



## **Air Quality Assessment**

**Kings Copse Avenue, Hedge End**

*Prepared for:*  
*Eastleigh Borough Council*  
*Eastleigh House,*  
*Upper Market Street,*  
*Eastleigh,*  
*SO50 9YN*

**August 2025**

**Omnia ref: C11149-2/1.0**

ISO Accredited Certification (UKAS)



## QUALITY ASSURANCE

|                                                                                                   |                                  |                                                                                      |                                     |                   |                   |
|---------------------------------------------------------------------------------------------------|----------------------------------|--------------------------------------------------------------------------------------|-------------------------------------|-------------------|-------------------|
| <b>Project Number: C11149-2</b><br><b>Date: 27/8/2025</b>                                         |                                  |                                                                                      |                                     |                   |                   |
|                                                                                                   |                                  |                                                                                      |                                     |                   |                   |
| <br>Air Quality | <b>Air Quality Assessment</b>    |                                                                                      |                                     |                   |                   |
|                                                                                                   | <b>Issue/revision</b>            | <b>Issue 1</b>                                                                       | <b>Revision 1</b>                   | <b>Revision 2</b> | <b>Revision 3</b> |
|                                                                                                   | <b>Remarks</b>                   | Draft                                                                                | Updated baseline and site boundary  |                   |                   |
|                                                                                                   | <b>Date</b>                      | October 2024                                                                         | August 2025                         |                   |                   |
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## Executive Summary

### Site Address

**Kings Copse Avenue, Hedge End**

An Air Quality Assessment was undertaken to support a planning application for a residential development on land off Kings Copse Avenue, Hedge End.

The proposals have the potential to cause air quality impacts as a result of fugitive dust emissions during construction and road vehicle exhaust emissions during operation. As such, an Air Quality Assessment was undertaken to determine baseline conditions and assess potential impacts as a result of the scheme.

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

During the operational phase of the development there is the potential for air quality impacts as a result of traffic exhaust emissions associated with vehicles travelling to and from the site. These were assessed against the relevant screening criteria. Due to the low number of trips generated by the proposals, road traffic exhaust impacts were predicted to be not significant.

Based on the assessment results, air quality issues are not considered a constraint to planning consent for the development.

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## **1.0 INTRODUCTION**

### **1.1 Background**

This report has been prepared to support a planning application for a residential development on land off Kings Copse Avenue, Hedge End.

The Air Quality Assessment was undertaken by Omnia's partner Redmore Environmental Ltd.

The proposals have the potential to cause air quality impacts as a result of fugitive dust emissions during construction and road vehicle exhaust emissions during operation. As such, an Air Quality Assessment was undertaken to determine baseline conditions and assess potential impacts as a result of the scheme.

### **1.2 Proposed Development**

The site is located on land off Kings Copse Avenue, Hedge End, at approximate National Grid Reference (NGR): 449789, 111979. The relevant Local Authority (LA) is Eastleigh Borough Council (EBC). Reference should be made to Figure 1 for a map of the site and surrounding area.

The proposals comprise the construction of 192 residential dwellings alongside associated landscaping and infrastructure.

### **1.3 Objectives**

The proposals have the potential to cause air quality impacts at sensitive locations during the construction and operational phases. As such, an Air Quality Assessment was undertaken to determine baseline conditions and assess potential impacts associated with the scheme. This is detailed in the following report.

### **1.4 Acronyms**

All acronyms used within this report are defined in the Abbreviations listings, set out in Section 7.

### **1.5 Confidentiality**

This report has been prepared solely for the use of the Client. Should any third party wish to use or rely upon the contents of the report, written approval must be sought from Omnia; a charge may be levied against such approval.

## 2.0 LEGISLATION AND POLICY

### 2.1 Legislation

The Air Quality Standards Regulations (2010) and subsequent amendments include Air Quality Limit Values (AQLVs) for the following pollutants:

- Nitrogen dioxide (NO<sub>2</sub>);
- Sulphur dioxide;
- Lead;
- Particulate matter with an aerodynamic diameter of less than 10µm (PM<sub>10</sub>);
- Particulate matter with an aerodynamic diameter of less than 2.5µm (PM<sub>2.5</sub>);
- Benzene; and,
- Carbon monoxide.

Air Quality Target Values were also provided for several other pollutants. It should be noted that the AQLV for PM<sub>2.5</sub> stated in the Air Quality Standards Regulations (2010) was amended in the Environment (Miscellaneous Amendments) (EU Exit) Regulations (2020).

The Air Quality Strategy (AQS) was produced by the Department for Environment, Food and Rural Affairs (DEFRA) and published on 28<sup>th</sup> April 2023<sup>1</sup>. The document contains standards, objectives and measures for improving ambient air quality, including a number of Air Quality Objectives (AQOs). These are maximum ambient pollutant concentrations that are not to be exceeded either without exception or with a permitted number of exceedences over a specified timescale. These are generally in line with the AQLVs, although the requirements for the determination of compliance vary.

The Environmental Improvement Plan 2023<sup>2</sup> was published in January 2023, providing long term and Interim Targets in order to reduce population exposure to PM<sub>2.5</sub>. The concentration target for 2040 was subsequently adopted in the Environmental Targets (Fine Particulate Matter) (England) Regulations (2023).

Table 1 presents the AQOs, Interim Target and Concentration Target for pollutants considered within this assessment.

*Table 1 Air Quality Objectives/ Interim Target/ Concentration Target*

| Pollutant         | Air Quality Objective/ Interim Target/ Concentration Target |                                                                      |
|-------------------|-------------------------------------------------------------|----------------------------------------------------------------------|
|                   | Concentration                                               | Averaging Period                                                     |
| NO <sub>2</sub>   | 40                                                          | Annual mean                                                          |
|                   | 200                                                         | 1-hour mean, not to be exceeded on more than 18 occasions per annum  |
| PM <sub>10</sub>  | 40                                                          | Annual mean                                                          |
|                   | 50                                                          | 24-hour mean, not to be exceeded on more than 35 occasions per annum |
| PM <sub>2.5</sub> | 12 <sup>(a)</sup>                                           | Annual mean                                                          |

<sup>1</sup> AQS: Framework for Local Authority Delivery, DEFRA, 2023.

<sup>2</sup> Environmental Improvement Plan 2023, DEFRA, 2023.

| Pollutant | Air Quality Objective/ Interim Target/ Concentration Target |                  |
|-----------|-------------------------------------------------------------|------------------|
|           | Concentration                                               | Averaging Period |
|           | 10 <sup>(b)</sup>                                           | Annual mean      |

Note: (a) Interim Target to be achieved by end of January 2028.  
(b) Concentration Target to be achieved by 2040.

Table 2 summarises the advice provided in DEFRA guidance<sup>3</sup> on where the AQOs for pollutants considered within this report apply.

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

| Averaging Period | Objective Should Apply At                                                                                                                                                                                                                                                                                                                                                                                                                       | Objective Should Not Apply At                                                                                                                                                                                                                                                                                                                                 |
|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Annual mean      | All locations where members of the public might be regularly exposed<br>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<br>Hotels, unless people live there as their permanent residence<br>Gardens of residential properties<br>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<br>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 and 8-hour mean objectives apply. Kerbside sites (for example, pavements of busy shopping streets)<br>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<br>Any outdoor locations where members of the public might reasonably be expected to spend one hour or longer | Kerbside sites where the public would not be expected to have regular access                                                                                                                                                                                                                                                                                  |

<sup>3</sup> Local Air Quality Management Technical Guidance (TG22), DEFRA, 2022.

## 2.2 Local Air Quality Management

LAs are required to periodically review and assess air quality within their area of jurisdiction under the system of Local Air Quality Management (LAQM). This review and assessment of air quality involves comparing present and likely future pollutant concentrations against the AQOs. If it is predicted that levels at locations of relevant exposure, as summarised in Table 2, are likely to be exceeded, the LA is required to declare an Air Quality Management Area (AQMA). For each AQMA the LA is required to produce an Air Quality Action Plan, the objective of which is to reduce pollutant concentrations in pursuit of the AQOs.

## 2.3 Dust

The main requirements with respect to dust control from industrial or trade premises not regulated under the Environmental Permitting (England and Wales) Regulations (2016) and subsequent amendments, such as construction sites, is that provided in Section 79 of Part III of the Environmental Protection Act (1990). The Act defines nuisance as:

*"any dust, steam, smell or other effluvia arising on industrial, trade or business premises and being prejudicial to health or a nuisance."*

Enforcement of the Act, in regard to nuisance, is currently under the jurisdiction of the local Environmental Health Department, whose officers are deemed to provide an independent evaluation of nuisance. If the LA is satisfied that a statutory nuisance exists, or is likely to occur or happen again, it must serve an Abatement Notice under Part III of the Environmental Protection Act (1990). The only defence is to show that the process to which the nuisance has been attributed and its operation are being controlled according to best practicable means.

## 2.4 National Planning Policy

The revised National Planning Policy Framework<sup>4</sup> (NPPF) was published in December 2024 and amended in February 2025. The document sets out the Government's planning policies for England and how these are expected to be applied.

The purpose of the planning system is to contribute to the achievement of sustainable development. In order to ensure this, the NPPF recognises three overarching objectives, including the following of relevance to air quality:

*"c) an environmental objective - to protect and enhance our natural, built and historic environment; including making effective use of land, improving biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy."*

Chapter 15 of the NPPF details objectives in relation to conserving and enhancing the natural environment. It states that:

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<sup>4</sup> NPPF, Ministry of Housing, Communities and Local Government, 2024.

*"Planning policies and decisions should contribute to and enhance the natural and local environment by:*

*[...]*

*e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality [...]"*

The NPPF specifically recognises air quality as part of delivering sustainable development and states that:

*"Planning policies and decisions should sustain and contribute towards compliance with relevant limit values or national objectives for pollutants, taking into account the presence of Air Quality Management Areas and Clean Air Zones, and the cumulative impacts from individual sites in local areas. Opportunities to improve air quality or mitigate impacts should be identified, such as through traffic and travel management, and green infrastructure provision and enhancement. So far as possible these opportunities should be considered at the plan-making stage, to ensure a strategic approach and limit the need for issues to be reconsidered when determining individual applications. Planning decisions should ensure that any new development in Air Quality Management Areas and Clean Air Zones is consistent with the local air quality action plan."*

The implications of the NPPF have been considered throughout this assessment.

## **2.5 National Planning Practice Guidance**

The National Planning Practice Guidance<sup>5</sup> (NPPG) web-based resource was launched by the Department for Communities and Local Government to support the NPPF and make it more accessible. The air quality pages are summarised under the following headings:

1. What air quality considerations does planning need to address?
2. What is the role of plan-making with regard to air quality?
3. Are air quality concerns relevant to neighbourhood planning?
4. What information is available about air quality?
5. When could air quality considerations be relevant to the development management process?
6. What specific issues may need to be considered when assessing air quality impacts?
7. How detailed does an air quality assessment need to be?
8. How can an impact on air quality be mitigated?

These were reviewed and the relevant guidance considered as necessary throughout the undertaking of this assessment.

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<sup>5</sup> <https://www.gov.uk/guidance/air-quality--3>.

## 2.6 Local Planning Policy

The Eastleigh Borough Local Plan (2016 - 2036)<sup>6</sup> was adopted by EBC in April 2022. A review of the document identified the following policy of relevance to this report:

*"Policy DM8, Pollution*

*Development will not be permitted if it is likely to cause loss of amenity or impact on public health or other unacceptable environmental impacts through:*

*air pollution (including odours or particulate emissions);*

*[...]*

*Development susceptible to particular forms of pollution will not be permitted:*

*a. where it will be adversely affected by such pollution, unless measures can be taken that adequately mitigate the polluting effects; or,*

*b. where it would inhibit existing or other activities giving rise to acceptable polluting effects.*

*[...]"*

The above policy has been taken into consideration throughout the assessment.

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<sup>6</sup> Eastleigh Borough Local Plan (2016 - 2036), EBC, 2022.

## 3.0 METHODOLOGY

### 3.1 Introduction

The proposed development has the potential to cause air quality impacts during the construction and operational phases. These have been assessed in accordance with the following methodology, which was agreed with Oxana Waite, Pollution Control Specialist at EBC, on 17<sup>th</sup> October 2024.

### 3.2 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 Institute of Air Quality Management (IAQM) document 'Guidance on the Assessment of Dust from Demolition and Construction V2.2'<sup>7</sup>.

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

- Earthworks;
- Construction; and,
- 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<sub>10</sub>.

The assessment steps are detailed below.

#### 3.2.1 Step 1

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

#### 3.2.2 Step 2

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

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<sup>7</sup>Guidance on the Assessment of Dust from Demolition and Construction V2.2, IAQM, 2024.

- 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 3.

*Table 3 Construction Dust - Magnitude of Emission*

| Magnitude | Activity     | Criteria                                                                                                                                                                                                                                                                                                                                                           |
|-----------|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Large     | Earthworks   | <ul style="list-style-type: none"> <li>• Total site area greater than 110,000m<sup>2</sup></li> <li>• Potentially dusty soil type (e.g. clay, which will be prone to suspension when dry due to small particle size)</li> <li>• More than 10 heavy earth moving vehicles active at any one time</li> <li>• Formation of bunds greater than 6m in height</li> </ul> |
|           | Construction | <ul style="list-style-type: none"> <li>• Total building volume greater than 75,000m<sup>3</sup> <ul style="list-style-type: none"> <li>• On site concrete batching</li> <li>• Sandblasting</li> </ul> </li> </ul>                                                                                                                                                  |
|           | Trackout     | <ul style="list-style-type: none"> <li>• More than 50 Heavy Duty Vehicle (HDV) trips per day</li> <li>• Potentially dusty surface material (e.g. high clay content) <ul style="list-style-type: none"> <li>• Unpaved road length greater than 100m</li> </ul> </li> </ul>                                                                                          |
| Medium    | Earthworks   | <ul style="list-style-type: none"> <li>• Total site area 18,000m<sup>2</sup> to 110,000m<sup>2</sup></li> <li>• Moderately dusty soil type (e.g. silt)</li> <li>• 5 to 10 heavy earth moving vehicles active at any one time</li> <li>• Formation of bunds 3m to 6m in height</li> </ul>                                                                           |
|           | Construction | <ul style="list-style-type: none"> <li>• Total building volume 12,000m<sup>3</sup> to 75,000m<sup>3</sup></li> <li>• Potentially dusty construction material (e.g. concrete) <ul style="list-style-type: none"> <li>• On site concrete batching</li> </ul> </li> </ul>                                                                                             |
|           | Trackout     | <ul style="list-style-type: none"> <li>• 20 to 50 HDV trips per day</li> <li>• Moderately dusty surface material (e.g. high clay content) <ul style="list-style-type: none"> <li>• Unpaved road length 50m to 100m</li> </ul> </li> </ul>                                                                                                                          |
| Small     | Earthworks   | <ul style="list-style-type: none"> <li>• Total site area less than 18,000m<sup>2</sup></li> <li>• Soil type with large grain size (e.g. sand)</li> <li>• Less than 5 heavy earth moving vehicles active at any one time</li> <li>• Formation of bunds less than 3m in height</li> </ul>                                                                            |
|           | Construction | <ul style="list-style-type: none"> <li>• Total building volume less than 12,000m<sup>3</sup></li> <li>• Construction material with low potential for dust release (e.g. metal cladding or timber)</li> </ul>                                                                                                                                                       |

| Magnitude | Activity | Criteria                                                                                                                                                                                        |
|-----------|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           | Trackout | <ul style="list-style-type: none"> <li>• Less than 20 HDV trips per day</li> <li>• Surface material with low potential for dust release</li> <li>• Unpaved road length less than 50m</li> </ul> |

Step 2B defines the sensitivity of the area around the development to potential dust impacts. The sensitivities of specific receptors are summarised in Table 4.

*Table 4 Construction Dust - Sensitivities of Human and Ecological Receptors*

| Receptor Sensitivity | Examples                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                     |
|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
|                      | Human Receptors                                                                                                                                                                                                                                                                                                                                                                                                            | Ecological Receptors                                                                                                                |
| High                 | <ul style="list-style-type: none"> <li>• Users expect high levels of amenity</li> <li>• High aesthetic or value property</li> <li>• People expected to be present continuously for extended periods of time</li> <li>• Locations where members of the public are exposed over a time period relevant to the AQO for PM<sub>10</sub>. e.g. residential properties, hospitals, schools and residential care homes</li> </ul> | <ul style="list-style-type: none"> <li>• Internationally or nationally designated site e.g. Special Area of Conservation</li> </ul> |
| Medium               | <ul style="list-style-type: none"> <li>• Users would expect to enjoy a reasonable level of amenity</li> <li>• Aesthetics or value of their property could be diminished by soiling</li> <li>• 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</li> </ul>               | <ul style="list-style-type: none"> <li>• Nationally designated site e.g. Sites of Special Scientific Interest</li> </ul>            |
| Low                  | <ul style="list-style-type: none"> <li>• Enjoyment of amenity would not reasonably be expected</li> <li>• Property would not be expected to be diminished in appearance</li> <li>• Transient exposure, where people would only be expected to be present for limited periods. e.g. public footpaths, playing fields, shopping streets, farmland, short term car parks and roads</li> </ul>                                 | <ul style="list-style-type: none"> <li>• Locally designated site e.g. Local Nature Reserve (LNR)</li> </ul>                         |

The criteria for determining the sensitivity of the area to dust soiling effects on people and property is summarised in Table 5.

Table 5 Construction Dust - 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 6 outlines the criteria for determining the sensitivity of the area to human health impacts.

Table 6 Construction Dust - Sensitivity of the Area to Human Health Impacts

| Receptor Sensitivity | Background Annual Mean PM <sub>10</sub> Concentration | Number of Receptors | Distance from the Source (m) |              |               |               |
|----------------------|-------------------------------------------------------|---------------------|------------------------------|--------------|---------------|---------------|
|                      |                                                       |                     | Less than 20                 | Less than 50 | Less than 100 | Less than 250 |
| High                 | Greater than 32µg/m <sup>3</sup>                      | More than 100       | High                         | High         | High          | Medium        |
|                      |                                                       | 10 - 100            | High                         | High         | Medium        | Low           |
|                      |                                                       | 1 - 10              | High                         | Medium       | Low           | Low           |
|                      | 28 - 32µg/m <sup>3</sup>                              | More than 100       | High                         | High         | Medium        | Low           |
|                      |                                                       | 10 - 100            | High                         | Medium       | Low           | Low           |
|                      |                                                       | 1 - 10              | High                         | Medium       | Low           | Low           |
|                      | 24 - 28µg/m <sup>3</sup>                              | More than 100       | High                         | Medium       | Low           | Low           |
|                      |                                                       | 10 - 100            | High                         | Medium       | Low           | Low           |
|                      |                                                       | 1 - 10              | Medium                       | Low          | Low           | Low           |
|                      | Less than 24µg/m <sup>3</sup>                         | More than 100       | Medium                       | Low          | Low           | Low           |
|                      |                                                       | 10 - 100            | Low                          | Low          | Low           | Low           |
|                      |                                                       | 1 - 10              | Low                          | Low          | Low           | Low           |
| Medium               | Greater than 32µg/m <sup>3</sup>                      | More than 10        | High                         | Medium       | Low           | Low           |
|                      |                                                       | 1 - 10              | Medium                       | Low          | Low           | Low           |
|                      | 28 - 32µg/m <sup>3</sup>                              | More than 10        | Medium                       | Low          | Low           | Low           |
|                      |                                                       | 1 - 10              | Low                          | Low          | Low           | Low           |
|                      | 24 - 28µg/m <sup>3</sup>                              | More than 10        | Low                          | Low          | Low           | Low           |
|                      |                                                       | 1 - 10              | Low                          | Low          | Low           | Low           |
|                      | Less than 24µg/m <sup>3</sup>                         | More than 10        | Low                          | Low          | Low           | Low           |
|                      |                                                       | 1 - 10              | Low                          | Low          | Low           | Low           |
| Low                  | -                                                     | 1 or more           | Low                          | Low          | Low           | Low           |

Table 7 outlines the criteria for determining the sensitivity of the area to ecological impacts.

Table 7 Construction Dust - 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          |

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

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

Table 8 outlines the risk category from earthworks, construction and trackout activities.

*Table 8 Construction Dust - Dust Risk Category from Earthworks, Construction and Trackout Activities*

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

### 3.2.3 Step 3

Step 3 requires the identification of site-specific mitigation measures within the IAQM guidance<sup>8</sup> 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.

### 3.2.4 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**.

## 3.3 Operational Phase Assessment

The proposal has the potential to increase concentrations of NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> as a result of road traffic exhaust emissions associated with vehicles travelling to and from the site during the operational phase. A screening assessment was therefore undertaken using the criteria contained within the IAQM 'Land-Use Planning & Development Control: Planning for Air Quality'<sup>9</sup> guidance to determine the potential for trips generated by the scheme to affect local air quality.

The following criteria are provided to help establish when an assessment of potential impacts on the local area is likely to be considered necessary:

- A change of Light Duty Vehicles (LDV) flows or more than 100 Annual Average Daily Traffic (AADT) within or adjacent to an AQMA or more than 500 AADT elsewhere;
- A change of HDV flows or more than 25 AADT within or adjacent to an AQMA or more than

<sup>8</sup> Guidance on the Assessment of Dust from Demolition and Construction V2.2, IAQM, 2024.

<sup>9</sup> Land-Use Planning & Development Control: Planning for Air Quality, IAQM, 2017.

100 AADT elsewhere;

- Realignment of roads where the change is 5m or more and the road is within an AQMA; or,
- Introduction of a new junction or removal of an existing junction near to relevant receptors.

Should these criteria not be met, the IAQM guidance<sup>10</sup> considers air quality impacts associated with a scheme to be **not significant** and no further assessment is required.

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<sup>10</sup> Land-Use Planning & Development Control: Planning for Air Quality, IAQM, 2017.

## 4.0 BASELINE

### 4.1 Introduction

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

### 4.2 Local Air Quality Management

As required by the Environment Act (1995), as amended by the Environment Act (2021), EBC has undertaken Review and Assessment of air quality within their area of jurisdiction. This process has indicated that annual mean concentrations of NO<sub>2</sub> are above the AQO within the district. As such, four AQMAs have been declared. The closest of these to the site are described as follows:

*"Hamble Lane Area AQMA No. 3 - Follows the B3397 Hamble Lane from its junction with the A3025 Portsmouth Rd to the Windhover roundabout, encompasses the roundabout and follows the A27 south east to the Borough boundary with a 30m corridor on either side."*

*"High Street Botley AQMA No. 4 - An area encompassing a number of properties along High Street from Maypole roundabout to the Winchester Street junction."*

The development is located approximately 1.8km north-east of AQMA No.3 and 1km south of AQMA No.4. As such, there is the potential for vehicles travelling to and from the site to increase pollution levels in these sensitive areas. This has been considered throughout the undertaking of the assessment.

EBC has concluded that concentrations of all other pollutant considered in the AQS are below the relevant AQOs. As such, no further AQMAs have been declared.

### 4.3 Air Quality Monitoring

Monitoring of pollutant concentrations is undertaken by EBC throughout their area of jurisdiction. Recent annual mean NO<sub>2</sub> results recorded in the vicinity of the site, as provided in EBC's '2024 Air Quality Annual Status Report (ASR)'<sup>11</sup>, are shown in Table 9.

Table 9 Monitoring Results

| Monitoring Site |                     | Monitored NO <sub>2</sub> Concentration (µg/m <sup>3</sup> ) |      |      |      |
|-----------------|---------------------|--------------------------------------------------------------|------|------|------|
|                 |                     | 2020                                                         | 2021 | 2022 | 2023 |
| GR              | Grange Road         | 23.3                                                         | 24.0 | 23.5 | 21.5 |
| KCA (18)        | Kings Copse Avenue  | 24.5                                                         | 26.3 | 25.1 | 23.0 |
| PAV             | Pavilion Road(a)    | -                                                            | -    | 16.4 | 11.2 |
| UNC             | Upper Northam Close | 19.4                                                         | 19.0 | 18.6 | 18.3 |

Note: (a) Monitor commissioned in 2022.

<sup>11</sup> 2024 Air Quality ASR, EBC, 2024.

As shown in Table 9, annual mean NO<sub>2</sub> concentrations were below the AQO of 40µg/m<sup>3</sup> at all monitoring locations in recent years. Reference should be made to Figure 2 for a map of the survey positions.

Pollutant concentrations during 2020 and 2021 were affected by changes to travel patterns associated with the COVID-19 pandemic. The results should therefore be viewed with caution. However, data for 2022 and beyond is now considered representative of post-pandemic conditions. This is supported by the IAQM<sup>12</sup>, who have adopted the following position:

*"ambient air quality monitoring data for the year 2022 and beyond is generally considered to represent the current post-pandemic baseline."*

Monitoring of PM<sub>10</sub> or PM<sub>2.5</sub> concentrations is not undertaken in the vicinity of the site.

#### 4.4 Background Pollutant Concentration Predictions

Predictions of NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> concentrations on a 1km by 1km grid basis have been produced by DEFRA. These maps cover the entire of the UK to assist LAs in their Review and Assessment of air quality. The proposed development site is located in four grid squares. Data for these locations were downloaded from the DEFRA website<sup>13</sup> for the purpose of the assessment and are summarised in Table 10.

Table 10 Background Pollutant Concentration Predictions

| NGR(m)         | Predicted 2025 Background Pollutant Concentration (µg/m <sup>3</sup> ) |                  |                   |
|----------------|------------------------------------------------------------------------|------------------|-------------------|
|                | NO <sub>2</sub>                                                        | PM <sub>10</sub> | PM <sub>2.5</sub> |
| 449550, 111500 | 10.33                                                                  | 11.33            | 6.95              |
| 450500, 111500 | 9.45                                                                   | 11.51            | 6.73              |
| 449500, 112500 | 10.81                                                                  | 11.82            | 7.49              |
| 450500, 112500 | 9.70                                                                   | 11.36            | 6.90              |

As shown in Table 10, predicted background NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> concentrations are below the relevant AQOs and Concentration Target at the development site.

#### 4.5 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 and road vehicle exhaust emission impacts in the following Sections.

##### 4.5.1 Construction Phase Sensitive Receptors

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 development boundary. These are summarised in Table 11. It should be noted that these include residents of the SS18 Phase 1 development adjacent to the proposals.

<sup>12</sup> Use of 2020 and 2021 Monitoring Datasets - IAQM Position Statement V1.1, IAQM, 2023.

<sup>13</sup> <http://uk-air.defra.gov.uk/data/iaqm-background-maps?year=2021>.

Table 11 Earthworks and Construction Dust Sensitive Receptors

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

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. These are summarised in Table 12.

Table 12 Trackout Dust Sensitive Receptors

| Distance from Site Access Route (m) | Approximate Number of Human Receptors | Approximate Number of Ecological Receptors |
|-------------------------------------|---------------------------------------|--------------------------------------------|
| Up to 20                            | More than 100                         | 1                                          |
| Up to 50                            | More than 100                         | 1                                          |

The ecological receptor identified in Table 11 and Table 12 is Manor Farm LNR. This is situated adjacent to the site boundary.

A number of additional factors have been considered when determining the sensitivity of the surrounding area. These are summarised in Table 13.

Table 13 Additional Area Sensitivity Factors to Potential Dust Impacts

| Guidance                                                                                                                                                      | Comment                                                                                                                                                                                                                                                                           |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Whether there is any history of dust generating activities in the area                                                                                        | Review of the planning portal and Google Maps imagery indicated that construction of a residential development approximately 200m south-west of the site has begun (reference: F/19/86829). It is therefore possible that there has been a history of dust generation in the area |
| The likelihood of concurrent dust generating activity on nearby sites                                                                                         | A review of the planning portal indicated that a number of schemes in the vicinity of the site have recently been granted planning permission. These have the potential to cause concurrent dust emissions should the construction phases overlap with the proposals              |
| Pre-existing screening between the source and the receptors                                                                                                   | Hedges and trees are located along the site boundary. These may act as barriers between emission sources and receptors should they be retained during the construction phase                                                                                                      |
| Conclusions drawn from analysing local meteorological data which accurately represent the area: and if relevant the season during which works will take place | As shown in Figure 3, the predominant wind bearing at the site is from the south-west. As such, receptors to the north-east of the boundary are most likely to be affected by                                                                                                     |

| Guidance                                                                                            | Comment                                                                                                                                                                                             |
|-----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                     | dust releases                                                                                                                                                                                       |
| Conclusions drawn from local topography                                                             | There are no significant topographical constraints to dust dispersion                                                                                                                               |
| Duration of the potential impact, as a receptor may become more sensitive over time                 | Currently it is unclear the duration of the construction phase. However, it is likely that it will extend over one year. The sensitivity of nearby receptors is unlikely to change during this time |
| Any known specific receptor sensitivities which go beyond the classifications given in the document | No specific receptor sensitivities identified during the baseline assessment                                                                                                                        |

Based on the criteria shown in Table 4, the sensitivity of human receptors to potential dust impacts was determined as **high**. This was because the identified receptors included residential properties. The sensitivity of the ecological receptor to potential dust impacts was determined as **low**.

The sensitivity of the receiving environment to specific potential dust impacts, based on the criteria shown in Section 3.2, is shown in Table 14.

*Table 14 Sensitivity of the Surrounding Area to Potential Dust Impacts*

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

## 5.0 ASSESSMENT

### 5.1 Introduction

There is the potential for air quality impacts as a result of the construction and operation of the proposed development. These are assessed in the following Sections.

### 5.2 Construction Phase Assessment

#### 5.2.1 Step 1

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 roads and highway surfaces.

The potential for impacts at sensitive locations depends significantly on local meteorology during the undertaking of dust generating activities, with the most significant effects likely to occur during dry and windy conditions.

The desk-study undertaken to inform the baseline identified a number of sensitive receptors within 250m of the site boundary. As such, a detailed assessment of potential dust impacts was required.

#### 5.2.2 Step 2

##### 5.2.2.1 Earthworks

Earthworks will primarily involve excavating material, haulage, tipping and stockpiling, as well as site levelling and landscaping. The area of the development site is between 18,000m<sup>2</sup> and 110,000m<sup>2</sup>. In accordance with the criteria outlined in Table 3, the magnitude of potential dust emissions from earthworks activities is therefore **medium**.

Table 14 indicates the sensitivity of the area to dust soiling effects on people and property is **medium**. In accordance with the criteria outlined in Table 8, the development is considered to be a **medium** risk site for dust soiling as a result of earthworks.

Table 14 indicates the sensitivity of the area to human health impacts is **low**. In accordance with the criteria outlined in Table 8, the development is considered to be a **low** risk site for human health impacts as a result of earthworks.

Table 14 indicates the sensitivity of the area to ecological impacts is **low**. In accordance with the criteria outlined in Table 8, the development is considered to be a **low** risk site for ecological impacts as a result of earthworks.

#### 5.2.2.2 Construction

The total building volume to be constructed is estimated to be between 12,000m<sup>3</sup> and 75,000m<sup>3</sup>. In accordance with the criteria outlined in Table 3, the magnitude of potential dust emissions from construction is therefore **medium**.

Table 14 indicates the sensitivity of the area to dust soiling effects on people and property is **medium**. In accordance with the criteria outlined in Table 8, the development is considered to be a **medium** risk site for dust soiling as a result of construction activities.

Table 14 indicates the sensitivity of the area to human health impacts is **low**. In accordance with the criteria outlined in Table 8, the development is considered to be a **low** risk site for human health impacts as a result of construction activities.

Table 14 indicates the sensitivity of the area to ecological impacts is **low**. In accordance with the criteria outlined in Table 8, the development is considered to be a **low** risk site for ecological impacts as a result of construction activities.

#### 5.2.2.3 Trackout

Based on the site area, it is anticipated that the unpaved road length may be greater than 100m during certain stages of construction. In accordance with the criteria outlined in Table 3, the magnitude of potential dust emissions from trackout is therefore **large**.

Table 14 indicates the sensitivity of the area to dust soiling effects to people and property is **medium**. In accordance with the criteria outlined in Table 8, the development is considered to be a **medium** risk site for dust soiling as a result of trackout activities.

Table 14 indicates the sensitivity of the area to human health impacts is **low**. In accordance with the criteria outlined in Table 8, the development is considered to be a **low** risk site for human health impacts as a result of trackout activities.

Table 14 indicates the sensitivity of the area to ecological impacts is **low**. In accordance with the criteria outlined in Table 8, the development is considered to be a **low** risk site for ecological impacts as a result of trackout activities.

#### Summary of the Risk of Dust Effects

A summary of the risk from each dust generating activity is provided in Table 15.

*Table 15 Summary of Potential Unmitigated Dust Risks*

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

As indicated in Table 15, the potential risk of dust soiling is **medium** from earthworks, construction and trackout. The potential risk of human health impacts is **low** from earthworks, construction and trackout. The potential risk of ecological impacts is **low** from earthworks, construction and trackout.

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.

### 5.2.3 Step 3

The IAQM guidance<sup>14</sup> provides potential mitigation measures to reduce impacts as a result of fugitive dust emissions during the construction phase. These have been adapted for the development site as summarised in Table 16. These may be reviewed prior to the commencement of construction works and incorporated into a Construction Environmental Management Plan or similar if required by the LA.

Table 16 Fugitive Dust Emission Mitigation Measures

| Issue           | Comment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Communications  | <ul style="list-style-type: none"> <li>Develop and implement a stakeholder communications plan that includes community engagement before work commences on site</li> <li>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</li> <li>Display the head or regional office contact information</li> <li>A Dust Management Plan (DMP) will be implemented as part of the proposals which includes measures to control other emissions</li> </ul> |
| Site management | <ul style="list-style-type: none"> <li>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</li> <li>Make the complaints log available to the LA upon request</li> <li>Record any exceptional incidents that cause dust and/or air emissions, either on- or offsite, and the action taken to resolve the situation in the log book</li> <li>Hold regular liaison meetings with other high risk construction sites within 250m of the site boundary</li> </ul>         |

<sup>14</sup> Guidance on the Assessment of Dust from Demolition and Construction V2.2, IAQM, 2024.

| Issue                                              | Comment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Monitoring                                         | <ul style="list-style-type: none"> <li>• 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 upon request</li> <li>• Carry out regular site inspections to monitor compliance with the DMP, record inspection results, and make an inspection log available to the LA upon request</li> <li>• Increase the frequency of site inspections when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions</li> </ul>                                                                                                                                                         |
| Site preparation                                   | <ul style="list-style-type: none"> <li>• Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible</li> <li>• Erect solid screens or barriers around dusty activities or the site</li> <li>• Fully enclose site or specific operations where there is a high potential for dust production and they are active for an extensive period <ul style="list-style-type: none"> <li>• Avoid site runoff of water or mud</li> </ul> </li> <li>• Keep site fencing, barriers and scaffolding clean using wet methods</li> <li>• Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used</li> <li>• Cover, seed or fence stockpiles to prevent wind whipping</li> </ul> |
| Operating vehicle/machinery and sustainable travel | <ul style="list-style-type: none"> <li>• Ensure all vehicles switch off engines when stationary - no idling vehicles</li> <li>• Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable <ul style="list-style-type: none"> <li>• Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials</li> </ul> </li> </ul>                                                                                                                                                                                                                                                                                                                                                 |
| Operations                                         | <ul style="list-style-type: none"> <li>• Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques</li> <li>• Ensure an adequate water supply on the site for effective dust suppression, using non-potable water where possible and appropriate <ul style="list-style-type: none"> <li>• Use enclosed chutes and conveyors and covered skips</li> <li>• Minimise drop heights and use fine water sprays wherever appropriate</li> </ul> </li> <li>• Ensure equipment is available to clean any dry spillages, and clean up spillages as soon as reasonably practicable using wet cleaning methods</li> </ul>                                                                                                         |
| Waste management                                   | <ul style="list-style-type: none"> <li>• Avoid bonfires or burning of waste materials</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

| Issue        | Comment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Earthworks   | <ul style="list-style-type: none"> <li>Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable</li> <li>Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable</li> <li>Only remove the cover in small areas during work and not all at once</li> </ul>                                                                                                                                                                                                                                                                             |
| Construction | <ul style="list-style-type: none"> <li>Avoid scabbling (roughening of concrete surfaces) if possible</li> <li>Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out</li> <li>Ensure bulk cement and other fine powder materials are delivered in enclosed tankers</li> </ul>                                                                                                                                                                                                                                                                                                                                    |
| Trackout     | <ul style="list-style-type: none"> <li>Use water-assisted dust sweeper on access and local roads, if required <ul style="list-style-type: none"> <li>Avoid dry sweeping of large areas</li> </ul> </li> <li>Ensure vehicles entering and leaving site are covered to prevent escape of materials <ul style="list-style-type: none"> <li>Implement a wheel washing system, if required</li> </ul> </li> <li>Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the site exit, wherever site size and layout permits</li> <li>Access gates to be located at least 10m from receptors where possible</li> </ul> |

#### 5.2.4 Step 4

Assuming the relevant mitigation measures outlined in Table 16 are implemented, the residual impacts from all dust generating activities is predicted to be **not significant**, in accordance with the IAQM guidance<sup>15</sup>.

### 5.3 Operational Phase Assessment

#### 5.3.1 Potential Development Impacts

The proposals have the potential to increase concentrations of NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> as a result of road traffic exhaust emissions associated with vehicles travelling to and from the site during the operational phase. Information provided by i-Transport, the Transport Consultants for the project, indicated that the scheme is predicted to generate 552 daily vehicle movements. Distribution on the local road network was provided by i-Transport. This is summarised in Table 20.

Table 17 Trip Distribution

| Road Link                                | Trip Value (AADT) |
|------------------------------------------|-------------------|
| Kings Copse Avenue, north of Site Access | 136               |
| Kings Copse Avenue, south of Site Access | 416               |
| Lower Northam Road                       | 32                |

<sup>15</sup> Guidance on the Assessment of Dust from Demolition and Construction V2.2, IAQM, 2024.

| Road Link      | Trip Value (AADT) |
|----------------|-------------------|
| Broad Oak      | 32                |
| Grange Road    | 64                |
| Woodhouse Lane | 8                 |
| Barnfield Way  | 320               |
| M27 Northbound | 96                |
| M27 Southbound | 112               |
| Bert Betts Way | 96                |

Based on the above, the proposals are not predicted to result in an increase in LDV flows of more than 500 AADT on any individual road link or more than 100 AADT within either AQMA. The proposals do not include significant highway realignment or the introduction of a junction and there will not be a requirement for more than 100 HDV movements per day outside of, or 25 HDV trips within, either AQMA. As such, air quality impacts associated with operational phase road vehicle exhaust emissions are predicted to be **not significant**, in accordance with the IAQM screening criteria shown in Section 3.3.

### 5.3.2 Interim Planning Guidance for PM<sub>2.5</sub>

Interim Planning Guidance<sup>16</sup> on the consideration of the PM<sub>2.5</sub> targets identified in the Environment Act (2021) in planning decisions has been produced by DEFRA. This requires evidence that the key sources of air pollution within a development have been identified and appropriate action to minimise emissions of PM<sub>2.5</sub> and its precursors as far as is reasonably practicable be provided in support of planning applications. To assist the process, two questions and associated considerations are provided. These are summarised in Table 18, along with the scheme response.

*Table 18 Interim Planning Guidance Questions*

<sup>16</sup> <https://uk-air.defra.gov.uk/pm25targets/planning>.

| Question                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Response                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>How has exposure to PM<sub>2.5</sub> been considered when selecting the development site?</p> <p>Factors to consider include:</p> <ul style="list-style-type: none"> <li>• Site proximity to people (particularly large populations and/or vulnerable groups, e.g. schools, hospitals, care homes, areas of deprivation) and the impact of the development on these</li> <li>• Site proximity to pollution sources and the impact of these on users of the development</li> <li>• Exposure and emissions during both construction and in-use</li> </ul> | <p>The site is located on the outskirts of Hedge End. There are no schools, hospitals or care homes within the immediate vicinity of the site. Receptors located along the wider road network have the potential to be affected by road vehicle exhaust emissions associated with vehicles travelling to and from the site. However, emissions from the development are unlikely to have an impact on these receptors. This is supported by the assessment results summarised in Section 5.2 and 5.3</p> <p>The proposed residential units are set back from major road sources. As such, future occupants are unlikely to be exposed to elevated pollutant concentrations</p> <p>As outlined in Table 16, a number of mitigation measures will be used throughout the construction phase in order to reduce fugitive dust emissions as far as practicable. This will control potential exposure at off-site locations</p> |
| <p>What actions and/or mitigations have been considered to reduce PM<sub>2.5</sub> exposure for development users and nearby receptors and to reduce emissions of PM<sub>2.5</sub> and its precursors?</p> <p>Factors to consider include:</p> <ul style="list-style-type: none"> <li>• Site layout</li> <li>• The development's design</li> <li>• Technology used in the construction or installed for use in the development</li> <li>• Construction and future use of the development</li> </ul>                                                        | <p>A number of trees will be retained as part of the proposals. These will provide screening between road vehicle exhaust emissions and future receptors</p> <p>In order to reduce emissions of PM<sub>2.5</sub> with associated impacts at nearby receptors, the proposals include a number of measures which are outlined in Section 5.4</p> <p>Further to the above, in order to reduce emissions during the construction phase, a number of mitigation measures will be used to minimise dust generation from associated activities</p>                                                                                                                                                                                                                                                                                                                                                                                |

Based on the responses provided in Table 18 and the results of the assessment, as outlined in Sections 5.2 and 5.3, it is considered that the scheme has identified key sources of air pollution and taken appropriate action to minimise emissions of PM<sub>2.5</sub>.

## 5.4 Mitigation

The proposals have the potential to cause air quality impacts as a result of fugitive dust emissions during construction and road traffic exhaust emissions associated with vehicles travelling to and from the site during operation. However, these were determined to be **not significant** in accordance with the relevant guidance. Notwithstanding this, at the request of

Oxana Waite, Pollution Control Specialist at EBC, a number of mitigation measures have been included as part of the proposal in order to further reduce emissions from the site during construction and operation. These are as follows:

- Provision of one Electric Vehicle Charging point per dwelling;
- Provision of secure cycle spaces at each dwelling;
- Implementation of cycle and walking infrastructure to promote sustainable modes of transport to and from the site;
- Provision of information packs containing public transport timetables and car sharing clubs;
- Planting of green infrastructure such as hedgerows; and,
- Implementation of the site-specific measures outlined in Table 16 in order to reduce fugitive dust emissions during the construction phase.

The above measures will further reduce emissions generated during construction and operation of the proposals and are considered appropriate for a scheme of this scale and nature.

## 6.0 SUMMARY

This report has been prepared to support a planning application for a residential development on land off Kings Copse Avenue, Hedge End.

The proposals have the potential to cause air quality impacts as a result of fugitive dust emissions during construction and road vehicle exhaust emissions during operation. As such, an Air Quality Assessment was undertaken to determine baseline conditions and assess potential impacts as a result of the scheme.

During the construction phase of the 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<sup>17</sup> methodology. Assuming good practice dust control measures are implemented, the residual significance of potential air quality impacts from dust generated by earthworks, construction and trackout activities was predicted to be **not significant**.

Potential impacts during the operational phase of the proposals may occur due to road traffic exhaust emissions associated with vehicles travelling to and from the site. These were assessed using the IAQM<sup>18</sup> methodology. Due to the low number of vehicle movements generated by the proposals, road traffic exhaust impacts were predicted to be **not significant**.

Based on the assessment results, air quality issues are not considered a constraint to planning consent for the development.

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<sup>17</sup> Guidance on the Assessment of Dust from Demolition and Construction V2.2, IAQM, 2024.

<sup>18</sup> Land-Use Planning & Development Control: Planning for Air Quality, IAQM, 2017.

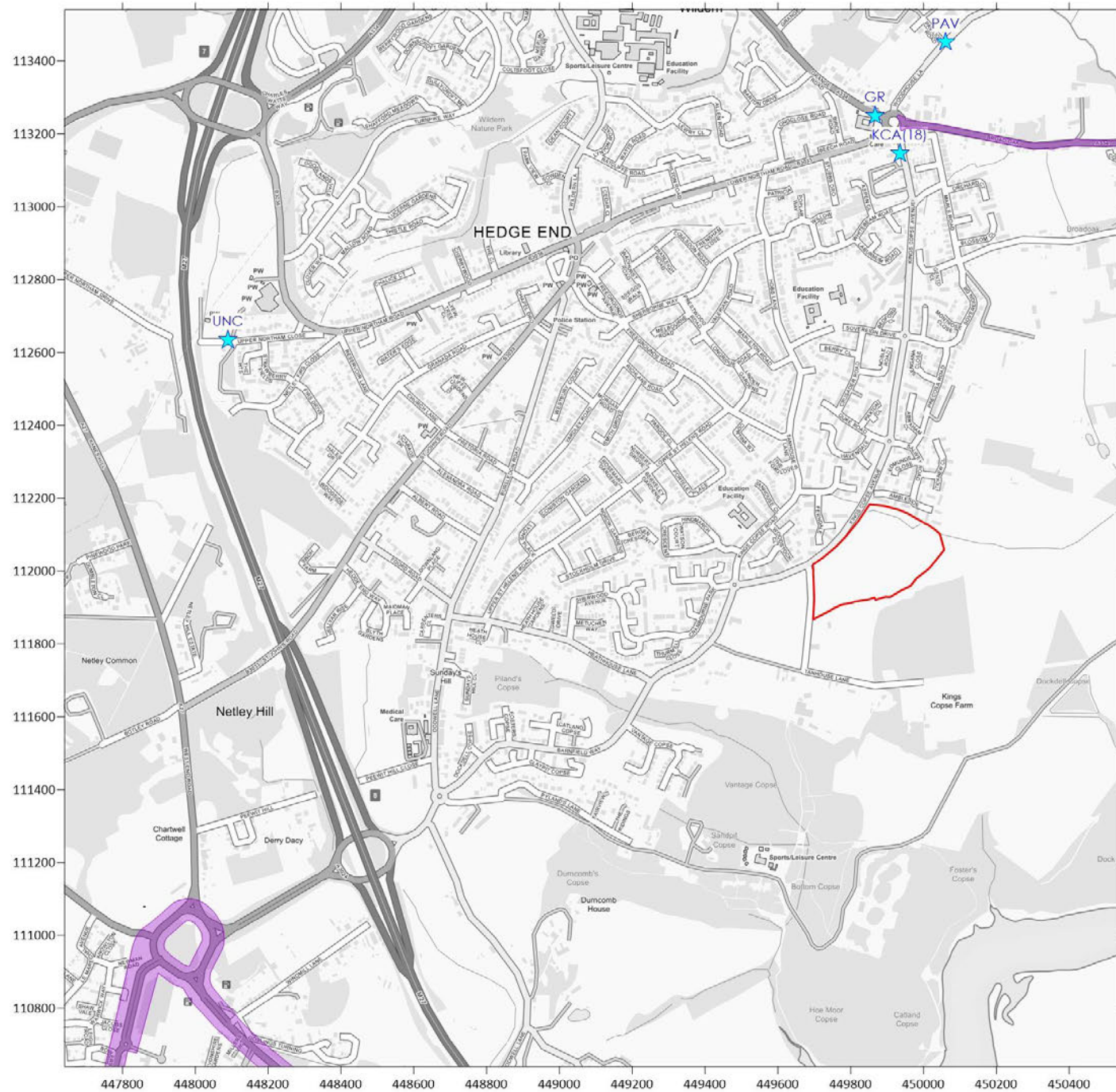
## 7.0 ABBREVIATIONS

|                   |                                                                    |
|-------------------|--------------------------------------------------------------------|
| AADT              | Annual Average Daily Traffic                                       |
| AQLV              | Air Quality Limit Value                                            |
| AQMA              | Air Quality Management Area                                        |
| AQO               | Air Quality Objective                                              |
| AQS               | Air Quality Strategy                                               |
| ASR               | Annual Status Report                                               |
| DEFRA             | Department for Environment, Food and Rural Affairs                 |
| DMP               | Dust Management Plan                                               |
| EBC               | Eastleigh Borough Council                                          |
| HDV               | Heavy Duty Vehicle                                                 |
| IAQM              | Institute of Air Quality Management                                |
| LA                | Local Authority                                                    |
| LAQM              | Local Air Quality Management                                       |
| NGR               | National Grid Reference                                            |
| NO <sub>2</sub>   | Nitrogen dioxide                                                   |
| NPPF              | National Planning Policy Framework                                 |
| NPPG              | National Planning Policy Guidance                                  |
| PM <sub>10</sub>  | Particulate matter with an aerodynamic diameter of less than 10µm  |
| PM <sub>2.5</sub> | Particulate matter with an aerodynamic diameter of less than 2.5µm |

## **APPENDIX I**

### **Drawings**





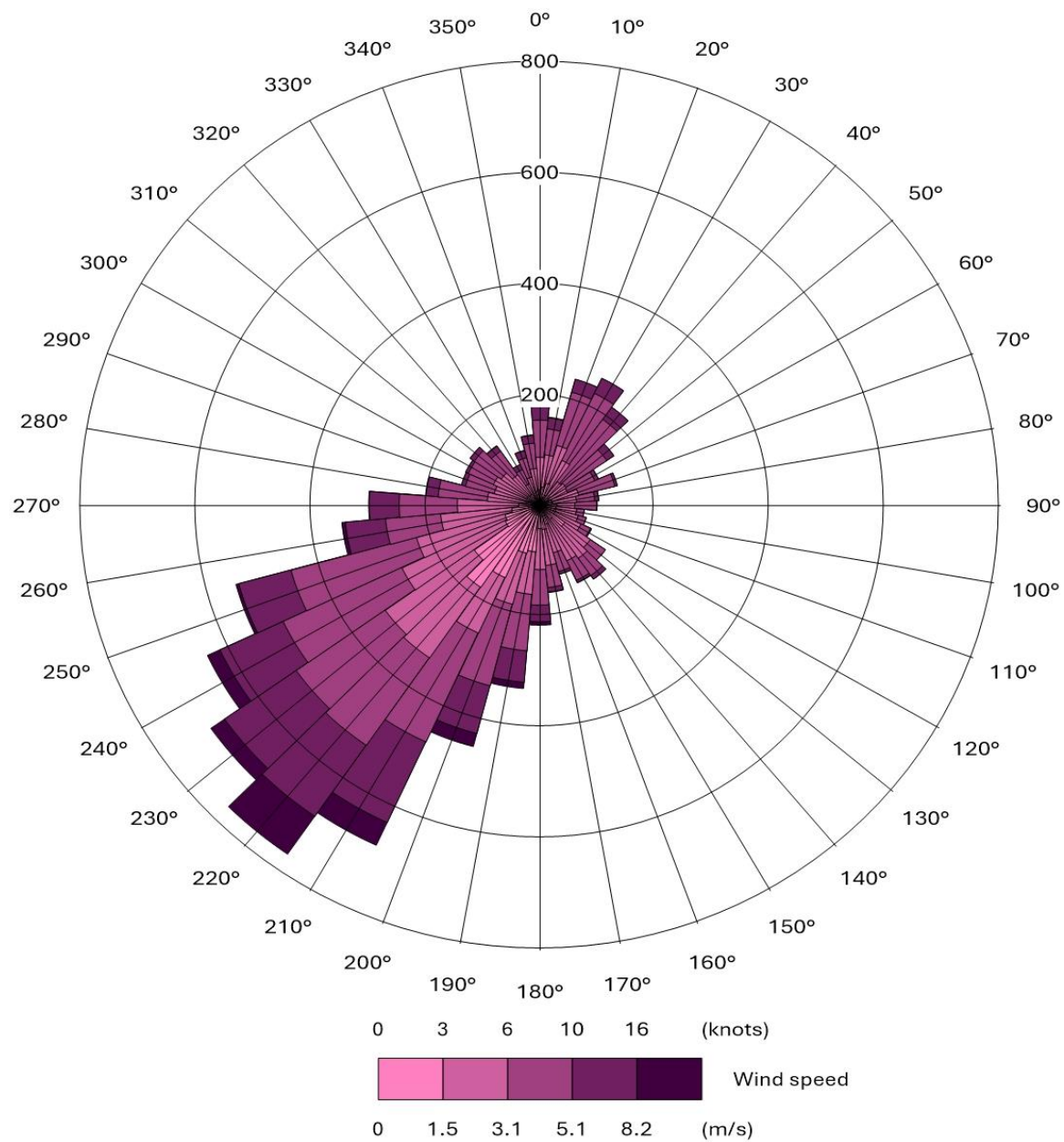
#### Legend

-  Site Location
-  Monitor
-  AQMA

**Title**  
Figure 2 - Monitoring Locations and  
AQMA Extents

**Project**  
Air Quality Assessment  
Kings Copse Avenue, Hedge End

Contains Ordnance Survey Data  
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#### Legend

#### Title

Figure 3 - Wind Rose of 2023  
Southampton Meteorological Data

#### Project

Air Quality Assessment  
Kings Copse Avenue, Hedge End