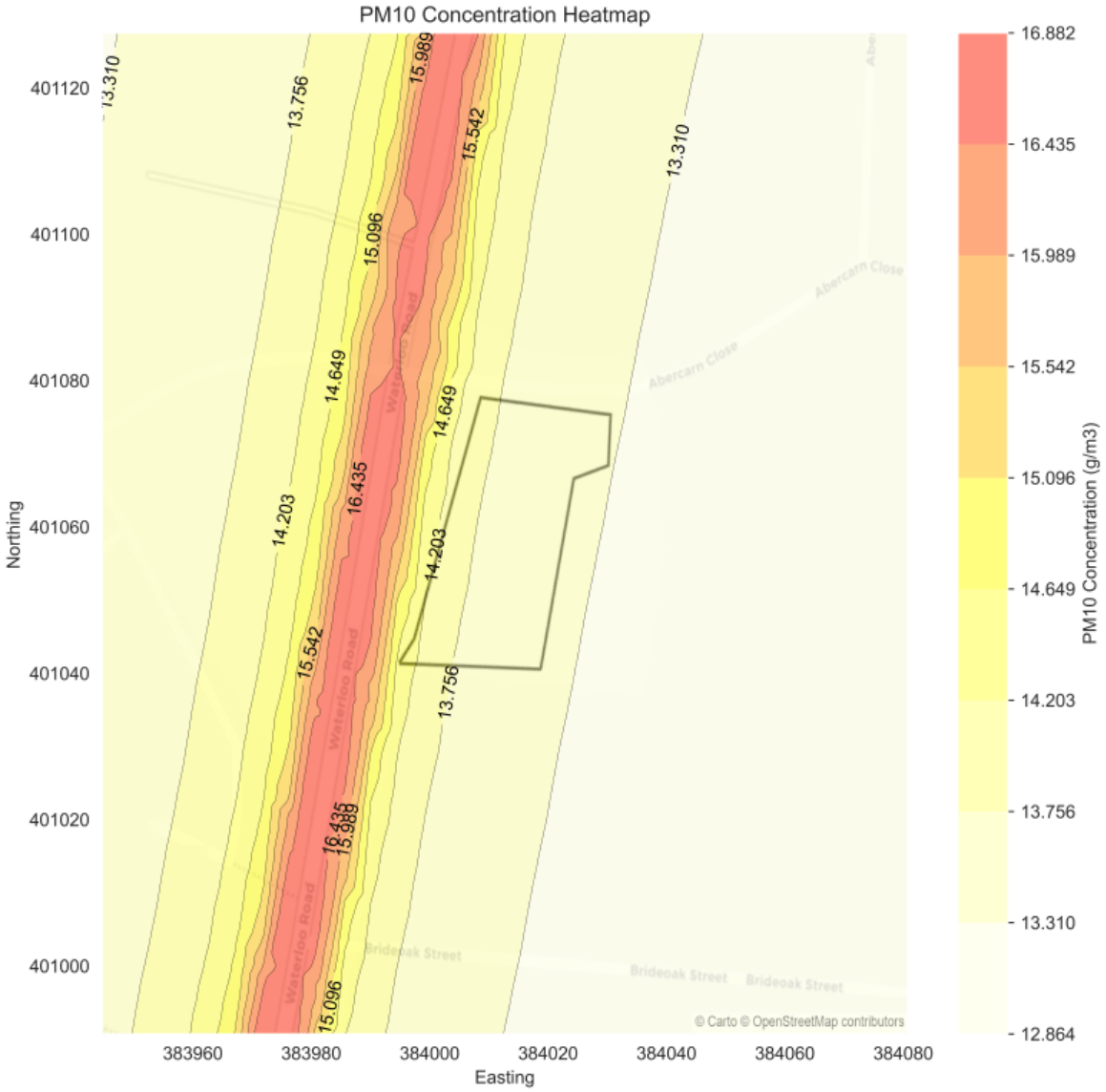
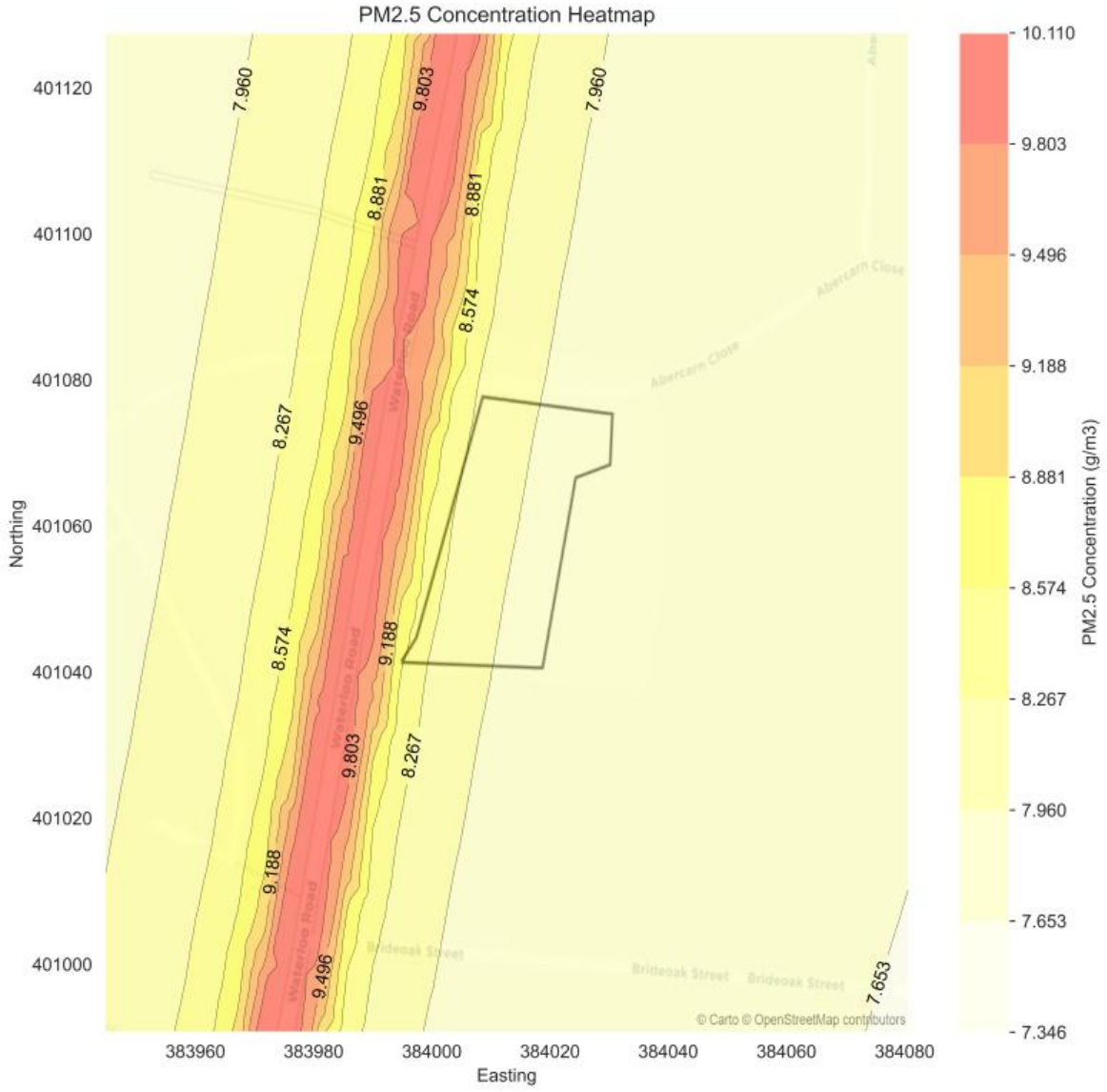

Manchester-Airport 2024 Wind Rose
N
N-E
E
S-E
S
W
N-W
1583.0
1266.4
949.8
633.2
316.6
Wind Speed (m/s)
[0.0 : 3.0)
[3.0 : 6.0)
[6.0 : 8.9)
[8.9 : 11.9)
[11.9 : 14.9)
>14.9

Figure 6
ADMS Roads Inputs




NO2 Concentration Heatmap
Northing
Easting
401120
401100
401080
401060
401040
401020
401000
383960
383980
384000
384020
384040
384060
384080
29.993
30.677
28.627
26.577
27.943
25.893
29.310
27.260
25.210
Waterloo Road
Abercarn Close
Brideoak Street
© Carto © OpenStreetMap contributors
NO2 Concentration (g/m3)
31.360
30.677
29.993
29.310
28.627
27.943
27.260
26.577
25.893
25.210


PM10 Concentration Heatmap
Northing
Easting
401120
401100
401080
401060
401040
401020
401000
383960
383980
384000
384020
384040
384060
384080
13.310
13.756
14.203
14.649
15.096
15.542
15.989
16.435
16.882
PM10 Concentration (g/m3)
Waterloo Road
Abercarn Close
Brideoak Street
© Carto © OpenStreetMap contributors


PM2.5 Concentration Heatmap
Northing
Easting
401120
401100
401080
401060
401040
401020
401000
383960
383980
384000
384020
384040
384060
384080
7.960
8.267
8.574
8.881
9.188
9.496
9.803
10.110
7.653
7.346
PM2.5 Concentration (g/m3)
© Carto © OpenStreetMap contributors

# APPENDIX B: ASSESSMENT INPUTS

The Proposed Development has the potential to introduce future site users to poor air quality. Dispersion modelling using ADMS Roads was therefore undertaken to predict pollutant concentrations across the site to consider site suitability for the proposed end-use.

The assessment was undertaken in accordance with the guidance contained within LAQM.TG(22) and the EPUK and IAQM guidance.

**Dispersion Model**

Dispersion modelling was undertaken using the ADMS-Roads dispersion model (version 5.0). ADMS-Roads is developed by Cambridge Environmental Research Consultants (CERC) and is routinely used throughout the world for the prediction of pollutant dispersion from road sources. Modelling predictions from this software package are accepted within the UK by the Environment Agency and DEFRA.

The model requires input data that details the following parameters:

- Assessment area;
- Traffic flow data;
- Vehicle emission factors;
- Spatial coordinates of emissions;
- Street width;
- Meteorological data;
- Roughness length; and
- Monin-Obukhov length.

**Assessment Area**

Ambient concentrations were predicted over the Proposed Development site and surrounding highway network. One Cartesian grid was included in the model over the area at approximately NGR: 384015, 401056 at a height of 1.5m to represent the proposed ground floor level for the 2029 opening year scenario.

Results were subsequently used to produce contour plots. Reference should be made to Figure 6 within Appendix A for a graphical representation of the verification inputs and operation phase DS extents, respectively.

**Traffic Flow Data**

Baseline traffic data for the road links were obtained from the Department for Transport (DfT). The DfT Matrix web tool enables the user to view and download traffic flows at count points in Great Britain from 1999 to present. The DfT matrix is referenced in LAQM.TG(22) as being a suitable source of data for air quality assessments and is therefore considered to provide a reasonable representation of traffic flows in the vicinity of the site.

Growth factors provided by the Trip End Model Presentation Program (TEMPRO) software package were utilised to allow for conversion from the obtained traffic flow to 2029 which was used to represent the opening year scenario. Vehicle speeds and road widths were obtained from the Ordnance Survey.

A summary of the traffic data used in the verification scenario is provided in Table B1.

**Table B1: 2024 Verification Traffic Data**

| Road Link | | Road Width (m) | 24 Hour AADT Flow | HDV Pop (%) | Mean Vehicle Speed (km/hr) |
|---|---|---|---|---|---|
| L1 | Bury New Road | 12.9 | 16217.0 | 2.7 | 40.9 |
| L2 | Bury New Road | 12.9 | 14318.0 | 2.0 | 15.2 |
| L3 | Bury New Road | 11.0 | 16093.0 | 2.6 | 39.7 |
| L4 | Bury New Road | 10.4 | 14318.0 | 2.0 | 44.2 |
| L5 | Bury New Road | 13.8 | 14318.0 | 2.0 | 26.3 |
| L6 | Bury New Road | 10.0 | 16093.0 | 2.6 | 11.4 |
| L7 | Bury New Road | 11.6 | 16217.0 | 2.7 | 12.6 |
| L8 | Bury New Road | 21.4 | 16093.0 | 2.6 | 26.7 |
| L9 | Bury New Road | 10.9 | 16217.0 | 2.7 | 46.0 |
| L10 | Bury New Road | 11.5 | 16217.0 | 2.7 | 33.6 |
| L11 | Bury New Road | 11.1 | 16093.0 | 2.6 | 40.0 |
| L12 | Bury New Road | 11.6 | 14318.0 | 2.0 | 31.6 |
| L13 | Bury New Road | 12.2 | 14318.0 | 2.0 | 39.1 |
| L14 | Bury New Road | 10.6 | 16093.0 | 2.6 | 43.0 |
| L15 | Bury New Road | 11.6 | 16217.0 | 2.7 | 20.7 |
| L16 | Bury New Road | 6.6 | 16217.0 | 2.7 | 24.8 |
| L17 | Bury New Road | 10.9 | 16217.0 | 2.7 | 31.5 |
| L18 | Bury New Road | 8.6 | 16217.0 | 2.7 | 26.0 |
| L19 | Bury New Road | 17.1 | 16093.0 | 2.6 | 37.7 |
| L20 | Bury New Road | 11.0 | 16093.0 | 2.6 | 41.0 |
| L21 | Bury New Road | 11.2 | 16093.0 | 2.6 | 41.2 |

| Road Link | | Road Width (m) | 24 Hour AADT Flow | HDV Pop (%) | Mean Vehicle Speed (km/hr) |
|---|---|---|---|---|---|
| L22 | Bury New Road | 10.9 | 16093.0 | 2.6 | 40.5 |
| L23 | Bury New Road | 11.0 | 16093.0 | 2.6 | 40.9 |
| L24 | Bury New Road | 11.2 | 16093.0 | 2.6 | 42.3 |
| L25 | Bury New Road | 11.3 | 14318.0 | 2.0 | 41.9 |
| L26 | Bury New Road | 10.8 | 14318.0 | 2.0 | 33.6 |
| L27 | Bury New Road | 29.8 | 16093.0 | 2.6 | 32.7 |
| L28 | Bury New Road | 11.9 | 16093.0 | 2.6 | 42.5 |
| L29 | Bury New Road | 16.6 | 16093.0 | 2.6 | 24.5 |
| L30 | Bury New Road | 11.6 | 14318.0 | 2.0 | 42.6 |
| L31 | Bury New Road | 11.8 | 16217.0 | 2.7 | 35.1 |
| L32 | Bury New Road | 16.1 | 14318.0 | 2.0 | 24.4 |
| L33 | Bury New Road | 11.2 | 16217.0 | 2.7 | 36.9 |
| L34 | Bury New Road | 10.5 | 14318.0 | 2.0 | 42.1 |
| L35 | Bury New Road | 7.3 | 16217.0 | 2.7 | 31.5 |
| L36 | Bury New Road | 11.2 | 16217.0 | 2.7 | 41.7 |
| L37 | Bury New Road | 11.8 | 16093.0 | 2.6 | 41.6 |
| L38 | Bury New Road | 11.4 | 16217.0 | 2.7 | 28.2 |
| L39 | Bury New Road | 10.6 | 16093.0 | 2.6 | 43.1 |
| L40 | Bury New Road | 10.4 | 14318.0 | 2.0 | 35.5 |
| L41 | Bury New Road | 10.9 | 16217.0 | 2.7 | 13.7 |
| L42 | Bury New Road | 17.5 | 14318.0 | 2.0 | 28.0 |
| L43 | Bury New Road | 29.6 | 16093.0 | 2.6 | 31.6 |
| L44 | Bury New Road | 11.1 | 16217.0 | 2.7 | 27.3 |
| L45 | Bury New Road | 11.6 | 14318.0 | 2.0 | 37.1 |
| L46 | Bury New Road | 11.3 | 14318.0 | 2.0 | 38.6 |
| L47 | Bury New Road | 11.8 | 16217.0 | 2.7 | 23.9 |
| L48 | Bury New Road | 11.3 | 16217.0 | 2.7 | 39.4 |
| L49 | Bury New Road | 18.5 | 16093.0 | 2.6 | 26.4 |
| L50 | Bury New Road | 12.7 | 14318.0 | 2.0 | 42.8 |
| L51 | Bury New Road | 15.6 | 16093.0 | 2.6 | 39.2 |
| L52 | Bury New Road | 11.4 | 16093.0 | 2.6 | 37.0 |
| L53 | Bury New Road | 13.9 | 14318.0 | 2.0 | 29.5 |
| L54 | Bury New Road | 10.8 | 16217.0 | 2.7 | 35.2 |

| Road Link | | Road Width (m) | 24 Hour AADT Flow | HDV Pop (%) | Mean Vehicle Speed (km/hr) |
|---|---|---|---|---|---|
| L55 | Bury New Road | 11.5 | 14318.0 | 2.0 | 41.6 |
| L56 | Bury New Road | 7.7 | 16217.0 | 2.7 | 44.8 |
| L57 | Bury New Road | 11.9 | 16217.0 | 2.7 | 38.6 |
| L58 | Bury New Road | 11.6 | 14318.0 | 2.0 | 43.0 |
| L59 | Bury New Road | 10.7 | 14318.0 | 2.0 | 32.7 |
| L60 | Bury New Road | 11.8 | 14318.0 | 2.0 | 43.2 |
| L61 | Bury New Road | 10.6 | 16093.0 | 2.6 | 37.3 |
| L62 | Bury New Road | 16.7 | 16093.0 | 2.6 | 26.7 |
| L63 | Bury New Road | 11.9 | 14318.0 | 2.0 | 32.6 |
| L64 | Bury New Road | 11.1 | 16217.0 | 2.7 | 35.2 |
| L65 | Bury New Road | 11.1 | 14318.0 | 2.0 | 34.4 |
| L66 | Bury New Road | 11.5 | 16093.0 | 2.6 | 40.2 |
| L67 | Bury New Road | 15.6 | 14318.0 | 2.0 | 22.0 |
| L68 | Bury New Road | 12.5 | 14318.0 | 2.0 | 31.3 |
| L69 | Bury New Road | 22.9 | 16093.0 | 2.6 | 31.8 |
| L70 | Bury New Road | 14.0 | 16093.0 | 2.6 | 6.9 |
| L71 | Bury New Road | 12.6 | 14318.0 | 2.0 | 45.1 |
| L72 | Bury New Road | 14.9 | 16217.0 | 2.7 | 20.0 |
| L73 | Bury New Road | 11.6 | 14318.0 | 2.0 | 42.0 |
| L74 | Bury New Road | 12.1 | 16217.0 | 2.7 | 36.5 |
| L75 | Bury New Road | 13.1 | 14318.0 | 2.0 | 32.2 |
| L76 | Bury New Road | 11.9 | 16217.0 | 2.7 | 42.2 |
| L77 | Bury Old Road | 14.6 | 13005.0 | 2.3 | 11.3 |
| L78 | Bury Old Road | 9.1 | 13949.0 | 3.2 | 33.2 |
| L79 | Bury Old Road | 13.0 | 14124.0 | 1.7 | 40.1 |
| L80 | Bury Old Road | 15.9 | 13949.0 | 3.2 | 19.4 |
| L81 | Bury Old Road | 12.2 | 14124.0 | 1.7 | 48.0 |
| L82 | Bury Old Road | 9.6 | 14124.0 | 1.7 | 39.7 |
| L83 | Bury Old Road | 19.0 | 13005.0 | 2.3 | 39.1 |
| L84 | Bury Old Road | 10.7 | 14124.0 | 1.7 | 38.4 |
| L85 | Bury Old Road | 9.7 | 13949.0 | 3.2 | 22.8 |
| L86 | Bury Old Road | 15.9 | 13005.0 | 2.3 | 5.0 |
| L87 | Bury Old Road | 22.2 | 13005.0 | 2.3 | 37.6 |

| Road Link | | Road Width (m) | 24 Hour AADT Flow | HDV Pop (%) | Mean Vehicle Speed (km/hr) |
|---|---|---|---|---|---|
| L88 | Bury Old Road | 12.3 | 13949.0 | 3.2 | 23.5 |
| L89 | Bury Old Road | 12.6 | 13949.0 | 3.2 | 22.1 |
| L90 | Bury Old Road | 12.3 | 13949.0 | 3.2 | 26.0 |
| L91 | Bury Old Road | 12.4 | 14124.0 | 1.7 | 42.1 |
| L92 | Bury Old Road | 10.4 | 13949.0 | 3.2 | 27.5 |
| L93 | Bury Old Road | 8.6 | 13949.0 | 3.2 | 22.8 |
| L94 | Bury Old Road | 20.4 | 13005.0 | 2.3 | 19.2 |
| L95 | Bury Old Road | 19.1 | 13005.0 | 2.3 | 5.0 |
| L96 | Bury Old Road | 9.6 | 13949.0 | 3.2 | 30.3 |
| L97 | Bury Old Road | 12.9 | 14124.0 | 1.7 | 35.9 |
| L98 | Bury Old Road | 10.0 | 14124.0 | 1.7 | 39.8 |
| L99 | Bury Old Road | 16.2 | 13005.0 | 2.3 | 20.2 |
| L100 | Bury Old Road | 15.4 | 13949.0 | 3.2 | 22.9 |
| L101 | Bury Old Road | 11.1 | 14124.0 | 1.7 | 39.1 |
| L102 | Bury Old Road | 11.7 | 14124.0 | 1.7 | 41.5 |
| L103 | Bury Old Road | 9.5 | 14124.0 | 1.7 | 38.3 |
| L104 | Bury Old Road | 20.3 | 13005.0 | 2.3 | 38.4 |
| L105 | Bury Old Road | 13.7 | 13949.0 | 3.2 | 26.7 |
| L106 | Bury Old Road | 22.0 | 13005.0 | 2.3 | 20.9 |
| L107 | Bury Old Road | 18.7 | 13005.0 | 2.3 | 35.6 |
| L108 | Bury Old Road | 12.7 | 13005.0 | 2.3 | 29.2 |
| L109 | Bury Old Road | 14.2 | 13005.0 | 2.3 | 29.3 |
| L110 | Bury Old Road | 19.5 | 13005.0 | 2.3 | 23.4 |
| L111 | Bury Old Road | 23.9 | 13005.0 | 2.3 | 24.4 |
| L112 | Bury Old Road | 11.8 | 13949.0 | 3.2 | 30.7 |
| L113 | Bury Old Road | 11.3 | 13949.0 | 3.2 | 30.1 |
| L114 | Bury Old Road | 7.7 | 14124.0 | 1.7 | 35.4 |
| L115 | Bury Old Road | 16.2 | 13005.0 | 2.3 | 34.0 |
| L116 | Bury Old Road | 10.4 | 14124.0 | 1.7 | 42.5 |
| L117 | Bury Old Road | 11.1 | 13949.0 | 3.2 | 22.7 |
| L118 | Bury Old Road | 13.2 | 13005.0 | 2.3 | 27.8 |
| L119 | Bury Old Road | 18.5 | 13005.0 | 2.3 | 6.4 |
| L120 | Bury Old Road | 8.0 | 14124.0 | 1.7 | 41.8 |

| Road Link | | Road Width (m) | 24 Hour AADT Flow | HDV Pop (%) | Mean Vehicle Speed (km/hr) |
|---|---|---|---|---|---|
| L121 | Bury Old Road | 15.6 | 13005.0 | 2.3 | 9.9 |
| L122 | Bury Old Road | 12.4 | 13949.0 | 3.2 | 20.4 |
| L123 | Bury Old Road | 18.8 | 13005.0 | 2.3 | 24.9 |
| L124 | Bury Old Road | 12.5 | 13949.0 | 3.2 | 24.9 |
| L125 | Bury Old Road | 11.9 | 13949.0 | 3.2 | 26.2 |
| L126 | Cheetham Hill Road | 11.4 | 13949.0 | 3.2 | 42.0 |
| L127 | Cheetham Hill Road | 14.2 | 18135.0 | 2.7 | 35.4 |
| L128 | Cheetham Hill Road | 19.9 | 13705.0 | 2.1 | 28.6 |
| L129 | Cheetham Hill Road | 14.5 | 13949.0 | 3.2 | 25.1 |
| L130 | Cheetham Hill Road | 12.9 | 13949.0 | 3.2 | 29.7 |
| L131 | Cheetham Hill Road | 9.1 | 13949.0 | 3.2 | 20.4 |
| L132 | Cheetham Hill Road | 15.2 | 13949.0 | 3.2 | 18.5 |
| L133 | Cheetham Hill Road | 10.5 | 13949.0 | 3.2 | 20.5 |
| L134 | Cheetham Hill Road | 14.0 | 13705.0 | 2.1 | 40.8 |
| L135 | Cheetham Hill Road | 11.9 | 13949.0 | 3.2 | 27.1 |
| L136 | Cheetham Hill Road | 15.0 | 13949.0 | 3.2 | 32.1 |
| L137 | Cheetham Hill Road | 13.7 | 13705.0 | 2.1 | 39.2 |
| L138 | Cheetham Hill Road | 14.3 | 18135.0 | 2.7 | 36.2 |
| L139 | Cheetham Hill Road | 15.9 | 13705.0 | 2.1 | 32.4 |
| L140 | Cheetham Hill Road | 14.3 | 13949.0 | 3.2 | 20.7 |
| L141 | Cheetham Hill Road | 12.2 | 13949.0 | 3.2 | 27.3 |
| L142 | Cheetham Hill Road | 21.3 | 13705.0 | 2.1 | 10.7 |
| L143 | Cheetham Hill Road | 14.4 | 13949.0 | 3.2 | 30.3 |
| L144 | Cheetham Hill Road | 14.7 | 18135.0 | 2.7 | 40.1 |
| L145 | Cheetham Hill Road | 12.2 | 13705.0 | 2.1 | 38.9 |
| L146 | Cheetham Hill Road | 14.1 | 13949.0 | 3.2 | 41.1 |
| L147 | Cheetham Hill Road | 14.3 | 13949.0 | 3.2 | 21.4 |
| L148 | Cheetham Hill Road | 14.5 | 13949.0 | 3.2 | 21.6 |
| L149 | Cheetham Hill Road | 13.5 | 13949.0 | 3.2 | 44.9 |
| L150 | Cheetham Hill Road | 14.3 | 13705.0 | 2.1 | 41.3 |
| L151 | Cheetham Hill Road | 14.5 | 13949.0 | 3.2 | 23.7 |
| L152 | Cheetham Hill Road | 21.8 | 13949.0 | 3.2 | 27.5 |
| L153 | Cheetham Hill Road | 16.0 | 13705.0 | 2.1 | 7.4 |

| Road Link | | Road Width (m) | 24 Hour AADT Flow | HDV Pop (%) | Mean Vehicle Speed (km/hr) |
|---|---|---|---|---|---|
| L154 | Cheetham Hill Road | 20.7 | 13705.0 | 2.1 | 25.6 |
| L155 | Cheetham Hill Road | 11.9 | 13949.0 | 3.2 | 42.8 |
| L156 | Cheetham Hill Road | 14.9 | 13705.0 | 2.1 | 39.3 |
| L157 | Cheetham Hill Road | 12.1 | 13949.0 | 3.2 | 38.3 |
| L158 | Cheetham Hill Road | 12.9 | 13949.0 | 3.2 | 31.5 |
| L159 | Cheetham Hill Road | 13.8 | 13949.0 | 3.2 | 30.4 |
| L160 | Cheetham Hill Road | 13.3 | 13949.0 | 3.2 | 25.9 |
| L161 | Cheetham Hill Road | 13.2 | 13949.0 | 3.2 | 25.6 |
| L162 | Cheetham Hill Road | 18.7 | 13949.0 | 3.2 | 30.4 |
| L163 | Cheetham Hill Road | 14.2 | 13705.0 | 2.1 | 37.7 |
| L164 | Cheetham Hill Road | 15.9 | 18135.0 | 2.7 | 32.3 |
| L165 | Cheetham Hill Road | 13.5 | 13949.0 | 3.2 | 42.4 |
| L166 | Cheetham Hill Road | 13.4 | 13949.0 | 3.2 | 16.9 |
| L167 | Cheetham Hill Road | 10.1 | 13949.0 | 3.2 | 25.9 |
| L168 | Cheetham Hill Road | 15.5 | 13949.0 | 3.2 | 43.6 |
| L169 | Cheetham Hill Road | 8.5 | 13949.0 | 3.2 | 20.1 |
| L170 | Cheetham Hill Road | 20.7 | 17029.0 | 2.4 | 35.9 |
| L171 | Cheetham Hill Road | 20.1 | 17029.0 | 2.4 | 10.8 |
| L172 | Cheetham Hill Road | 13.2 | 13705.0 | 2.1 | 36.9 |
| L173 | Cheetham Hill Road | 9.0 | 13949.0 | 3.2 | 33.0 |
| L174 | Cheetham Hill Road | 13.0 | 13949.0 | 3.2 | 28.5 |
| L175 | Cheetham Hill Road | 20.8 | 17029.0 | 2.4 | 8.9 |
| L176 | Cheetham Hill Road | 11.6 | 13949.0 | 3.2 | 41.4 |
| L177 | Cheetham Hill Road | 13.5 | 13705.0 | 2.1 | 40.2 |
| L178 | Cheetham Hill Road | 11.4 | 13949.0 | 3.2 | 41.2 |
| L179 | Cheetham Hill Road | 14.7 | 13949.0 | 3.2 | 42.3 |
| L180 | Cheetham Hill Road | 13.0 | 13949.0 | 3.2 | 25.6 |
| L181 | Cheetham Hill Road | 15.1 | 13949.0 | 3.2 | 20.6 |
| L182 | Cheetham Hill Road | 26.1 | 18135.0 | 2.7 | 39.4 |
| L183 | Cheetham Hill Road | 18.2 | 13949.0 | 3.2 | 24.3 |
| L184 | Cheetham Hill Road | 15.0 | 13949.0 | 3.2 | 26.0 |
| L185 | Cheetham Hill Road | 13.7 | 13949.0 | 3.2 | 24.1 |
| L186 | Cheetham Hill Road | 14.2 | 13705.0 | 2.1 | 36.9 |

| Road Link | | Road Width (m) | 24 Hour AADT Flow | HDV Pop (%) | Mean Vehicle Speed (km/hr) |
|---|---|---|---|---|---|
| L187 | Cheetham Hill Road | 16.7 | 18135.0 | 2.7 | 35.8 |
| L188 | Cheetham Hill Road | 17.5 | 13949.0 | 3.2 | 28.1 |
| L189 | Cheetham Hill Road | 10.0 | 17029.0 | 2.4 | 22.0 |
| L190 | Cheetham Hill Road | 12.4 | 13949.0 | 3.2 | 27.4 |
| L191 | Cheetham Hill Road | 12.9 | 13949.0 | 3.2 | 24.5 |
| L192 | Elizabeth Street | 7.8 | 13705.0 | 2.1 | 25.8 |
| L193 | Elizabeth Street | 9.1 | 13705.0 | 2.1 | 34.4 |
| L194 | Elizabeth Street | 8.9 | 13705.0 | 2.1 | 33.1 |
| L195 | Elizabeth Street | 7.8 | 13705.0 | 2.1 | 35.0 |
| L196 | Elizabeth Street | 8.2 | 13705.0 | 2.1 | 35.0 |
| L197 | Elizabeth Street | 8.7 | 13705.0 | 2.1 | 32.4 |
| L198 | Elizabeth Street | 10.3 | 13705.0 | 2.1 | 32.7 |
| L199 | Elizabeth Street | 9.1 | 13705.0 | 2.1 | 35.2 |
| L200 | Elizabeth Street | 7.5 | 13705.0 | 2.1 | 25.0 |
| L201 | Great Cheetham Street East | 18.1 | 19587.0 | 2.5 | 17.6 |
| L202 | Great Cheetham Street East | 15.0 | 19587.0 | 2.5 | 26.8 |
| L203 | Great Cheetham Street East | 8.5 | 13705.0 | 2.1 | 23.3 |
| L204 | Great Cheetham Street East | 14.5 | 19587.0 | 2.5 | 22.9 |
| L205 | Great Cheetham Street East | 15.8 | 19587.0 | 2.5 | 14.9 |
| L206 | Great Cheetham Street East | 15.7 | 19587.0 | 2.5 | 27.3 |
| L207 | Great Cheetham Street East | 13.0 | 19587.0 | 2.5 | 27.0 |
| L208 | Great Cheetham Street East | 10.8 | 13705.0 | 2.1 | 23.6 |
| L209 | Great Cheetham Street East | 10.3 | 19587.0 | 2.5 | 28.8 |
| L210 | Great Cheetham Street East | 14.9 | 13705.0 | 2.1 | 26.9 |
| L211 | Great Cheetham Street East | 14.6 | 16093.0 | 2.6 | 17.2 |
| L212 | Great Cheetham Street East | 8.9 | 13705.0 | 2.1 | 26.4 |
| L213 | Great Cheetham Street East | 15.0 | 19587.0 | 2.5 | 27.6 |
| L214 | Great Cheetham Street East | 11.3 | 16093.0 | 2.6 | 10.7 |
| L215 | Great Cheetham Street East | 8.5 | 13705.0 | 2.1 | 21.2 |
| L216 | Great Cheetham Street East | 13.0 | 19587.0 | 2.5 | 24.8 |
| L217 | Great Cheetham Street East | 13.3 | 19587.0 | 2.5 | 37.6 |
| L218 | Great Cheetham Street East | 13.1 | 16093.0 | 2.6 | 19.7 |
| L219 | Great Cheetham Street East | 13.8 | 16093.0 | 2.6 | 28.9 |

| Road Link | | Road Width (m) | 24 Hour AADT Flow | HDV Pop (%) | Mean Vehicle Speed (km/hr) |
|---|---|---|---|---|---|
| L220 | Great Cheetham Street East | 9.3 | 19587.0 | 2.5 | 26.4 |
| L221 | Great Cheetham Street East | 24.3 | 16093.0 | 2.6 | 29.2 |
| L222 | Great Cheetham Street East | 9.7 | 16093.0 | 2.6 | 34.1 |
| L223 | Great Cheetham Street East | 9.0 | 19587.0 | 2.5 | 37.6 |
| L224 | Great Cheetham Street East | 10.0 | 19587.0 | 2.5 | 25.1 |
| L225 | Great Cheetham Street East | 13.1 | 16093.0 | 2.6 | 24.9 |
| L226 | Great Ducie Street | 10.9 | 29541.0 | 2.5 | 28.4 |
| L227 | Great Ducie Street | 13.8 | 29541.0 | 2.5 | 32.3 |
| L228 | Great Ducie Street | 10.6 | 29541.0 | 2.5 | 29.0 |
| L229 | Great Ducie Street | 10.6 | 29541.0 | 2.5 | 36.0 |
| L230 | Great Ducie Street | 11.9 | 29541.0 | 2.5 | 31.0 |
| L231 | Great Ducie Street | 11.1 | 29541.0 | 2.5 | 29.5 |
| L232 | Great Ducie Street | 13.4 | 29541.0 | 2.5 | 31.7 |
| L233 | Great Ducie Street | 11.6 | 29541.0 | 2.5 | 30.9 |
| L234 | Great Ducie Street | 13.1 | 29541.0 | 2.5 | 29.6 |
| L235 | Inkerman Street | 6.3 | 18135.0 | 2.7 | 32.5 |
| L236 | Leicester Road | 8.7 | 13005.0 | 2.3 | 44.7 |
| L237 | Leicester Road | 15.0 | 13705.0 | 2.1 | 26.7 |
| L238 | Leicester Road | 12.3 | 13705.0 | 2.1 | 37.2 |
| L239 | Leicester Road | 15.0 | 13705.0 | 2.1 | 62.0 |
| L240 | Leicester Road | 11.4 | 13705.0 | 2.1 | 39.0 |
| L241 | Leicester Road | 7.9 | 13705.0 | 2.1 | 39.3 |
| L242 | Leicester Road | 6.4 | 13005.0 | 2.3 | 40.1 |
| L243 | Leicester Road | 8.5 | 13705.0 | 2.1 | 38.1 |
| L244 | Leicester Road | 14.4 | 13705.0 | 2.1 | 15.6 |
| L245 | Leicester Road | 10.9 | 13005.0 | 2.3 | 28.4 |
| L246 | Leicester Road | 9.3 | 13005.0 | 2.3 | 39.9 |
| L247 | Leicester Road | 10.3 | 13705.0 | 2.1 | 31.7 |
| L248 | Leicester Road | 12.5 | 13005.0 | 2.3 | 36.1 |
| L249 | Leicester Road | 9.2 | 13005.0 | 2.3 | 41.0 |
| L250 | Leicester Road | 11.2 | 13005.0 | 2.3 | 37.7 |
| L251 | Leicester Road | 11.9 | 13705.0 | 2.1 | 40.1 |
| L252 | Leicester Road | 14.3 | 13005.0 | 2.3 | 28.9 |

| Road Link | | Road Width (m) | 24 Hour AADT Flow | HDV Pop (%) | Mean Vehicle Speed (km/hr) |
|---|---|---|---|---|---|
| L253 | Leicester Road | 11.4 | 13005.0 | 2.3 | 37.8 |
| L254 | Leicester Road | 5.7 | 13005.0 | 2.3 | 37.4 |
| L255 | Leicester Road | 12.0 | 13005.0 | 2.3 | 35.4 |
| L256 | Leicester Road | 8.2 | 13005.0 | 2.3 | 41.3 |
| L257 | Leicester Road | 11.1 | 13005.0 | 2.3 | 31.6 |
| L258 | Leicester Road | 18.3 | 19587.0 | 2.5 | 35.5 |
| L259 | Leicester Road | 10.6 | 13005.0 | 2.3 | 21.5 |
| L260 | Leicester Road | 11.5 | 13005.0 | 2.3 | 27.1 |
| L261 | Leicester Road | 11.6 | 13005.0 | 2.3 | 37.2 |
| L262 | Leicester Road | 11.2 | 13705.0 | 2.1 | 33.6 |
| L263 | Leicester Road | 12.2 | 13705.0 | 2.1 | 34.1 |
| L264 | Leicester Road | 11.7 | 13705.0 | 2.1 | 34.3 |
| L265 | Leicester Road | 11.3 | 13705.0 | 2.1 | 28.1 |
| L266 | Leicester Road | 9.9 | 19587.0 | 2.5 | 31.2 |
| L267 | Leicester Road | 11.8 | 13705.0 | 2.1 | 45.2 |
| L268 | Leicester Road | 11.8 | 13005.0 | 2.3 | 48.8 |
| L269 | Leicester Road | 11.4 | 13705.0 | 2.1 | 30.5 |
| L270 | Leicester Road | 11.1 | 13705.0 | 2.1 | 41.0 |
| L271 | Leicester Road | 18.7 | 13005.0 | 2.3 | 36.7 |
| L272 | Leicester Road | 9.8 | 13005.0 | 2.3 | 35.1 |
| L273 | Leicester Road | 18.4 | 13005.0 | 2.3 | 5.1 |
| L274 | Leicester Road | 6.7 | 13005.0 | 2.3 | 41.9 |
| L275 | Leicester Road | 12.0 | 13705.0 | 2.1 | 41.8 |
| L276 | Leicester Road | 21.8 | 13005.0 | 2.3 | 36.7 |
| L277 | Leicester Road | 14.3 | 13005.0 | 2.3 | 38.8 |
| L278 | Leicester Road | 13.5 | 13705.0 | 2.1 | 23.9 |
| L279 | Leicester Road | 10.6 | 13005.0 | 2.3 | 26.6 |
| L280 | Leicester Road | 26.1 | 13005.0 | 2.3 | 16.4 |
| L281 | Leicester Road | 9.2 | 13005.0 | 2.3 | 50.2 |
| L282 | Leicester Road | 11.5 | 13005.0 | 2.3 | 36.7 |
| L283 | Leicester Road | 11.7 | 13005.0 | 2.3 | 38.3 |
| L284 | Leicester Road | 12.8 | 13005.0 | 2.3 | 36.1 |
| L285 | Leicester Road | 12.1 | 13705.0 | 2.1 | 40.6 |

| Road Link | | Road Width (m) | 24 Hour AADT Flow | HDV Pop (%) | Mean Vehicle Speed (km/hr) |
|---|---|---|---|---|---|
| L286 | Leicester Road | 9.1 | 13005.0 | 2.3 | 31.1 |
| L287 | Leicester Road | 15.6 | 13705.0 | 2.1 | 34.0 |
| L288 | Leicester Road | 8.1 | 13005.0 | 2.3 | 46.0 |
| L289 | Leicester Road | 12.5 | 13705.0 | 2.1 | 37.7 |
| L290 | Leicester Road | 11.8 | 13005.0 | 2.3 | 48.1 |
| L291 | Leicester Road | 11.1 | 13705.0 | 2.1 | 39.9 |
| L292 | Leicester Road | 10.9 | 13005.0 | 2.3 | 36.9 |
| L293 | Leicester Road | 8.0 | 13005.0 | 2.3 | 41.1 |
| L294 | Leicester Road | 11.4 | 13705.0 | 2.1 | 41.1 |
| L295 | Leicester Road | 13.9 | 13705.0 | 2.1 | 39.4 |
| L296 | Leicester Road | 11.1 | 13705.0 | 2.1 | 41.7 |
| L297 | Leicester Road | 6.1 | 13005.0 | 2.3 | 45.4 |
| L298 | Leicester Road | 9.4 | 13005.0 | 2.3 | 25.1 |
| L299 | Leicester Road | 11.9 | 13705.0 | 2.1 | 28.5 |
| L300 | Leicester Road | 18.3 | 13705.0 | 2.1 | 5.2 |
| L301 | Leicester Road | 11.6 | 13705.0 | 2.1 | 40.3 |
| L302 | Marlborough Road | 10.4 | 13705.0 | 2.1 | 42.5 |
| L303 | Marlborough Road | 7.8 | 13705.0 | 2.1 | 34.4 |
| L304 | Marlborough Road | 10.9 | 13705.0 | 2.1 | 38.4 |
| L305 | Marlborough Road | 10.2 | 13705.0 | 2.1 | 35.6 |
| L306 | Middleton Road | 10.4 | 22994.0 | 2.1 | 38.5 |
| L307 | Middleton Road | 14.4 | 14124.0 | 1.7 | 23.3 |
| L308 | Middleton Road | 9.8 | 22994.0 | 2.1 | 35.7 |
| L309 | Middleton Road | 19.9 | 13005.0 | 2.3 | 23.2 |
| L310 | Middleton Road | 9.7 | 22994.0 | 2.1 | 39.1 |
| L311 | Middleton Road | 12.1 | 14124.0 | 1.7 | 35.9 |
| L312 | Middleton Road | 10.2 | 14124.0 | 1.7 | 27.1 |
| L313 | Middleton Road | 11.9 | 14124.0 | 1.7 | 25.9 |
| L314 | Middleton Road | 12.9 | 22994.0 | 2.1 | 36.6 |
| L315 | Middleton Road | 16.3 | 13005.0 | 2.3 | 29.8 |
| L316 | Middleton Road | 10.3 | 22994.0 | 2.1 | 37.9 |
| L317 | Middleton Road | 9.0 | 13005.0 | 2.3 | 40.0 |
| L318 | Middleton Road | 14.7 | 13005.0 | 2.3 | 31.0 |

| Road Link | | Road Width (m) | 24 Hour AADT Flow | HDV Pop (%) | Mean Vehicle Speed (km/hr) |
|---|---|---|---|---|---|
| L319 | Middleton Road | 9.7 | 22994.0 | 2.1 | 39.0 |
| L320 | Middleton Road | 17.9 | 13005.0 | 2.3 | 19.7 |
| L321 | Middleton Road | 11.0 | 14124.0 | 1.7 | 34.0 |
| L322 | Middleton Road | 9.5 | 22994.0 | 2.1 | 38.6 |
| L323 | Middleton Road | 10.9 | 22994.0 | 2.1 | 38.9 |
| L324 | Middleton Road | 17.0 | 13005.0 | 2.3 | 7.4 |
| L325 | Middleton Road | 12.5 | 14124.0 | 1.7 | 30.7 |
| L326 | Middleton Road | 17.2 | 13005.0 | 2.3 | 6.4 |
| L327 | Middleton Road | 19.8 | 13005.0 | 2.3 | 31.9 |
| L328 | Middleton Road | 16.9 | 13005.0 | 2.3 | 24.8 |
| L329 | Middleton Road | 12.5 | 14124.0 | 1.7 | 34.9 |
| L330 | Middleton Road | 14.8 | 13005.0 | 2.3 | 32.1 |
| L331 | Middleton Road | 10.3 | 22994.0 | 2.1 | 35.9 |
| L332 | Middleton Road | 21.4 | 13005.0 | 2.3 | 26.8 |
| L333 | Middleton Road | 10.6 | 14124.0 | 1.7 | 38.2 |
| L334 | Middleton Road | 9.5 | 14124.0 | 1.7 | 36.0 |
| L335 | Middleton Road | 10.3 | 22994.0 | 2.1 | 37.7 |
| L336 | Middleton Road | 10.5 | 22994.0 | 2.1 | 44.8 |
| L337 | Queens Road | 12.5 | 18135.0 | 2.7 | 32.1 |
| L338 | Queens Road | 16.3 | 17029.0 | 2.4 | 19.6 |
| L339 | Queens Road | 9.9 | 13705.0 | 2.1 | 26.0 |
| L340 | Queens Road | 11.0 | 18135.0 | 2.7 | 40.7 |
| L341 | Queens Road | 26.7 | 17029.0 | 2.4 | 30.0 |
| L342 | Queens Road | 14.0 | 18135.0 | 2.7 | 38.8 |
| L343 | Queens Road | 15.5 | 18135.0 | 2.7 | 27.7 |
| L344 | Queens Road | 13.9 | 17029.0 | 2.4 | 31.4 |
| L345 | Queens Road | 9.3 | 18135.0 | 2.7 | 36.9 |
| L346 | Queens Road | 11.3 | 18135.0 | 2.7 | 41.4 |
| L347 | Queens Road | 17.5 | 17029.0 | 2.4 | 28.5 |
| L348 | Queens Road | 9.4 | 18135.0 | 2.7 | 35.9 |
| L349 | Queens Road | 14.2 | 13705.0 | 2.1 | 39.3 |
| L350 | Queens Road | 9.8 | 18135.0 | 2.7 | 36.7 |
| L351 | Queens Road | 17.9 | 17029.0 | 2.4 | 17.8 |

| Road Link | | Road Width (m) | 24 Hour AADT Flow | HDV Pop (%) | Mean Vehicle Speed (km/hr) |
|---|---|---|---|---|---|
| L352 | Queens Road | 14.4 | 18135.0 | 2.7 | 24.2 |
| L353 | Queens Road | 14.0 | 17029.0 | 2.4 | 8.5 |
| L354 | Queens Road | 10.7 | 18135.0 | 2.7 | 39.4 |
| L355 | Queens Road | 8.6 | 18135.0 | 2.7 | 40.4 |
| L356 | Queens Road | 10.9 | 18135.0 | 2.7 | 38.3 |
| L357 | Queens Road | 19.5 | 17029.0 | 2.4 | 5.0 |
| L358 | Queens Road | 9.5 | 18135.0 | 2.7 | 34.7 |
| L359 | Queens Road | 9.2 | 18135.0 | 2.7 | 38.7 |
| L360 | Queens Road | 8.7 | 18135.0 | 2.7 | 39.5 |
| L361 | Queens Road | 7.7 | 13705.0 | 2.1 | 39.2 |
| L362 | Queens Road | 10.9 | 18135.0 | 2.7 | 29.2 |
| L363 | Queens Road | 13.3 | 18135.0 | 2.7 | 42.5 |
| L364 | Queens Road | 9.3 | 18135.0 | 2.7 | 40.1 |
| L365 | Queens Road | 7.9 | 13705.0 | 2.1 | 43.3 |
| L366 | Queens Road | 19.9 | 17029.0 | 2.4 | 38.6 |
| L367 | Queens Road | 12.1 | 13705.0 | 2.1 | 41.4 |
| L368 | Queens Road | 11.0 | 18135.0 | 2.7 | 42.0 |
| L369 | Queens Road | 10.2 | 18135.0 | 2.7 | 5.8 |
| L370 | Queens Road | 9.1 | 18135.0 | 2.7 | 39.5 |
| L371 | Queens Road | 9.1 | 18135.0 | 2.7 | 7.2 |
| L372 | Queens Road | 12.8 | 13705.0 | 2.1 | 39.9 |
| L373 | Queens Road | 16.4 | 16260.0 | 3.1 | 27.5 |
| L374 | Queens Road | 7.6 | 13705.0 | 2.1 | 44.6 |
| L375 | Queens Road | 16.7 | 18135.0 | 2.7 | 36.1 |
| L376 | Queens Road | 10.9 | 13705.0 | 2.1 | 5.0 |
| L377 | Queens Road | 10.9 | 18135.0 | 2.7 | 38.3 |
| L378 | Queens Road | 10.1 | 18135.0 | 2.7 | 19.2 |
| L379 | Queens Road | 9.9 | 18135.0 | 2.7 | 12.4 |
| L380 | Queens Road | 10.3 | 18135.0 | 2.7 | 39.7 |
| L381 | Queens Road | 9.4 | 13705.0 | 2.1 | 41.1 |
| L382 | Queens Road | 10.0 | 18135.0 | 2.7 | 30.0 |
| L383 | Queens Road | 11.1 | 18135.0 | 2.7 | 38.1 |
| L384 | Queens Road | 10.7 | 18135.0 | 2.7 | 39.7 |

| Road Link | | Road Width (m) | 24 Hour AADT Flow | HDV Pop (%) | Mean Vehicle Speed (km/hr) |
|---|---|---|---|---|---|
| L385 | Queens Road | 13.7 | 18135.0 | 2.7 | 34.7 |
| L386 | Queens Road | 15.5 | 16260.0 | 3.1 | 19.9 |
| L387 | Queens Road | 12.3 | 18135.0 | 2.7 | 37.3 |
| L388 | Queens Road | 9.8 | 18135.0 | 2.7 | 38.3 |
| L389 | Queens Road | 10.9 | 18135.0 | 2.7 | 35.1 |
| L390 | Queens Road | 14.2 | 17029.0 | 2.4 | 19.6 |
| L391 | Queens Road | 11.5 | 18135.0 | 2.7 | 39.4 |
| L392 | Queens Road | 11.3 | 18135.0 | 2.7 | 37.5 |
| L393 | Queens Road | 9.1 | 18135.0 | 2.7 | 41.2 |
| L394 | Queens Road | 7.2 | 13705.0 | 2.1 | 36.6 |
| L395 | Queens Road | 9.8 | 18135.0 | 2.7 | 37.3 |
| L396 | Queens Road | 15.5 | 17029.0 | 2.4 | 33.4 |
| L397 | Queens Road | 13.3 | 18135.0 | 2.7 | 40.4 |
| L398 | Queens Road | 13.8 | 17029.0 | 2.4 | 34.1 |
| L399 | Queens Road | 9.7 | 17029.0 | 2.4 | 36.1 |
| L400 | Rochdale Road | 11.5 | 19100.0 | 4.6 | 43.9 |
| L401 | Rochdale Road | 13.1 | 19100.0 | 4.6 | 30.5 |
| L402 | Rochdale Road | 9.0 | 18135.0 | 2.7 | 22.2 |
| L403 | Rochdale Road | 12.1 | 18135.0 | 2.7 | 34.3 |
| L404 | Rochdale Road | 10.6 | 18135.0 | 2.7 | 19.2 |
| L405 | Rochdale Road | 16.3 | 19100.0 | 4.6 | 20.0 |
| L406 | Rochdale Road | 14.4 | 18135.0 | 2.7 | 31.9 |
| L407 | Rochdale Road | 12.1 | 19100.0 | 4.6 | 32.3 |
| L408 | Rochdale Road | 10.1 | 19100.0 | 4.6 | 34.0 |
| L409 | Rochdale Road | 10.6 | 18135.0 | 2.7 | 42.0 |
| L410 | Rochdale Road | 11.0 | 18135.0 | 2.7 | 31.8 |
| L411 | Rochdale Road | 13.8 | 16260.0 | 3.1 | 32.3 |
| L412 | Rochdale Road | 14.5 | 19100.0 | 4.6 | 31.3 |
| L413 | Rochdale Road | 10.6 | 19100.0 | 4.6 | 36.0 |
| L414 | Rochdale Road | 10.0 | 19100.0 | 4.6 | 35.1 |
| L415 | Rochdale Road | 13.1 | 19100.0 | 4.6 | 32.5 |
| L416 | Rochdale Road | 11.8 | 16260.0 | 3.1 | 32.8 |
| L417 | Rochdale Road | 21.0 | 16260.0 | 3.1 | 26.6 |

| Road Link | | Road Width (m) | 24 Hour AADT Flow | HDV Pop (%) | Mean Vehicle Speed (km/hr) |
|---|---|---|---|---|---|
| L418 | Rochdale Road | 10.8 | 16260.0 | 3.1 | 20.5 |
| L419 | Rochdale Road | 10.7 | 16260.0 | 3.1 | 18.5 |
| L420 | Rochdale Road | 10.8 | 17053.0 | 6.6 | 45.9 |
| L421 | Rochdale Road | 11.8 | 18135.0 | 2.7 | 33.3 |
| L422 | Rochdale Road | 12.1 | 13997.0 | 8.1 | 39.1 |
| L423 | Rochdale Road | 10.7 | 18135.0 | 2.7 | 32.4 |
| L424 | Rochdale Road | 13.0 | 13997.0 | 8.1 | 31.7 |
| L425 | Rochdale Road | 11.5 | 19100.0 | 4.6 | 30.1 |
| L426 | Rochdale Road | 11.0 | 17053.0 | 6.6 | 44.4 |
| L427 | Rochdale Road | 11.2 | 17053.0 | 6.6 | 44.5 |
| L428 | Rochdale Road | 10.4 | 19100.0 | 4.6 | 20.3 |
| L429 | Rochdale Road | 10.7 | 19100.0 | 4.6 | 35.9 |
| L430 | Rochdale Road | 9.6 | 19100.0 | 4.6 | 34.4 |
| L431 | Rochdale Road | 10.4 | 18135.0 | 2.7 | 30.8 |
| L432 | Rochdale Road | 10.4 | 19100.0 | 4.6 | 34.9 |
| L433 | Rochdale Road | 10.5 | 19100.0 | 4.6 | 23.2 |
| L434 | Rochdale Road | 18.7 | 17053.0 | 6.6 | 43.5 |
| L435 | Rochdale Road | 10.9 | 17053.0 | 6.6 | 40.2 |
| L436 | Rochdale Road | 12.4 | 19100.0 | 4.6 | 38.9 |
| L437 | Rochdale Road | 6.2 | 13997.0 | 8.1 | 16.2 |
| L438 | Rochdale Road | 6.6 | 13997.0 | 8.1 | 42.0 |
| L439 | Rochdale Road | 10.5 | 19100.0 | 4.6 | 40.4 |
| L440 | Rochdale Road | 17.7 | 16260.0 | 3.1 | 30.2 |
| L441 | Rochdale Road | 12.0 | 19100.0 | 4.6 | 35.0 |
| L442 | Rochdale Road | 29.3 | 16260.0 | 3.1 | 32.7 |
| L443 | Rochdale Road | 22.0 | 16260.0 | 3.1 | 31.9 |
| L444 | Rochdale Road | 12.3 | 18135.0 | 2.7 | 30.9 |
| L445 | Rochdale Road | 11.0 | 18135.0 | 2.7 | 32.2 |
| L446 | Rochdale Road | 18.1 | 16260.0 | 3.1 | 26.8 |
| L447 | Rochdale Road | 9.4 | 19100.0 | 4.6 | 32.0 |
| L448 | Rochdale Road | 10.9 | 17053.0 | 6.6 | 46.6 |
| L449 | Rochdale Road | 12.7 | 17053.0 | 6.6 | 44.0 |
| L450 | Rochdale Road | 8.2 | 19100.0 | 4.6 | 41.1 |

| Road Link | | Road Width (m) | 24 Hour AADT Flow | HDV Pop (%) | Mean Vehicle Speed (km/hr) |
|---|---|---|---|---|---|
| L451 | Rochdale Road | 11.9 | 17053.0 | 6.6 | 42.8 |
| L452 | Rochdale Road | 11.6 | 17053.0 | 6.6 | 43.5 |
| L453 | Rochdale Road | 11.1 | 17053.0 | 6.6 | 37.6 |
| L454 | Rochdale Road | 10.3 | 19100.0 | 4.6 | 24.9 |
| L455 | Rochdale Road | 7.3 | 19100.0 | 4.6 | 23.8 |
| L456 | Rochdale Road | 24.3 | 18135.0 | 2.7 | 30.0 |
| L457 | Rochdale Road | 16.6 | 16260.0 | 3.1 | 22.1 |
| L458 | Rochdale Road | 9.0 | 19100.0 | 4.6 | 39.0 |
| L459 | Rochdale Road | 12.5 | 13997.0 | 8.1 | 16.9 |
| L460 | Rochdale Road | 10.9 | 18135.0 | 2.7 | 28.9 |
| L461 | Rochdale Road | 9.0 | 19100.0 | 4.6 | 39.3 |
| L462 | Rochdale Road | 10.4 | 18135.0 | 2.7 | 39.1 |
| L463 | Rochdale Road | 11.2 | 17053.0 | 6.6 | 46.4 |
| L464 | Rochdale Road | 14.1 | 17053.0 | 6.6 | 42.6 |
| L465 | Rochdale Road | 17.1 | 13997.0 | 8.1 | 34.0 |
| L466 | Rochdale Road | 10.5 | 13997.0 | 8.1 | 33.9 |
| L467 | Rochdale Road | 11.2 | 18135.0 | 2.7 | 31.8 |
| L468 | Rochdale Road | 14.5 | 18135.0 | 2.7 | 27.5 |
| L469 | Rochdale Road | 11.2 | 19100.0 | 4.6 | 30.0 |
| L470 | Rochdale Road | 9.7 | 18135.0 | 2.7 | 35.3 |
| L471 | Rochdale Road | 10.7 | 17053.0 | 6.6 | 44.8 |
| L472 | Rochdale Road | 11.1 | 18135.0 | 2.7 | 34.6 |
| L473 | Rochdale Road | 10.6 | 18135.0 | 2.7 | 29.5 |
| L474 | Rochdale Road | 7.4 | 19100.0 | 4.6 | 31.7 |
| L475 | Rochdale Road | 10.9 | 18135.0 | 2.7 | 33.8 |
| L476 | Rochdale Road | 11.8 | 18135.0 | 2.7 | 27.4 |
| L477 | Rochdale Road | 10.6 | 18135.0 | 2.7 | 30.4 |
| L478 | Rochdale Road | 25.8 | 16260.0 | 3.1 | 42.1 |
| L479 | Rochdale Road | 10.0 | 19100.0 | 4.6 | 38.6 |
| L480 | Rochdale Road | 10.4 | 16260.0 | 3.1 | 20.0 |
| L481 | Rochdale Road | 14.4 | 19100.0 | 4.6 | 19.3 |
| L482 | Rochdale Road | 11.4 | 17053.0 | 6.6 | 38.4 |
| L483 | Rochdale Road | 12.5 | 16260.0 | 3.1 | 44.9 |

| Road Link | | Road Width (m) | 24 Hour AADT Flow | HDV Pop (%) | Mean Vehicle Speed (km/hr) |
|---|---|---|---|---|---|
| L484 | Rochdale Road | 8.2 | 19100.0 | 4.6 | 37.9 |
| L485 | Rochdale Road | 10.7 | 19100.0 | 4.6 | 34.8 |
| L486 | Rochdale Road | 10.3 | 19100.0 | 4.6 | 25.3 |
| L487 | Rochdale Road | 9.8 | 19100.0 | 4.6 | 36.7 |
| L488 | Rochdale Road | 10.8 | 16260.0 | 3.1 | 14.4 |
| L489 | Rochdale Road | 10.7 | 18135.0 | 2.7 | 31.0 |
| L490 | Rochdale Road | 9.3 | 19100.0 | 4.6 | 29.8 |
| L491 | Rochdale Road | 11.7 | 19100.0 | 4.6 | 20.8 |
| L492 | Rochdale Road | 10.6 | 19100.0 | 4.6 | 31.2 |
| L493 | Rochdale Road | 13.0 | 17053.0 | 6.6 | 43.5 |
| L494 | Rochdale Road | 21.6 | 17053.0 | 6.6 | 32.7 |
| L495 | Rochdale Road | 12.9 | 17053.0 | 6.6 | 43.8 |
| L496 | Rochdale Road | 14.7 | 16260.0 | 3.1 | 7.3 |
| L497 | Rochdale Road | 12.9 | 17053.0 | 6.6 | 43.8 |
| L498 | Rochdale Road | 10.9 | 17053.0 | 6.6 | 42.5 |
| L499 | Rochdale Road | 10.1 | 19100.0 | 4.6 | 40.5 |
| L500 | Rochdale Road | 12.8 | 19100.0 | 4.6 | 28.3 |
| L501 | Rochdale Road | 10.3 | 19100.0 | 4.6 | 33.0 |
| L502 | Rochdale Road | 12.9 | 19100.0 | 4.6 | 29.9 |
| L503 | Rochdale Road | 10.9 | 18135.0 | 2.7 | 33.8 |
| L504 | Rochdale Road | 14.3 | 17053.0 | 6.6 | 58.8 |
| L505 | Rochdale Road | 10.3 | 19100.0 | 4.6 | 36.3 |
| L506 | Rochdale Road | 11.7 | 18135.0 | 2.7 | 27.2 |
| L507 | Rochdale Road | 9.2 | 18135.0 | 2.7 | 36.1 |
| L508 | Rochdale Road | 13.2 | 19100.0 | 4.6 | 23.9 |
| L509 | Rochdale Road | 10.6 | 19100.0 | 4.6 | 28.5 |
| L510 | Rochdale Road | 12.1 | 13997.0 | 8.1 | 36.9 |
| L511 | Rochdale Road | 10.4 | 18135.0 | 2.7 | 39.6 |
| L512 | Rochdale Road | 10.2 | 19100.0 | 4.6 | 37.6 |
| L513 | Rochdale Road | 13.6 | 17053.0 | 6.6 | 47.0 |
| L514 | Rochdale Road | 10.5 | 19100.0 | 4.6 | 35.7 |
| L515 | Rochdale Road | 12.2 | 18135.0 | 2.7 | 36.2 |
| L516 | Rochdale Road | 15.3 | 18135.0 | 2.7 | 40.7 |

| Road Link | | Road Width (m) | 24 Hour AADT Flow | HDV Pop (%) | Mean Vehicle Speed (km/hr) |
|---|---|---|---|---|---|
| L517 | Rochdale Road | 11.1 | 19100.0 | 4.6 | 36.9 |
| L518 | Rochdale Road | 11.4 | 17053.0 | 6.6 | 45.2 |
| L519 | Rochdale Road | 9.8 | 19100.0 | 4.6 | 29.6 |
| L520 | Rochdale Road | 6.6 | 13997.0 | 8.1 | 40.8 |
| L521 | Rochdale Road | 14.1 | 17053.0 | 6.6 | 43.0 |
| L522 | St James Road | 8.0 | 13705.0 | 2.1 | 31.6 |
| L523 | St James Road | 10.6 | 13705.0 | 2.1 | 21.9 |
| L524 | St James Road | 11.9 | 13705.0 | 2.1 | 28.5 |
| L525 | St James Road | 9.1 | 13705.0 | 2.1 | 27.3 |
| L526 | St James's Road | 12.7 | 13705.0 | 2.1 | 40.6 |
| L527 | St James's Road | 8.3 | 13705.0 | 2.1 | 38.7 |
| L528 | St James's Road | 8.5 | 13705.0 | 2.1 | 40.4 |
| L529 | St James's Road | 8.5 | 13705.0 | 2.1 | 39.9 |
| L530 | St James's Road | 8.3 | 13705.0 | 2.1 | 37.6 |
| L531 | Topley Street | 7.8 | 18135.0 | 2.7 | 22.4 |
| L532 | Topley Street | 9.1 | 18135.0 | 2.7 | 35.6 |
| L533 | Topley Street | 10.2 | 18135.0 | 2.7 | 36.6 |
| L534 | Topley Street | 12.5 | 18135.0 | 2.7 | 32.4 |
| L535 | Topley Street | 10.4 | 18135.0 | 2.7 | 38.2 |
| L536 | Topley Street | 11.0 | 16260.0 | 3.1 | 6.9 |
| L537 | Waterloo Road | 16.4 | 13175.0 | 1.4 | 50.0 |
| L538 | Waterloo Road | 9.8 | 13175.0 | 1.4 | 22.5 |
| L539 | Waterloo Road | 10.7 | 13175.0 | 1.4 | 25.2 |
| L540 | Waterloo Road | 9.9 | 13175.0 | 1.4 | 44.5 |
| L541 | Waterloo Road | 10.2 | 13175.0 | 1.4 | 43.1 |
| L542 | Waterloo Road | 14.1 | 13175.0 | 1.4 | 33.1 |
| L543 | Waterloo Road | 10.4 | 13175.0 | 1.4 | 41.0 |
| L544 | Waterloo Road | 10.2 | 13175.0 | 1.4 | 44.2 |
| L545 | Waterloo Road | 11.4 | 13175.0 | 1.4 | 38.7 |
| L546 | Waterloo Road | 10.2 | 13175.0 | 1.4 | 23.0 |
| L547 | Waterloo Road | 11.1 | 13175.0 | 1.4 | 34.2 |
| L548 | Waterloo Road | 10.7 | 13175.0 | 1.4 | 40.5 |
| L549 | Waterloo Road | 10.3 | 13175.0 | 1.4 | 37.2 |

| Road Link | | Road Width (m) | 24 Hour AADT Flow | HDV Pop (%) | Mean Vehicle Speed (km/hr) |
|---|---|---|---|---|---|
| L550 | Waterloo Road | 10.0 | 13175.0 | 1.4 | 44.2 |
| L551 | Waterloo Road | 10.3 | 13175.0 | 1.4 | 23.4 |
| L552 | Waterloo Road | 9.8 | 13175.0 | 1.4 | 19.9 |
| L553 | Waterloo Road | 12.9 | 13175.0 | 1.4 | 14.7 |
| L554 | Waterloo Road | 11.4 | 13175.0 | 1.4 | 46.1 |
| L555 | Waterloo Road | 10.0 | 13175.0 | 1.4 | 42.0 |
| L556 | Waterloo Road | 15.0 | 13175.0 | 1.4 | 24.6 |
| L557 | Waterloo Road | 10.1 | 13175.0 | 1.4 | 39.9 |
| L558 | Waterloo Road | 13.4 | 13175.0 | 1.4 | 16.8 |
| L559 | Waterloo Road | 10.5 | 13175.0 | 1.4 | 39.8 |
| L560 | Waterloo Road | 14.0 | 13175.0 | 1.4 | 33.2 |
| L561 | Waterloo Road | 17.4 | 13175.0 | 1.4 | 44.4 |
| L562 | Waterloo Road | 12.9 | 13175.0 | 1.4 | 38.8 |
| L563 | Waterloo Road | 9.9 | 13175.0 | 1.4 | 45.4 |
| L564 | Waterloo Road | 10.9 | 13175.0 | 1.4 | 40.3 |
| L565 | Waterloo Road | 9.9 | 13175.0 | 1.4 | 25.1 |
| L566 | Waterloo Road | 10.5 | 13175.0 | 1.4 | 42.0 |
| L567 | Waterloo Road | 10.3 | 13175.0 | 1.4 | 42.6 |
| L568 | Waterloo Road | 10.7 | 13175.0 | 1.4 | 40.1 |
| L569 | Waterloo Road | 10.9 | 13175.0 | 1.4 | 47.3 |
| L570 | Waterloo Road | 14.7 | 13175.0 | 1.4 | 12.9 |
| L571 | Waterloo Road | 10.5 | 13175.0 | 1.4 | 39.1 |
| L572 | Waterloo Road | 11.3 | 13175.0 | 1.4 | 33.8 |
| L573 | Waterloo Road | 10.6 | 13175.0 | 1.4 | 37.7 |

Reference should be made to Figure 6 within Appendix A for a graphical representation of the road link locations used within the verification assessment. The road width and mean vehicle speed shown in Table B1 remained the same for the 2029 scenarios.

A summary of the 2029 traffic data is shown in Table B2.

### Table B2: 2029 Traffic Data

| Road Link | | DS Scenario | |
|---|---|---|---|
| | | 24 Hr AADT Flow | HDV Prop (%) |
| L1 | Bury New Road | 16872.0 | 2.7 |
| L2 | Bury New Road | 14896.0 | 2.0 |
| L3 | Bury New Road | 16743.0 | 2.6 |
| L4 | Bury New Road | 14896.0 | 2.0 |
| L5 | Bury New Road | 14896.0 | 2.0 |
| L6 | Bury New Road | 16743.0 | 2.6 |
| L7 | Bury New Road | 16872.0 | 2.7 |
| L8 | Bury New Road | 16743.0 | 2.6 |
| L9 | Bury New Road | 16872.0 | 2.7 |
| L10 | Bury New Road | 16872.0 | 2.7 |
| L11 | Bury New Road | 16743.0 | 2.6 |
| L12 | Bury New Road | 14896.0 | 2.0 |
| L13 | Bury New Road | 14896.0 | 2.0 |
| L14 | Bury New Road | 16743.0 | 2.6 |
| L15 | Bury New Road | 16872.0 | 2.7 |
| L16 | Bury New Road | 16872.0 | 2.7 |
| L17 | Bury New Road | 16872.0 | 2.7 |
| L18 | Bury New Road | 16872.0 | 2.7 |
| L19 | Bury New Road | 16743.0 | 2.6 |
| L20 | Bury New Road | 16743.0 | 2.6 |
| L21 | Bury New Road | 16743.0 | 2.6 |
| L22 | Bury New Road | 16743.0 | 2.6 |
| L23 | Bury New Road | 16743.0 | 2.6 |
| L24 | Bury New Road | 16743.0 | 2.6 |
| L25 | Bury New Road | 14896.0 | 2.0 |
| L26 | Bury New Road | 14896.0 | 2.0 |
| L27 | Bury New Road | 16743.0 | 2.6 |
| L28 | Bury New Road | 16743.0 | 2.6 |
| L29 | Bury New Road | 16743.0 | 2.6 |
| L30 | Bury New Road | 14896.0 | 2.0 |
| L31 | Bury New Road | 16872.0 | 2.7 |
| L32 | Bury New Road | 14896.0 | 2.0 |
| L33 | Bury New Road | 16872.0 | 2.7 |

| Road Link | | DS Scenario | |
|---|---|---|---|
| | | 24 Hr AADT Flow | HDV Prop (%) |
| L34 | Bury New Road | 14896.0 | 2.0 |
| L35 | Bury New Road | 16872.0 | 2.7 |
| L36 | Bury New Road | 16872.0 | 2.7 |
| L37 | Bury New Road | 16743.0 | 2.6 |
| L38 | Bury New Road | 16872.0 | 2.7 |
| L39 | Bury New Road | 16743.0 | 2.6 |
| L40 | Bury New Road | 14896.0 | 2.0 |
| L41 | Bury New Road | 16872.0 | 2.7 |
| L42 | Bury New Road | 14896.0 | 2.0 |
| L43 | Bury New Road | 16743.0 | 2.6 |
| L44 | Bury New Road | 16872.0 | 2.7 |
| L45 | Bury New Road | 14896.0 | 2.0 |
| L46 | Bury New Road | 14896.0 | 2.0 |
| L47 | Bury New Road | 16872.0 | 2.7 |
| L48 | Bury New Road | 16872.0 | 2.7 |
| L49 | Bury New Road | 16743.0 | 2.6 |
| L50 | Bury New Road | 14896.0 | 2.0 |
| L51 | Bury New Road | 16743.0 | 2.6 |
| L52 | Bury New Road | 16743.0 | 2.6 |
| L53 | Bury New Road | 14896.0 | 2.0 |
| L54 | Bury New Road | 16872.0 | 2.7 |
| L55 | Bury New Road | 14896.0 | 2.0 |
| L56 | Bury New Road | 16872.0 | 2.7 |
| L57 | Bury New Road | 16872.0 | 2.7 |
| L58 | Bury New Road | 14896.0 | 2.0 |
| L59 | Bury New Road | 14896.0 | 2.0 |
| L60 | Bury New Road | 14896.0 | 2.0 |
| L61 | Bury New Road | 16743.0 | 2.6 |
| L62 | Bury New Road | 16743.0 | 2.6 |
| L63 | Bury New Road | 14896.0 | 2.0 |
| L64 | Bury New Road | 16872.0 | 2.7 |
| L65 | Bury New Road | 14896.0 | 2.0 |
| L66 | Bury New Road | 16743.0 | 2.6 |
| L67 | Bury New Road | 14896.0 | 2.0 |

| Road Link | | DS Scenario | |
|---|---|---|---|
| | | 24 Hr AADT Flow | HDV Prop (%) |
| L68 | Bury New Road | 14896.0 | 2.0 |
| L69 | Bury New Road | 16743.0 | 2.6 |
| L70 | Bury New Road | 16743.0 | 2.6 |
| L71 | Bury New Road | 14896.0 | 2.0 |
| L72 | Bury New Road | 16872.0 | 2.7 |
| L73 | Bury New Road | 14896.0 | 2.0 |
| L74 | Bury New Road | 16872.0 | 2.7 |
| L75 | Bury New Road | 14896.0 | 2.0 |
| L76 | Bury New Road | 16872.0 | 2.7 |
| L77 | Bury Old Road | 13530.0 | 2.3 |
| L78 | Bury Old Road | 14513.0 | 3.2 |
| L79 | Bury Old Road | 14695.0 | 1.7 |
| L80 | Bury Old Road | 14513.0 | 3.2 |
| L81 | Bury Old Road | 14695.0 | 1.7 |
| L82 | Bury Old Road | 14695.0 | 1.7 |
| L83 | Bury Old Road | 13530.0 | 2.3 |
| L84 | Bury Old Road | 14695.0 | 1.7 |
| L85 | Bury Old Road | 14513.0 | 3.2 |
| L86 | Bury Old Road | 13530.0 | 2.3 |
| L87 | Bury Old Road | 13530.0 | 2.3 |
| L88 | Bury Old Road | 14513.0 | 3.2 |
| L89 | Bury Old Road | 14513.0 | 3.2 |
| L90 | Bury Old Road | 14513.0 | 3.2 |
| L91 | Bury Old Road | 14695.0 | 1.7 |
| L92 | Bury Old Road | 14513.0 | 3.2 |
| L93 | Bury Old Road | 14513.0 | 3.2 |
| L94 | Bury Old Road | 13530.0 | 2.3 |
| L95 | Bury Old Road | 13530.0 | 2.3 |
| L96 | Bury Old Road | 14513.0 | 3.2 |
| L97 | Bury Old Road | 14695.0 | 1.7 |
| L98 | Bury Old Road | 14695.0 | 1.7 |
| L99 | Bury Old Road | 13530.0 | 2.3 |
| L100 | Bury Old Road | 14513.0 | 3.2 |
| L101 | Bury Old Road | 14695.0 | 1.7 |

| Road Link | | DS Scenario | |
|---|---|---|---|
| | | 24 Hr AADT Flow | HDV Prop (%) |
| L102 | Bury Old Road | 14695.0 | 1.7 |
| L103 | Bury Old Road | 14695.0 | 1.7 |
| L104 | Bury Old Road | 13530.0 | 2.3 |
| L105 | Bury Old Road | 14513.0 | 3.2 |
| L106 | Bury Old Road | 13530.0 | 2.3 |
| L107 | Bury Old Road | 13530.0 | 2.3 |
| L108 | Bury Old Road | 13530.0 | 2.3 |
| L109 | Bury Old Road | 13530.0 | 2.3 |
| L110 | Bury Old Road | 13530.0 | 2.3 |
| L111 | Bury Old Road | 13530.0 | 2.3 |
| L112 | Bury Old Road | 14513.0 | 3.2 |
| L113 | Bury Old Road | 14513.0 | 3.2 |
| L114 | Bury Old Road | 14695.0 | 1.7 |
| L115 | Bury Old Road | 13530.0 | 2.3 |
| L116 | Bury Old Road | 14695.0 | 1.7 |
| L117 | Bury Old Road | 14513.0 | 3.2 |
| L118 | Bury Old Road | 13530.0 | 2.3 |
| L119 | Bury Old Road | 13530.0 | 2.3 |
| L120 | Bury Old Road | 14695.0 | 1.7 |
| L121 | Bury Old Road | 13530.0 | 2.3 |
| L122 | Bury Old Road | 14513.0 | 3.2 |
| L123 | Bury Old Road | 13530.0 | 2.3 |
| L124 | Bury Old Road | 14513.0 | 3.2 |
| L125 | Bury Old Road | 14513.0 | 3.2 |
| L126 | Cheetham Hill Road | 14513.0 | 3.2 |
| L127 | Cheetham Hill Road | 18868.0 | 2.7 |
| L128 | Cheetham Hill Road | 14259.0 | 2.1 |
| L129 | Cheetham Hill Road | 14513.0 | 3.2 |
| L130 | Cheetham Hill Road | 14513.0 | 3.2 |
| L131 | Cheetham Hill Road | 14513.0 | 3.2 |
| L132 | Cheetham Hill Road | 14513.0 | 3.2 |
| L133 | Cheetham Hill Road | 14513.0 | 3.2 |
| L134 | Cheetham Hill Road | 14259.0 | 2.1 |
| L135 | Cheetham Hill Road | 14513.0 | 3.2 |

| Road Link | | DS Scenario | |
|---|---|---|---|
| | | 24 Hr AADT Flow | HDV Prop (%) |
| L136 | Cheetham Hill Road | 14513.0 | 3.2 |
| L137 | Cheetham Hill Road | 14259.0 | 2.1 |
| L138 | Cheetham Hill Road | 18868.0 | 2.7 |
| L139 | Cheetham Hill Road | 14259.0 | 2.1 |
| L140 | Cheetham Hill Road | 14513.0 | 3.2 |
| L141 | Cheetham Hill Road | 14513.0 | 3.2 |
| L142 | Cheetham Hill Road | 14259.0 | 2.1 |
| L143 | Cheetham Hill Road | 14513.0 | 3.2 |
| L144 | Cheetham Hill Road | 18868.0 | 2.7 |
| L145 | Cheetham Hill Road | 14259.0 | 2.1 |
| L146 | Cheetham Hill Road | 14513.0 | 3.2 |
| L147 | Cheetham Hill Road | 14513.0 | 3.2 |
| L148 | Cheetham Hill Road | 14513.0 | 3.2 |
| L149 | Cheetham Hill Road | 14513.0 | 3.2 |
| L150 | Cheetham Hill Road | 14259.0 | 2.1 |
| L151 | Cheetham Hill Road | 14513.0 | 3.2 |
| L152 | Cheetham Hill Road | 14513.0 | 3.2 |
| L153 | Cheetham Hill Road | 14259.0 | 2.1 |
| L154 | Cheetham Hill Road | 14259.0 | 2.1 |
| L155 | Cheetham Hill Road | 14513.0 | 3.2 |
| L156 | Cheetham Hill Road | 14259.0 | 2.1 |
| L157 | Cheetham Hill Road | 14513.0 | 3.2 |
| L158 | Cheetham Hill Road | 14513.0 | 3.2 |
| L159 | Cheetham Hill Road | 14513.0 | 3.2 |
| L160 | Cheetham Hill Road | 14513.0 | 3.2 |
| L161 | Cheetham Hill Road | 14513.0 | 3.2 |
| L162 | Cheetham Hill Road | 14513.0 | 3.2 |
| L163 | Cheetham Hill Road | 14259.0 | 2.1 |
| L164 | Cheetham Hill Road | 18868.0 | 2.7 |
| L165 | Cheetham Hill Road | 14513.0 | 3.2 |
| L166 | Cheetham Hill Road | 14513.0 | 3.2 |
| L167 | Cheetham Hill Road | 14513.0 | 3.2 |
| L168 | Cheetham Hill Road | 14513.0 | 3.2 |
| L169 | Cheetham Hill Road | 14513.0 | 3.2 |

| Road Link | | DS Scenario | |
|---|---|---|---|
| | | 24 Hr AADT Flow | HDV Prop (%) |
| L170 | Cheetham Hill Road | 17717.0 | 2.4 |
| L171 | Cheetham Hill Road | 17717.0 | 2.4 |
| L172 | Cheetham Hill Road | 14259.0 | 2.1 |
| L173 | Cheetham Hill Road | 14513.0 | 3.2 |
| L174 | Cheetham Hill Road | 14513.0 | 3.2 |
| L175 | Cheetham Hill Road | 17717.0 | 2.4 |
| L176 | Cheetham Hill Road | 14513.0 | 3.2 |
| L177 | Cheetham Hill Road | 14259.0 | 2.1 |
| L178 | Cheetham Hill Road | 14513.0 | 3.2 |
| L179 | Cheetham Hill Road | 14513.0 | 3.2 |
| L180 | Cheetham Hill Road | 14513.0 | 3.2 |
| L181 | Cheetham Hill Road | 14513.0 | 3.2 |
| L182 | Cheetham Hill Road | 18868.0 | 2.7 |
| L183 | Cheetham Hill Road | 14513.0 | 3.2 |
| L184 | Cheetham Hill Road | 14513.0 | 3.2 |
| L185 | Cheetham Hill Road | 14513.0 | 3.2 |
| L186 | Cheetham Hill Road | 14259.0 | 2.1 |
| L187 | Cheetham Hill Road | 18868.0 | 2.7 |
| L188 | Cheetham Hill Road | 14513.0 | 3.2 |
| L189 | Cheetham Hill Road | 17717.0 | 2.4 |
| L190 | Cheetham Hill Road | 14513.0 | 3.2 |
| L191 | Cheetham Hill Road | 14513.0 | 3.2 |
| L192 | Elizabeth Street | 14259.0 | 2.1 |
| L193 | Elizabeth Street | 14259.0 | 2.1 |
| L194 | Elizabeth Street | 14259.0 | 2.1 |
| L195 | Elizabeth Street | 14259.0 | 2.1 |
| L196 | Elizabeth Street | 14259.0 | 2.1 |
| L197 | Elizabeth Street | 14259.0 | 2.1 |
| L198 | Elizabeth Street | 14259.0 | 2.1 |
| L199 | Elizabeth Street | 14259.0 | 2.1 |
| L200 | Elizabeth Street | 14259.0 | 2.1 |
| L201 | Great Cheetham Street East | 20378.0 | 2.5 |
| L202 | Great Cheetham Street East | 20378.0 | 2.5 |
| L203 | Great Cheetham Street East | 14259.0 | 2.1 |

| Road Link | | DS Scenario | |
|---|---|---|---|
| | | 24 Hr AADT Flow | HDV Prop (%) |
| L204 | Great Cheetham Street East | 20378.0 | 2.5 |
| L205 | Great Cheetham Street East | 20378.0 | 2.5 |
| L206 | Great Cheetham Street East | 20378.0 | 2.5 |
| L207 | Great Cheetham Street East | 20378.0 | 2.5 |
| L208 | Great Cheetham Street East | 14259.0 | 2.1 |
| L209 | Great Cheetham Street East | 20378.0 | 2.5 |
| L210 | Great Cheetham Street East | 14259.0 | 2.1 |
| L211 | Great Cheetham Street East | 16743.0 | 2.6 |
| L212 | Great Cheetham Street East | 14259.0 | 2.1 |
| L213 | Great Cheetham Street East | 20378.0 | 2.5 |
| L214 | Great Cheetham Street East | 16743.0 | 2.6 |
| L215 | Great Cheetham Street East | 14259.0 | 2.1 |
| L216 | Great Cheetham Street East | 20378.0 | 2.5 |
| L217 | Great Cheetham Street East | 20378.0 | 2.5 |
| L218 | Great Cheetham Street East | 16743.0 | 2.6 |
| L219 | Great Cheetham Street East | 16743.0 | 2.6 |
| L220 | Great Cheetham Street East | 20378.0 | 2.5 |
| L221 | Great Cheetham Street East | 16743.0 | 2.6 |
| L222 | Great Cheetham Street East | 16743.0 | 2.6 |
| L223 | Great Cheetham Street East | 20378.0 | 2.5 |
| L224 | Great Cheetham Street East | 20378.0 | 2.5 |
| L225 | Great Cheetham Street East | 16743.0 | 2.6 |
| L226 | Great Ducie Street | 30734.0 | 2.5 |
| L227 | Great Ducie Street | 30734.0 | 2.5 |
| L228 | Great Ducie Street | 30734.0 | 2.5 |
| L229 | Great Ducie Street | 30734.0 | 2.5 |
| L230 | Great Ducie Street | 30734.0 | 2.5 |
| L231 | Great Ducie Street | 30734.0 | 2.5 |
| L232 | Great Ducie Street | 30734.0 | 2.5 |
| L233 | Great Ducie Street | 30734.0 | 2.5 |
| L234 | Great Ducie Street | 30734.0 | 2.5 |
| L235 | Inkerman Street | 18868.0 | 2.7 |
| L236 | Leicester Road | 13530.0 | 2.3 |
| L237 | Leicester Road | 14259.0 | 2.1 |

| Road Link | | DS Scenario | |
|---|---|---|---|
| | | 24 Hr AADT Flow | HDV Prop (%) |
| L238 | Leicester Road | 14259.0 | 2.1 |
| L239 | Leicester Road | 14259.0 | 2.1 |
| L240 | Leicester Road | 14259.0 | 2.1 |
| L241 | Leicester Road | 14259.0 | 2.1 |
| L242 | Leicester Road | 13530.0 | 2.3 |
| L243 | Leicester Road | 14259.0 | 2.1 |
| L244 | Leicester Road | 14259.0 | 2.1 |
| L245 | Leicester Road | 13530.0 | 2.3 |
| L246 | Leicester Road | 13530.0 | 2.3 |
| L247 | Leicester Road | 14259.0 | 2.1 |
| L248 | Leicester Road | 13530.0 | 2.3 |
| L249 | Leicester Road | 13530.0 | 2.3 |
| L250 | Leicester Road | 13530.0 | 2.3 |
| L251 | Leicester Road | 14259.0 | 2.1 |
| L252 | Leicester Road | 13530.0 | 2.3 |
| L253 | Leicester Road | 13530.0 | 2.3 |
| L254 | Leicester Road | 13530.0 | 2.3 |
| L255 | Leicester Road | 13530.0 | 2.3 |
| L256 | Leicester Road | 13530.0 | 2.3 |
| L257 | Leicester Road | 13530.0 | 2.3 |
| L258 | Leicester Road | 20378.0 | 2.5 |
| L259 | Leicester Road | 13530.0 | 2.3 |
| L260 | Leicester Road | 13530.0 | 2.3 |
| L261 | Leicester Road | 13530.0 | 2.3 |
| L262 | Leicester Road | 14259.0 | 2.1 |
| L263 | Leicester Road | 14259.0 | 2.1 |
| L264 | Leicester Road | 14259.0 | 2.1 |
| L265 | Leicester Road | 14259.0 | 2.1 |
| L266 | Leicester Road | 20378.0 | 2.5 |
| L267 | Leicester Road | 14259.0 | 2.1 |
| L268 | Leicester Road | 13530.0 | 2.3 |
| L269 | Leicester Road | 14259.0 | 2.1 |
| L270 | Leicester Road | 14259.0 | 2.1 |
| L271 | Leicester Road | 13530.0 | 2.3 |

| Road Link | | DS Scenario | |
|---|---|---|---|
| | | 24 Hr AADT Flow | HDV Prop (%) |
| L272 | Leicester Road | 13530.0 | 2.3 |
| L273 | Leicester Road | 13530.0 | 2.3 |
| L274 | Leicester Road | 13530.0 | 2.3 |
| L275 | Leicester Road | 14259.0 | 2.1 |
| L276 | Leicester Road | 13530.0 | 2.3 |
| L277 | Leicester Road | 13530.0 | 2.3 |
| L278 | Leicester Road | 14259.0 | 2.1 |
| L279 | Leicester Road | 13530.0 | 2.3 |
| L280 | Leicester Road | 13530.0 | 2.3 |
| L281 | Leicester Road | 13530.0 | 2.3 |
| L282 | Leicester Road | 13530.0 | 2.3 |
| L283 | Leicester Road | 13530.0 | 2.3 |
| L284 | Leicester Road | 13530.0 | 2.3 |
| L285 | Leicester Road | 14259.0 | 2.1 |
| L286 | Leicester Road | 13530.0 | 2.3 |
| L287 | Leicester Road | 14259.0 | 2.1 |
| L288 | Leicester Road | 13530.0 | 2.3 |
| L289 | Leicester Road | 14259.0 | 2.1 |
| L290 | Leicester Road | 13530.0 | 2.3 |
| L291 | Leicester Road | 14259.0 | 2.1 |
| L292 | Leicester Road | 13530.0 | 2.3 |
| L293 | Leicester Road | 13530.0 | 2.3 |
| L294 | Leicester Road | 14259.0 | 2.1 |
| L295 | Leicester Road | 14259.0 | 2.1 |
| L296 | Leicester Road | 14259.0 | 2.1 |
| L297 | Leicester Road | 13530.0 | 2.3 |
| L298 | Leicester Road | 13530.0 | 2.3 |
| L299 | Leicester Road | 14259.0 | 2.1 |
| L300 | Leicester Road | 14259.0 | 2.1 |
| L301 | Leicester Road | 14259.0 | 2.1 |
| L302 | Marlborough Road | 14259.0 | 2.1 |
| L303 | Marlborough Road | 14259.0 | 2.1 |
| L304 | Marlborough Road | 14259.0 | 2.1 |
| L305 | Marlborough Road | 14259.0 | 2.1 |

| Road Link | | DS Scenario | |
|---|---|---|---|
| | | 24 Hr AADT Flow | HDV Prop (%) |
| L306 | Middleton Road | 23923.0 | 2.1 |
| L307 | Middleton Road | 14695.0 | 1.7 |
| L308 | Middleton Road | 23923.0 | 2.1 |
| L309 | Middleton Road | 13530.0 | 2.3 |
| L310 | Middleton Road | 23923.0 | 2.1 |
| L311 | Middleton Road | 14695.0 | 1.7 |
| L312 | Middleton Road | 14695.0 | 1.7 |
| L313 | Middleton Road | 14695.0 | 1.7 |
| L314 | Middleton Road | 23923.0 | 2.1 |
| L315 | Middleton Road | 13530.0 | 2.3 |
| L316 | Middleton Road | 23923.0 | 2.1 |
| L317 | Middleton Road | 13530.0 | 2.3 |
| L318 | Middleton Road | 13530.0 | 2.3 |
| L319 | Middleton Road | 23923.0 | 2.1 |
| L320 | Middleton Road | 13530.0 | 2.3 |
| L321 | Middleton Road | 14695.0 | 1.7 |
| L322 | Middleton Road | 23923.0 | 2.1 |
| L323 | Middleton Road | 23923.0 | 2.1 |
| L324 | Middleton Road | 13530.0 | 2.3 |
| L325 | Middleton Road | 14695.0 | 1.7 |
| L326 | Middleton Road | 13530.0 | 2.3 |
| L327 | Middleton Road | 13530.0 | 2.3 |
| L328 | Middleton Road | 13530.0 | 2.3 |
| L329 | Middleton Road | 14695.0 | 1.7 |
| L330 | Middleton Road | 13530.0 | 2.3 |
| L331 | Middleton Road | 23923.0 | 2.1 |
| L332 | Middleton Road | 13530.0 | 2.3 |
| L333 | Middleton Road | 14695.0 | 1.7 |
| L334 | Middleton Road | 14695.0 | 1.7 |
| L335 | Middleton Road | 23923.0 | 2.1 |
| L336 | Middleton Road | 23923.0 | 2.1 |
| L337 | Queens Road | 18868.0 | 2.7 |
| L338 | Queens Road | 17717.0 | 2.4 |
| L339 | Queens Road | 14259.0 | 2.1 |

| Road Link | | DS Scenario | |
|---|---|---|---|
| | | 24 Hr AADT Flow | HDV Prop (%) |
| L340 | Queens Road | 18868.0 | 2.7 |
| L341 | Queens Road | 17717.0 | 2.4 |
| L342 | Queens Road | 18868.0 | 2.7 |
| L343 | Queens Road | 18868.0 | 2.7 |
| L344 | Queens Road | 17717.0 | 2.4 |
| L345 | Queens Road | 18868.0 | 2.7 |
| L346 | Queens Road | 18868.0 | 2.7 |
| L347 | Queens Road | 17717.0 | 2.4 |
| L348 | Queens Road | 18868.0 | 2.7 |
| L349 | Queens Road | 14259.0 | 2.1 |
| L350 | Queens Road | 18868.0 | 2.7 |
| L351 | Queens Road | 17717.0 | 2.4 |
| L352 | Queens Road | 18868.0 | 2.7 |
| L353 | Queens Road | 17717.0 | 2.4 |
| L354 | Queens Road | 18868.0 | 2.7 |
| L355 | Queens Road | 18868.0 | 2.7 |
| L356 | Queens Road | 18868.0 | 2.7 |
| L357 | Queens Road | 17717.0 | 2.4 |
| L358 | Queens Road | 18868.0 | 2.7 |
| L359 | Queens Road | 18868.0 | 2.7 |
| L360 | Queens Road | 18868.0 | 2.7 |
| L361 | Queens Road | 14259.0 | 2.1 |
| L362 | Queens Road | 18868.0 | 2.7 |
| L363 | Queens Road | 18868.0 | 2.7 |
| L364 | Queens Road | 18868.0 | 2.7 |
| L365 | Queens Road | 14259.0 | 2.1 |
| L366 | Queens Road | 17717.0 | 2.4 |
| L367 | Queens Road | 14259.0 | 2.1 |
| L368 | Queens Road | 18868.0 | 2.7 |
| L369 | Queens Road | 18868.0 | 2.7 |
| L370 | Queens Road | 18868.0 | 2.7 |
| L371 | Queens Road | 18868.0 | 2.7 |
| L372 | Queens Road | 14259.0 | 2.1 |
| L373 | Queens Road | 16917.0 | 3.1 |

| Road Link | | DS Scenario | |
|---|---|---|---|
| | | 24 Hr AADT Flow | HDV Prop (%) |
| L374 | Queens Road | 14259.0 | 2.1 |
| L375 | Queens Road | 18868.0 | 2.7 |
| L376 | Queens Road | 14259.0 | 2.1 |
| L377 | Queens Road | 18868.0 | 2.7 |
| L378 | Queens Road | 18868.0 | 2.7 |
| L379 | Queens Road | 18868.0 | 2.7 |
| L380 | Queens Road | 18868.0 | 2.7 |
| L381 | Queens Road | 14259.0 | 2.1 |
| L382 | Queens Road | 18868.0 | 2.7 |
| L383 | Queens Road | 18868.0 | 2.7 |
| L384 | Queens Road | 18868.0 | 2.7 |
| L385 | Queens Road | 18868.0 | 2.7 |
| L386 | Queens Road | 16917.0 | 3.1 |
| L387 | Queens Road | 18868.0 | 2.7 |
| L388 | Queens Road | 18868.0 | 2.7 |
| L389 | Queens Road | 18868.0 | 2.7 |
| L390 | Queens Road | 17717.0 | 2.4 |
| L391 | Queens Road | 18868.0 | 2.7 |
| L392 | Queens Road | 18868.0 | 2.7 |
| L393 | Queens Road | 18868.0 | 2.7 |
| L394 | Queens Road | 14259.0 | 2.1 |
| L395 | Queens Road | 18868.0 | 2.7 |
| L396 | Queens Road | 17717.0 | 2.4 |
| L397 | Queens Road | 18868.0 | 2.7 |
| L398 | Queens Road | 17717.0 | 2.4 |
| L399 | Queens Road | 17717.0 | 2.4 |
| L400 | Rochdale Road | 19872.0 | 4.6 |
| L401 | Rochdale Road | 19872.0 | 4.6 |
| L402 | Rochdale Road | 18868.0 | 2.7 |
| L403 | Rochdale Road | 18868.0 | 2.7 |
| L404 | Rochdale Road | 18868.0 | 2.7 |
| L405 | Rochdale Road | 19872.0 | 4.6 |
| L406 | Rochdale Road | 18868.0 | 2.7 |
| L407 | Rochdale Road | 19872.0 | 4.6 |

| Road Link | | DS Scenario | |
|---|---|---|---|
| | | 24 Hr AADT Flow | HDV Prop (%) |
| L408 | Rochdale Road | 19872.0 | 4.6 |
| L409 | Rochdale Road | 18868.0 | 2.7 |
| L410 | Rochdale Road | 18868.0 | 2.7 |
| L411 | Rochdale Road | 16917.0 | 3.1 |
| L412 | Rochdale Road | 19872.0 | 4.6 |
| L413 | Rochdale Road | 19872.0 | 4.6 |
| L414 | Rochdale Road | 19872.0 | 4.6 |
| L415 | Rochdale Road | 19872.0 | 4.6 |
| L416 | Rochdale Road | 16917.0 | 3.1 |
| L417 | Rochdale Road | 16917.0 | 3.1 |
| L418 | Rochdale Road | 16917.0 | 3.1 |
| L419 | Rochdale Road | 16917.0 | 3.1 |
| L420 | Rochdale Road | 17742.0 | 6.6 |
| L421 | Rochdale Road | 18868.0 | 2.7 |
| L422 | Rochdale Road | 14562.0 | 8.1 |
| L423 | Rochdale Road | 18868.0 | 2.7 |
| L424 | Rochdale Road | 14562.0 | 8.1 |
| L425 | Rochdale Road | 19872.0 | 4.6 |
| L426 | Rochdale Road | 17742.0 | 6.6 |
| L427 | Rochdale Road | 17742.0 | 6.6 |
| L428 | Rochdale Road | 19872.0 | 4.6 |
| L429 | Rochdale Road | 19872.0 | 4.6 |
| L430 | Rochdale Road | 19872.0 | 4.6 |
| L431 | Rochdale Road | 18868.0 | 2.7 |
| L432 | Rochdale Road | 19872.0 | 4.6 |
| L433 | Rochdale Road | 19872.0 | 4.6 |
| L434 | Rochdale Road | 17742.0 | 6.6 |
| L435 | Rochdale Road | 17742.0 | 6.6 |
| L436 | Rochdale Road | 19872.0 | 4.6 |
| L437 | Rochdale Road | 14562.0 | 8.1 |
| L438 | Rochdale Road | 14562.0 | 8.1 |
| L439 | Rochdale Road | 19872.0 | 4.6 |
| L440 | Rochdale Road | 16917.0 | 3.1 |
| L441 | Rochdale Road | 19872.0 | 4.6 |

| Road Link | | DS Scenario | |
|---|---|---|---|
| | | 24 Hr AADT Flow | HDV Prop (%) |
| L442 | Rochdale Road | 16917.0 | 3.1 |
| L443 | Rochdale Road | 16917.0 | 3.1 |
| L444 | Rochdale Road | 18868.0 | 2.7 |
| L445 | Rochdale Road | 18868.0 | 2.7 |
| L446 | Rochdale Road | 16917.0 | 3.1 |
| L447 | Rochdale Road | 19872.0 | 4.6 |
| L448 | Rochdale Road | 17742.0 | 6.6 |
| L449 | Rochdale Road | 17742.0 | 6.6 |
| L450 | Rochdale Road | 19872.0 | 4.6 |
| L451 | Rochdale Road | 17742.0 | 6.6 |
| L452 | Rochdale Road | 17742.0 | 6.6 |
| L453 | Rochdale Road | 17742.0 | 6.6 |
| L454 | Rochdale Road | 19872.0 | 4.6 |
| L455 | Rochdale Road | 19872.0 | 4.6 |
| L456 | Rochdale Road | 18868.0 | 2.7 |
| L457 | Rochdale Road | 16917.0 | 3.1 |
| L458 | Rochdale Road | 19872.0 | 4.6 |
| L459 | Rochdale Road | 14562.0 | 8.1 |
| L460 | Rochdale Road | 18868.0 | 2.7 |
| L461 | Rochdale Road | 19872.0 | 4.6 |
| L462 | Rochdale Road | 18868.0 | 2.7 |
| L463 | Rochdale Road | 17742.0 | 6.6 |
| L464 | Rochdale Road | 17742.0 | 6.6 |
| L465 | Rochdale Road | 14562.0 | 8.1 |
| L466 | Rochdale Road | 14562.0 | 8.1 |
| L467 | Rochdale Road | 18868.0 | 2.7 |
| L468 | Rochdale Road | 18868.0 | 2.7 |
| L469 | Rochdale Road | 19872.0 | 4.6 |
| L470 | Rochdale Road | 18868.0 | 2.7 |
| L471 | Rochdale Road | 17742.0 | 6.6 |
| L472 | Rochdale Road | 18868.0 | 2.7 |
| L473 | Rochdale Road | 18868.0 | 2.7 |
| L474 | Rochdale Road | 19872.0 | 4.6 |
| L475 | Rochdale Road | 18868.0 | 2.7 |

| Road Link | | DS Scenario | |
|---|---|---|---|
| | | 24 Hr AADT Flow | HDV Prop (%) |
| L476 | Rochdale Road | 18868.0 | 2.7 |
| L477 | Rochdale Road | 18868.0 | 2.7 |
| L478 | Rochdale Road | 16917.0 | 3.1 |
| L479 | Rochdale Road | 19872.0 | 4.6 |
| L480 | Rochdale Road | 16917.0 | 3.1 |
| L481 | Rochdale Road | 19872.0 | 4.6 |
| L482 | Rochdale Road | 17742.0 | 6.6 |
| L483 | Rochdale Road | 16917.0 | 3.1 |
| L484 | Rochdale Road | 19872.0 | 4.6 |
| L485 | Rochdale Road | 19872.0 | 4.6 |
| L486 | Rochdale Road | 19872.0 | 4.6 |
| L487 | Rochdale Road | 19872.0 | 4.6 |
| L488 | Rochdale Road | 16917.0 | 3.1 |
| L489 | Rochdale Road | 18868.0 | 2.7 |
| L490 | Rochdale Road | 19872.0 | 4.6 |
| L491 | Rochdale Road | 19872.0 | 4.6 |
| L492 | Rochdale Road | 19872.0 | 4.6 |
| L493 | Rochdale Road | 17742.0 | 6.6 |
| L494 | Rochdale Road | 17742.0 | 6.6 |
| L495 | Rochdale Road | 17742.0 | 6.6 |
| L496 | Rochdale Road | 16917.0 | 3.1 |
| L497 | Rochdale Road | 17742.0 | 6.6 |
| L498 | Rochdale Road | 17742.0 | 6.6 |
| L499 | Rochdale Road | 19872.0 | 4.6 |
| L500 | Rochdale Road | 19872.0 | 4.6 |
| L501 | Rochdale Road | 19872.0 | 4.6 |
| L502 | Rochdale Road | 19872.0 | 4.6 |
| L503 | Rochdale Road | 18868.0 | 2.7 |
| L504 | Rochdale Road | 17742.0 | 6.6 |
| L505 | Rochdale Road | 19872.0 | 4.6 |
| L506 | Rochdale Road | 18868.0 | 2.7 |
| L507 | Rochdale Road | 18868.0 | 2.7 |
| L508 | Rochdale Road | 19872.0 | 4.6 |
| L509 | Rochdale Road | 19872.0 | 4.6 |

| Road Link | | DS Scenario | |
|---|---|---|---|
| | | 24 Hr AADT Flow | HDV Prop (%) |
| L510 | Rochdale Road | 14562.0 | 8.1 |
| L511 | Rochdale Road | 18868.0 | 2.7 |
| L512 | Rochdale Road | 19872.0 | 4.6 |
| L513 | Rochdale Road | 17742.0 | 6.6 |
| L514 | Rochdale Road | 19872.0 | 4.6 |
| L515 | Rochdale Road | 18868.0 | 2.7 |
| L516 | Rochdale Road | 18868.0 | 2.7 |
| L517 | Rochdale Road | 19872.0 | 4.6 |
| L518 | Rochdale Road | 17742.0 | 6.6 |
| L519 | Rochdale Road | 19872.0 | 4.6 |
| L520 | Rochdale Road | 14562.0 | 8.1 |
| L521 | Rochdale Road | 17742.0 | 6.6 |
| L522 | St James Road | 14259.0 | 2.1 |
| L523 | St James Road | 14259.0 | 2.1 |
| L524 | St James Road | 14259.0 | 2.1 |
| L525 | St James Road | 14259.0 | 2.1 |
| L526 | St James's Road | 14259.0 | 2.1 |
| L527 | St James's Road | 14259.0 | 2.1 |
| L528 | St James's Road | 14259.0 | 2.1 |
| L529 | St James's Road | 14259.0 | 2.1 |
| L530 | St James's Road | 14259.0 | 2.1 |
| L531 | Topley Street | 18868.0 | 2.7 |
| L532 | Topley Street | 18868.0 | 2.7 |
| L533 | Topley Street | 18868.0 | 2.7 |
| L534 | Topley Street | 18868.0 | 2.7 |
| L535 | Topley Street | 18868.0 | 2.7 |
| L536 | Topley Street | 16917.0 | 3.1 |
| L537 | Waterloo Road | 13707.0 | 1.4 |
| L538 | Waterloo Road | 13707.0 | 1.4 |
| L539 | Waterloo Road | 13707.0 | 1.4 |
| L540 | Waterloo Road | 13707.0 | 1.4 |
| L541 | Waterloo Road | 13707.0 | 1.4 |
| L542 | Waterloo Road | 13707.0 | 1.4 |
| L543 | Waterloo Road | 13707.0 | 1.4 |

| Road Link | | DS Scenario | |
|---|---|---|---|
| | | 24 Hr AADT Flow | HDV Prop (%) |
| L544 | Waterloo Road | 13707.0 | 1.4 |
| L545 | Waterloo Road | 13707.0 | 1.4 |
| L546 | Waterloo Road | 13707.0 | 1.4 |
| L547 | Waterloo Road | 13707.0 | 1.4 |
| L548 | Waterloo Road | 13707.0 | 1.4 |
| L549 | Waterloo Road | 13707.0 | 1.4 |
| L550 | Waterloo Road | 13707.0 | 1.4 |
| L551 | Waterloo Road | 13707.0 | 1.4 |
| L552 | Waterloo Road | 13707.0 | 1.4 |
| L553 | Waterloo Road | 13707.0 | 1.4 |
| L554 | Waterloo Road | 13707.0 | 1.4 |
| L555 | Waterloo Road | 13707.0 | 1.4 |
| L556 | Waterloo Road | 13707.0 | 1.4 |
| L557 | Waterloo Road | 13707.0 | 1.4 |
| L558 | Waterloo Road | 13707.0 | 1.4 |
| L559 | Waterloo Road | 13707.0 | 1.4 |
| L560 | Waterloo Road | 13707.0 | 1.4 |
| L561 | Waterloo Road | 13707.0 | 1.4 |
| L562 | Waterloo Road | 13707.0 | 1.4 |
| L563 | Waterloo Road | 13707.0 | 1.4 |
| L564 | Waterloo Road | 13707.0 | 1.4 |
| L565 | Waterloo Road | 13707.0 | 1.4 |
| L566 | Waterloo Road | 13707.0 | 1.4 |
| L567 | Waterloo Road | 13707.0 | 1.4 |
| L568 | Waterloo Road | 13707.0 | 1.4 |
| L569 | Waterloo Road | 13707.0 | 1.4 |
| L570 | Waterloo Road | 13707.0 | 1.4 |
| L571 | Waterloo Road | 13707.0 | 1.4 |
| L572 | Waterloo Road | 13707.0 | 1.4 |
| L573 | Waterloo Road | 13707.0 | 1.4 |

Reference should be made to Figure 6 within Appendix A for a graphical representation of the road link locations used within the operation phase assessment.

**Emission Factors**

Emission factors for each link were calculated using the relevant traffic flows and the Emissions Factor Toolkit (version 14.1) released in May 2026, which incorporates updated COPERT v5.9.1 vehicle emissions factors for $NO_x$, $PM_{10}$ and $PM_{2.5}$ and EURO 6 vehicle fleet sub-categories.

**$NO_x$ to $NO_2$ Conversion**

Predicted annual mean $NO_x$ concentrations from the dispersion model were converted to $NO_2$ concentrations using the $NO_x$ to $NO_2$ Calculator (v.9.1) provided by DEFRA, which is the method detailed within LAQM.TG(22).

**Meteorological Data**

Meteorological data used in this assessment was taken from Manchester Airport meteorological station over the period 1st January 2024 to 31st December 2024 (inclusive).

Manchester Airport meteorological station is located at approximate NGR: 381795, 384124 which is approximately 17.08km West of the Proposed Development. Manchester Airport data has been used for this assessment as it represents the closest meteorological station to the development site and as such, it is considered to provide a reasonable representation of conditions present.

All meteorological records used in the assessment were provided by the Met Office. Reference should be made to Figure 5 within Appendix A for a wind rose of utilised meteorological data.

**Roughness Length**

The specific roughness length ($z_0$) values used to represent conditions during the verification process, DS scenario, as well as conditions at the Manchester Airport meteorological station are summarised in Table B3.

**Table B3: Utilised Roughness Lengths**

| Scenario | Roughness Length (m) | ADMS Description |
|---|---|---|
| Verification, DM and DS Scenarios | 1.0 | Cities, woodlands |
| Manchester Airport | 0.02 | Open grassland |

These values of $z_0$ are considered appropriate for the morphology of the assessment area.

**Monin-Obukhov Length**

The Monin-Obukhov length provides a measure of the stability of the atmosphere within certain urban or rural contexts. The specific length values used to represent conditions during the

verification process, DS scenario, as well as conditions at Manchester Airport are summarised in Table B4.

**Table B4: Utilised Monin-Obukhov Lengths**

| Scenario | Monin-Obukhov Length (m) | ADMS Description |
|---|---|---|
| Verification, DM and DS Scenarios | 30 | Cities and large towns or Mixed urban/industrial |
| Manchester Airport | 30 | Cities and large towns or Mixed urban/industrial |

This Monin-Obukhov value is considered appropriate for the morphology of the assessment area.

**Background Concentrations**

The 2024 annual mean background concentrations detailed in Table B5, were used in the dispersion modelling assessment to represent annual mean pollutant levels at the Proposed Development site and local monitoring sites.

Table B5 displays the specific background concentrations as predicted by DEFRA, utilised to represent the condition at the monitoring locations used within the verification process.

The Urban Background monitoring station (ID: MA26ANO), located approximately 2183.32 m from the site, was used to obtain background concentrations for NO2, as it provides more representative measurements of local concentrations.

**Table B5: Predicted Background Pollutant Concentrations for Monitoring Locations**

| Monitoring Location | DEFRA Grid Square | Pollutant | 2024 Predicted Background Concentration (µg/m³) |
|---|---|---|---|
| SA86NO | 383500, 401500 | $NO_X$ | 21.0044 |
| | | $NO_2$ | 24.6000 |
| | | $PM_{10}$ | 12.9704 |
| | | $PM_{2.5}$ | 7.6962 |
| MA104BNO | 383500, 399500 | $NO_X$ | 25.5180 |
| | | $NO_2$ | 24.6000 |
| | | $PM_{10}$ | 13.1689 |
| | | $PM_{2.5}$ | 7.6814 |
| MA100BNO | 383500, 402500 | $NO_X$ | 20.0725 |
| | | $NO_2$ | 24.6000 |

| Monitoring Location | DEFRA Grid Square | Pollutant | 2024 Predicted Background Concentration (µg/m³) |
|---|---|---|---|
| | | $PM_{10}$ | 12.7756 |
| | | $PM_{2.5}$ | 7.5812 |
| MA103BNO | 385500, 400500 | $NO_X$ | 22.0815 |
| | | $NO_2$ | 24.6000 |
| | | $PM_{10}$ | 13.3654 |
| | | $PM_{2.5}$ | 7.8260 |
| MA101BNO | 385500, 402500 | $NO_X$ | 20.2402 |
| | | $NO_2$ | 24.6000 |
| | | $PM_{10}$ | 12.8276 |
| | | $PM_{2.5}$ | 7.7324 |

**Verification**

The predicted results from a dispersion model may differ from measured concentrations for a large number of reasons, including:

- Estimates of background concentrations;
- Uncertainties in source activity data such as traffic flows and emission factors;
- Variations in meteorological conditions;
- Overall model limitations; and
- Uncertainties associated with monitoring data, including locations.

Model verification is the process by which these and other uncertainties are investigated and where possible minimised. In reality, the differences between modelled and monitored results are likely to be a combination of all of these aspects.

For the purpose of this assessment model verification was undertaken for 2024, using traffic data, meteorological data and monitoring results from this year.

MCC undertakes periodic monitoring of $NO_2$ concentrations at 6 roadside monitoring locations within the assessment extent. The road contribution to total $NO_x$ concentration was calculated from the monitored $NO_2$ result for use in the verification process. This was undertaken following the methodology contained within LAQM.TG(22). The monitored annual mean $NO_x$ concentration and calculated road $NO_x$ concentration are summarised in Table B6.

**Table B6: $NO_x$ Concentrations**

| Site ID | Monitored Road $NO_x$ Concentration (µg/m³) | Modelled Road $NO_x$ Concentration (µg/m³) |
|---|---|---|
| SA86NO | 37.53 | 13.37 |
| MA104BNO | 15.78 | 9.14 |
| MA100BNO | 6.09 | 9.07 |
| MA103BNO | 27.34 | 18.52 |
| MA101BNO | 18.38 | 10.88 |

The monitored and modelled Road $NO_x$ contribution concentrations were compared, and this indicated that a verification factor of **1.7465** was required to be applied to NOx modelling results, as shown in Graph 1.

Graph 1 is provided below.

**Graph 1 - Verification Adjustment Factor**

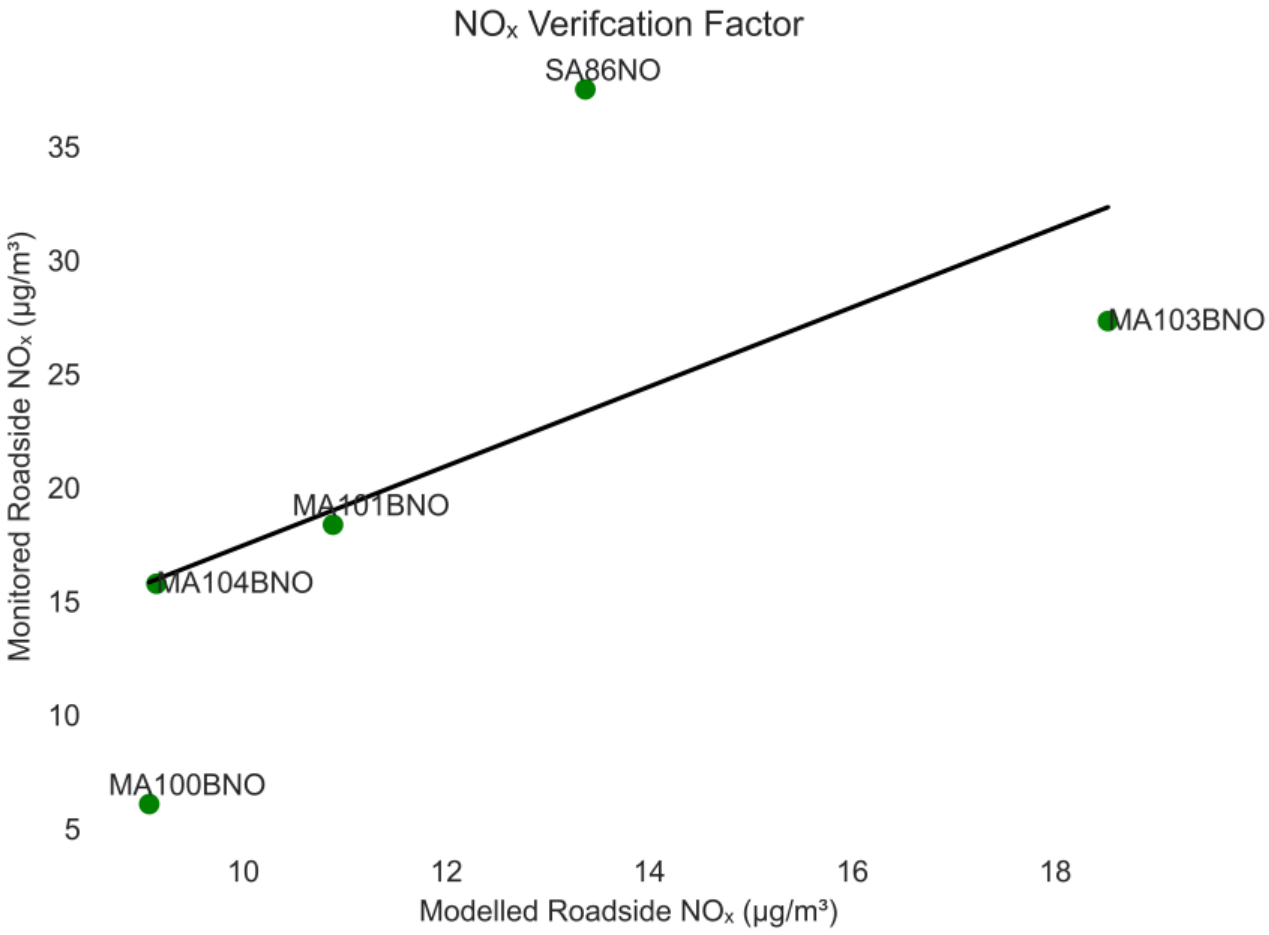



Table B7 presents the monitored annual mean $NO_2$ concentrations and the adjusted modelled total $NO_2$ concentration based on the above verification factor. Exceedances of the annual mean $NO_2$ AQO are highlighted in **bold**.

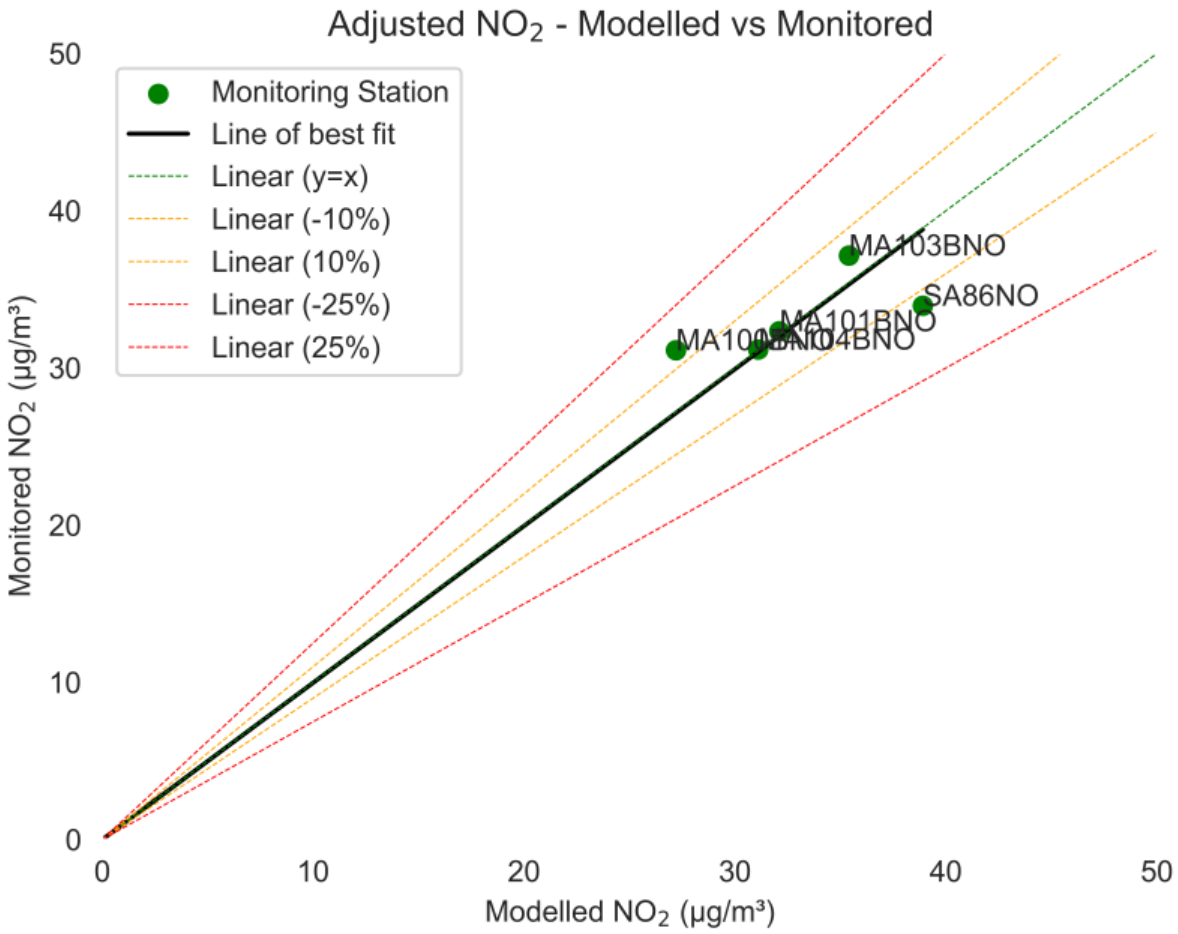
**Table B7: $NO_2$ Concentrations**

| Site ID | Monitored Road $NO_2$ Concentration (µg/m³) | Adjusted Modelled Road $NO_2$ Concentration (µg/m³) | % Difference ((Monitored - Modelled)/Monitored)) * 100 |
|---|---|---|---|
| SA86NO | 38.9 | 33.96 | 12.7% |
| MA104BNO | 31.1 | 31.17 | -0.23% |
| MA100BNO | 27.2 | 31.13 | -14.45% |
| MA103BNO | 35.4 | 37.15 | -4.94% |
| MA101BNO | 32.1 | 32.34 | -0.75% |

As demonstrated in Table B7, the percentage difference between modelled and monitored concentrations is deemed acceptable and is less than 25% in all cases, and less than or equal to 10% at 3 locations. This reduces uncertainties in the model predictions and provides a robust representation of pollutant concentrations in accordance with the guidance suggested in LAQM.TG(22).

A graphical representation of the adjusted $NO_2$ concentrations is provided within Graph 2.

**Graph 2 – Modelled vs Monitored $NO_2$**




As $PM_{10}$ and $PM_{2.5}$ monitoring is not undertaken within the assessment extents, the $NO_2$ adjustment factor of **1.7465** was utilised to adjust model predictions of $PM_{10}$ and $PM_{2.5}$ in accordance with the guidance provided within LAQM.TG(22).

# APPENDIX C: CONSTRUCTION PHASE METHODOLOGY

There is the potential for fugitive dust emissions to occur as a result of construction phase activities. These have been assessed in accordance with the methodology outlined within the Institute of Air Quality Management (IAQM) document 'Guidance on the Assessment of Dust from Demolition and Construction'.

Activities on the proposed construction site have been divided into three types to reflect their different potential impacts. These are:

- Demolition
- Earthworks
- Construction
- Trackout

The potential for dust emissions was assessed for each activity that is likely to take place and considered three separate dust effects:

- Annoyance due to dust soiling;
- Harm to ecological receptors; and
- The risk of health effects due to a significant increase in exposure to $PM_{10}$ and $PM_{2.5}$.

The assessment steps are detailed below.

**Step 1**

Step 1 screens the requirement for a more detailed assessment. Should human receptors be identified within 250m from the site boundary or 50m from the construction vehicle route up to 250m from the site entrance, then the assessment should proceed to Step 2. Additionally, should ecological receptors be identified within 50m of the boundary site or 50m from the construction vehicle route up to 250m from the site entrance, then the assessment should also proceed to Step 2.

Should sensitive receptors not be present within the relevant distances then negligible impacts would be expected and further assessment is not necessary.

**Step 2**

Step 2 assesses the risk of potential dust impacts. A site is allocated to a risk category based on two factors:

- The scale and nature of the works, which determines the magnitude of dust arising as: small, medium or large (Step 2A); and
- The sensitivity of the area to dust impacts, which can be defined as low, medium or high sensitivity (Step 2B).

The two factors are combined in Step 2C to determine the risk of dust impacts without mitigation applied.
Step 2A defines the potential magnitude of dust emission through the construction phase. The relevant criteria are summarised in Table C1.

**Table C1: Construction Dust - Magnitude of Emission**

| Magnitude | Activity | Criteria |
|---|---|---|
| Large | Demolition | ● Total building volume greater than 75,000m3<br>● Potentially dusty construction material (e.g. concrete)<br>● On-site crushing and screening<br>● Demolition activities greater than 12m above ground level |
| | Earthworks | ● Total site area greater than 110,000m$^2$<br>● Potentially dusty soil type (e.g. clay, which will be prone to suspension when dry due to small particle size)<br>● More than 10 heavy earth moving vehicles active at any one time<br>● Formation of bunds greater than 6m in height |
| | Construction | ● Total building volume greater than 75,000m$^3$<br>● On site concrete batching<br>● Sandblasting |
| | Trackout | ● More than 50 Heavy Duty Vehicle (HDV) trips per day<br>● Potentially dusty surface material (e.g. high clay content)<br>● Unpaved road length greater than 100m |
| Medium | Demolition | ● Total building volume 12,000m$^3$ to 75,000m$^3$<br>● Potentially dusty construction material<br>● Demolition activities 6m to 12m above ground level |
| | Earthworks | ● Total site area 18,000m$^2$ to 110,000m$^2$<br>● Moderately dusty soil type (e.g. silt)<br>● 5 to 10 heavy earth moving vehicles active at any one time<br>● Formation of bunds 3m to 6m in height |
| | Construction | ● Total building volume 18,000m$^3$ to 110,000m$^3$<br>● Potentially dusty construction material (e.g. concrete)<br>● On site concrete batching |
| | Trackout | ● 20 to 50 HDV trips per day<br>● Moderately dusty surface material (e.g. high clay content)<br>● Unpaved road length 50m to 100m |
| Small | Demolition | ● Total building volume under 12,000m3<br>● Construction material with low potential for dust release (e.g. metal cladding or timber)<br>● Demolition activities less than 6m above ground level<br>● Demolition during wetter months |
| | Earthworks | ● Total site area less than 18,000m$^2$<br>● Soil type with large grain size (e.g. sand)<br>● Less than 5 heavy earth moving vehicles active at any one time<br>● Formation of bunds less than 4m in height<br>● Earthworks during wetter months |

| Magnitude | Activity | Criteria |
|---|---|---|
| | Construction | ● Total building volume less than 18,000m$^3$<br>● Construction material with low potential for dust release (e.g. metal cladding or timber) |
| | Trackout | ● <20 HDV (3.5t) outward movements in any one day<br>● Surface material with low potential for dust release<br>● Unpaved road length <50m |

Step 2B defines the sensitivity of the area around the development site for construction, earthworks and trackout. The factors influencing the sensitivity of the area are shown in Table C2.

**Table C2: Examples of Factors Defining Sensitivity of an Area**

| Sensitivity | Examples | |
|---|---|---|
| | **Human Receptors** | **Ecological Receptors** |
| High | ● Users expect of high levels of amenity<br>● High aesthetic or value property<br>● People expected to be present continuously for extended periods of time<br>● Locations where members of the public are exposed over a time period relevant to the AQO for $PM_{10}$ e.g. residential properties, hospitals, schools and residential care homes | ● Internationally or nationally designated site e.g. Special Area of Conservation |
| Medium | ● Users would expect to enjoy a reasonable level of amenity<br>● Aesthetics or value of their property could be diminished by soiling<br>● People or property wouldn't reasonably be expected to be present here continuously or regularly for extended periods as part of the normal pattern of use of the land e.g. parks and places of work | ● Nationally designated site e.g. Sites of Special Scientific Interest |
| Low | ● Enjoyment of amenity would not reasonably be expected<br>● Property would not be expected to be diminished in appearance<br>● Transient exposure, where people would only be expected to be present for limited periods. e.g. public footpaths, playing fields, shopping streets, playing fields, farmland, footpaths, short term car park and roads | ● Locally designated site e.g. Local Nature Reserve |

The guidance also provides the following factors to consider when determining the sensitivity of an area to potential dust impacts during the construction phase:

- Any history of dust generating activities in the area;
- The likelihood of concurrent dust generating activity on nearby sites;
- Any pre-existing screening between the source and the receptors;

- Any conclusions drawn from analysing local meteorological data which accurately represent the area; and if relevant the season during which works will take place;
- Any conclusions drawn from local topography;
- Duration of the potential impact, as a receptor may become more sensitive over time; and
- Any known specific receptor sensitivities which go beyond the classifications given in the document.

These factors were considered in the undertaking of this assessment. The sensitivity of the area to dust soiling effects on people and property is shown in Table C3.

**Table C3: Sensitivity of the Area to Dust Soiling Effects on People and Property**

| Receptor Sensitivity | Number of Receptors | Distance from the Source (m) | | | |
|---|---|---|---|---|---|
| | | Less than 20 | Less than 50 | Less than 100 | Less than 250 |
| High | More than 100 | High | High | Medium | Low |
| | 10 - 100 | High | Medium | Low | Low |
| | 1 - 10 | Medium | Low | Low | Low |
| Medium | More than 1 | Medium | Low | Low | Low |
| Low | More than 1 | Low | Low | Low | Low |

Table C4 outlines the sensitivity of the area to human health impacts.

**Table C4: Sensitivity of the Area to Human Health Impacts**

| Receptor Sensitivity | Annual Mean $PM_{10}$ Concentration | Number of Receptors | Distance to Site | | | |
|---|---|---|---|---|---|---|
| | | | Less than 20 | Less than 50 | Less than 100 | Less than 250 |
| High | Greater than 32µg/$m^3$ | More than 100 | High | High | High | Medium |
| | | 10 - 100 | High | High | Medium | Low |
| | | 1 - 10 | High | Medium | Low | Low |
| | 28 - 32µg/$m^3$ | More than 100 | High | High | Medium | Low |
| | | 10 - 100 | High | Medium | Low | Low |
| | | 1 - 10 | High | Medium | Low | Low |
| | 24 - 28µg/$m^3$ | More than 100 | High | Medium | Low | Low |
| | | 10 - 100 | High | Medium | Low | Low |
| | | 1 - 10 | Medium | Low | Low | Low |
| | Less than 24µg/$m^3$ | More than 100 | Medium | Low | Low | Low |
| | | 10 - 100 | Low | Low | Low | Low |
| | | 1 - 10 | Low | Low | Low | Low |
| Medium | Greater than 32µg/$m^3$ | More than 10 | High | Medium | Low | Low |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | 1 - 10 | Medium | Low | Low | Low |
| | 28 - 32µg/m$^3$ | More than 10 | Medium | Low | Low | Low |
| | | 1 - 10 | Low | Low | Low | Low |
| | 24 - 28µg/m$^3$ | More than 10 | Low | Low | Low | Low |
| | | 1 - 10 | Low | Low | Low | Low |
| | Less than 24µg/m$^3$ | More than 10 | Low | Low | Low | Low |
| | | 1 - 10 | Low | Low | Low | Low |
| Low | - | More than 1 | Low | Low | Low | Low |

Table C5 outlines the sensitivity of the area to ecological impacts.

**Table C5: Sensitivity of the Area to Ecological Impacts**

| **Receptor Sensitivity** | **Distance from the Source (m)** | |
|---|---|---|
| | **Less than 20** | **Less than 50** |
| High | High | Medium |
| Medium | Medium | Low |
| Low | Low | Low |

Step 2C combines the dust emission magnitude with the sensitivity of the area to determine the risk of unmitigated impacts.

**Table C6: Dust Risk Category from Demolition**

| **Receptor Sensitivity** | **Dust Emission Magnitude** | | |
|---|---|---|---|
| | **Large** | **Medium** | **Small** |
| High | High | Medium | Medium |
| Medium | High | Medium | Low |
| Low | Medium | Low | Negligible |

Table C7 outlines the risk category from earthworks and construction activities.

**Table C7: Dust Risk Category from Earthworks and Construction**

| **Receptor Sensitivity** | **Dust Emission Magnitude** | | |
|---|---|---|---|
| | **Large** | **Medium** | **Small** |
| High | High | Medium | Low |
| Medium | Medium | Medium | Low |
| Low | Low | Low | Negligible |

Table C8 outlines the risk category from trackout.

**Table C8: Dust Risk Category from Trackout**

| Receptor Sensitivity | Dust Emission Magnitude | | |
|---|---|---|---|
| | Large | Medium | Small |
| High | High | Medium | Low |
| Medium | Medium | Medium | Low |
| Low | Low | Low | Negligible |

**Step 3**

Step 3 requires the identification of site-specific mitigation measures within the IAQM guidance to reduce potential dust impacts based upon the relevant risk categories identified in Step 2. For sites with negligible risk mitigation measures beyond those required by legislation are not required. However, additional controls may be applied as part of good practice.

**Step 4**

Once the risk of dust impacts has been determined and the appropriate mitigation measures identified, the final step is to determine the significance of any residual impacts. For almost all construction activity, the aim should be to control effects through the use of effective mitigation. Experience shows that this is normally possible. Hence the residual effect will normally be 'not significant'.