



# Land Parcels adjacent to Worsell Drive, Copthorne

**Air Quality Assessment**

December 2025

Prepared for:  
**miller homes**

Prepared by:  
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**Air Quality Assessment**  
Land Parcels adjacent to Worsell Drive, Copthorne

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## Air Quality Assessment

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# 1 Introduction

## 1.1 Proposed Development

- 1.1.1 Miller Homes (the 'Applicant') has commissioned Stantec to undertake an air quality assessment to support a planning application for a proposed residential development on Land Parcels off Worsell Drive, Copthorne, Mid Sussex (the 'Site'). The Site is located within the administrative boundary of Mid Sussex District Council (MSDC).
- 1.1.2 The two parcels of land proposed for new homes sit within the existing Heathy Wood residential scheme. This benefitted from outline planning permission which was granted in May 2016 for 500 new homes. Various Reserved Matters applications have been approved to bring forward the detailed design of the Heathy Wood scheme at Copthorne.
- 1.1.3 The parcels were previously considered for a school and doctor's surgery. However, after extensive review, West Sussex County Council (WSCC) has confirmed that a new primary school is not required at this location as a new school could undermine the sustainability of existing schools. Instead, and in line with the obligations of the 2016 outline planning permission, significant financial contributions have been made towards education in the local area. The local medical group has advised it is not viable for it to bring forward a doctor's surgery. Therefore, as required by the outline planning permission, financial contributions have been made to support local healthcare facilities.
- 1.1.4 Accordingly, there are two sustainably located parcels of land at Heathy Wood that are vacant and unused. It is proposed to deliver new homes on these parcels to complement and integrate within the existing homes and wider Copthorne community.
- 1.1.5 This Report is prepared on the proposal of delivering 69 new homes in total across the two parcels of land. The description of development for the application is:
- 1.1.6 Description of Development: '*Full planning application at two parcels of land adjacent to Worsell Drive, Copthorne, each accessed from existing bell-mouth junctions at Worsell Drive and Langridge Way, for the erection of new homes (Use Class C3) including affordable homes; internal access roads, landscaping and associated infrastructure. For information only (to be included as a condition): Number of Homes: 69*' (herein referred to as the 'Proposed Development').

## 1.2 Scope of Assessment

- 1.2.1 This Report describes existing air quality within the study area, and assesses the impact of the construction and operation of the Proposed Development on air quality in the study area.
- 1.2.2 The main air pollutants of concern during the construction period are emissions of dust and fine particulate matter (PM<sub>10</sub>) associated with on-site construction activities and off-site trackout. Additionally, there is the potential for emissions of nitrogen dioxide (NO<sub>2</sub>) and fine particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>) from construction-related traffic.
- 1.2.3 The main air pollutants of concern during the operational period are NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> emissions associated with proposed and existing road traffic.
- 1.2.4 There is no centralised combustion energy centre proposed within the Site, and therefore an assessment of the impacts of emissions from any such combustion source is not required.
- 1.2.5 The assessment has been prepared taking into account the requirements of relevant local and national guidance, policy and legislation.



### **1.3 Consultation**

- 1.3.1 Statutory consultation has been carried out between Stantec and MSDC in the form of email correspondence with the Environmental Health Department in November 2024. The scope and methodology of the assessment was discussed and agreed with the Environmental Health Officer (EHO) at MSDC. The assessment methodology was referred to the EHO at Crawley Borough Council (CBC) due to the proximity of the Site to CBC's administrative area, but at the time of writing no response has been received from CBC.



## 2 Legislation, Policy and Guidance

### 2.1 Air Quality Regulations

- 2.1.1 The Air Quality (England) Regulations 2000 (AQR) defined National Air Quality Objectives (NAQOs, a combination of concentration-based thresholds, averaging periods and compliance dates) for a limited range of pollutants. Subsequent amendments were made to the AQR in 2001 and 2002 to incorporate 'limit values' and 'target values' for a wider range of pollutants as defined in European Union (EU) Directives.
- 2.1.2 These amendments were consolidated by the Air Quality Standards Regulations 2010 (AQSR) (with subsequent amendments most notably in 2016 and for the devolved administrations), which transposed the EU's Directive on ambient air quality and cleaner air for Europe (2008/50/EC) (European Parliament, Council of the European Union, 2008).
- 2.1.3 Following the Transition Period after the UK's departure from the EU in January 2020, the Air Quality (Amendment of Domestic Regulations) (EU Exit) Regulations 2019 (and subsequent amendments for the devolved administrations) have amended the Air Quality Standards Regulations 2010 to reflect the fact that the UK has left the EU. The Environment (Miscellaneous Amendments) (EU Exit) Regulations 2020 amended the PM<sub>2.5</sub> limit value in the AQSR to 20 µg/m<sup>3</sup>.
- 2.1.4 The relevant NAQOs and limit values for this assessment are shown in **Table 2-1**.

Table 2-1 Relevant Air Quality Objectives / limit values

| Pollutant         | Time Period  | Objectives                                                         | Source                    |
|-------------------|--------------|--------------------------------------------------------------------|---------------------------|
| NO <sub>2</sub>   | 1-hour mean  | 200 µg/m <sup>3</sup> not to be exceeded more than 18 times a year | NAQO and AQSR limit value |
|                   | Annual mean  | 40 µg/m <sup>3</sup>                                               | NAQO and AQSR limit value |
| PM <sub>10</sub>  | 24-hour mean | 50 µg/m <sup>3</sup> not to be exceeded more than 35 times a year  | NAQO and AQSR limit value |
|                   | Annual mean  | 40 µg/m <sup>3</sup>                                               | NAQO and AQSR limit value |
| PM <sub>2.5</sub> | Annual mean  | 20 µg/m <sup>3</sup>                                               | NAQO and AQSR limit value |

- 2.1.5 The NAQOs for NO<sub>2</sub> and PM<sub>10</sub> were to have been achieved by 2005 and 2004 respectively, but also continue to apply in all future years thereafter.
- 2.1.6 The 2019 Clean Air Strategy includes a commitment to set a "*new, ambitious, long-term target to reduce people's exposure to PM<sub>2.5</sub>*" which the Environment Act 2021 (Statutory Instrument, 2021) commits the Secretary of State to setting. Two PM<sub>2.5</sub> targets were published via The Environmental Targets (Fine Particulate Matter) (England) Regulations 2023 and are set out below:
- an annual mean concentration target for PM<sub>2.5</sub> levels in England to be 10 µg/m<sup>3</sup> or below by 2040; and
  - a population exposure reduction target for a reduction in PM<sub>2.5</sub> population exposure of 35% compared to 2018 to be achieved by 2040.



2.1.7 The Government has published an Environmental Improvement Plan 2023 (DEFRA, 2023a) which sets out the following interim PM<sub>2.5</sub> targets to be met by the end of January 2028:

- the highest annual mean concentration in the most recent full calendar year must not exceed 12 µg/m<sup>3</sup> of PM<sub>2.5</sub>; and
- compared to 2018, the reduction in population exposure to PM<sub>2.5</sub> in the most recent full calendar year must be 22% or greater.

2.1.8 DEFRA is developing guidance to ensure that the above PM<sub>2.5</sub> targets are appropriately considered in planning applications and planning decisions. Interim guidance (DEFRA, 2024a) has been published, requiring applicants to provide evidence that key sources of air pollution have been identified within their schemes and appropriate action taken to minimise emissions of PM<sub>2.5</sub> as far as reasonably practicable. If quantitative evidence is not available, a qualitative approach can be taken.

### National Air Quality Plan for NO<sub>2</sub> in the UK

2.1.8 The National Air Quality Plan for NO<sub>2</sub> (DEFRA, 2018) sets out how the Government plans to deliver reductions in NO<sub>2</sub> throughout the UK, with a focus on reducing concentrations to below the EU limit values throughout the UK within the “*shortest possible time*”.

2.1.9 The Plan requires all local authorities in England which DEFRA identified as having exceedances of the limit values in their areas past 2020 to develop local plans to improve air quality and identify measures to deliver reduced emissions, with the aim of meeting the limit values within their area within ‘the shortest possible time’. Potential measures include changing road layouts, encouraging public and private ultra-low emission vehicle (ULEV) uptake, the use of retrofitting technologies and new fuels and encouraging public transport. In cases where these measures are not sufficient to bring about the required change within ‘the shortest possible time’ then local authorities may consider implementing access restrictions on more polluting vehicles (e.g. Clean Air Zones (CAZs)).

## 2.2 Air Quality Management

### The Air Quality Strategy

2.2.1 Part IV of the Environment Act 1995 (Statutory Instrument, 1995) required the Secretary of State to prepare and publish a ‘strategy’ regarding air quality.

2.2.2 The Air Quality Strategy (2007) establishes the policy framework for ambient air quality management and assessment in the UK (DEFRA in partnership with the Scottish Executive, The National Assembly for Wales and the Department of the Environment for Northern Ireland, 2007). The primary objective of the Air Quality Strategy is to ensure that everyone can enjoy a level of ambient air quality which poses no significant risk to health or quality of life. The Air Quality Strategy sets out the NAQOs and Government policy on achieving these.

2.2.3 The Environment Act required an updated Air Quality Strategy, and the Air Quality Strategy (DEFRA, 2023b) sets out six priorities including boosting active travel and public transport. The Air Quality Strategy sets out the Government policy on achieving the NAQOs, including the new targets for PM<sub>2.5</sub>.

2.2.4 The Clean Air Strategy (2019) aims to lower national emissions of pollutants, thereby reducing background pollution and minimising human exposure to harmful concentrations of pollution. The Strategy aims to create a stronger and more coherent framework for action to tackle air pollution (DEFRA, 2019).



## Local Air Quality Management

- 2.2.5 Part IV of the Environment Act 1995 (Statutory Instrument, 1995) introduced a system of Local Air Quality Management (LAQM) which requires local authorities to regularly and systematically review and assess air quality within their boundary. In addition, local authorities are required to appraise development and transport plans against these assessments.
- 2.2.6 Where an NAQO is unlikely to be met, the local authority must designate an Air Quality Management Area (AQMA) and draw up an Air Quality Action Plan (AQAP) setting out the measures it intends to introduce in pursuit of the NAQOs within its AQMA.
- 2.2.7 The Local Air Quality Management Technical Guidance 2022 ((LAQM.TG(22); (DEFRA, 2025a)), issued by DEFRA for local authorities provides advice on where the NAQOs apply. These include outdoor locations where members of the public are likely to be regularly present for the averaging period of the NAQOs (which vary from 15 minutes to a year) as summarised in **Table 2-2**.

Table 2-2 Relevant Public Exposure

| Averaging Period             | NAQOs should apply at:                                                                                                                                                                                                                                                                                                                                                                                    | NAQOs don't apply at:                                                                                                                                                                                                                                                                                  |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Annual mean                  | All locations where members of the public might be regularly exposed<br><br>For example:<br>Building façades of residential properties, schools, hospitals, care homes etc                                                                                                                                                                                                                                | Façades of offices or other places of work where members of the public do not have regular access<br><br>Hotels, unless people live there as their permanent residence<br><br>Gardens of residences<br><br>Kerbside sites<br><br>Any other location where public exposure is expected to be short term |
| 24-hour mean and 8-hour mean | All locations where the annual mean NAQO would apply, together with hotels and gardens of residences                                                                                                                                                                                                                                                                                                      | Kerbside sites<br><br>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 NAQOs apply as well as:<br>Kerbside sites<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 locations where the public would not be expected to have regular access                                                                                                                                                                                                                       |

## 2.3 Planning Policy

### National Planning Policy

- 2.3.1 The National Planning Policy Framework (NPPF), published by the Ministry of Housing, Communities and Local Government (MHCLG) (MHCLG, 2025), sets out the Government's planning policies for England and how they are expected to be applied. The following paragraphs are considered relevant from an air quality perspective.



2.3.2 Paragraph 109 on promoting sustainable transport states:

*“Transport issues should be considered from the earliest stages of plan-making and development proposals, so that: ...*

*f) identifying, assessing and taking into account the environmental impacts of traffic and transport infrastructure – including appropriate opportunities for avoiding and mitigating any adverse effects, and for net environmental gains.”*

2.3.3 Paragraph 110 goes on to state:

*“Significant development should be focused on locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes. This can help to reduce congestion and emissions, and improve air quality and public health.”*

2.3.4 Paragraph 187 on conserving and enhancing the natural environment states:

*“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 stability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans, and...”*

2.3.5 Paragraph 187 on conserving and enhancing the natural environment states:

*“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 stability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans, and...”*

2.3.6 Paragraph 198 within ground conditions and pollution states:

*“Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development.”*

2.3.7 Paragraph 199 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.”*

2.3.8 Paragraph 200 states that:



*"Planning policies and decisions should ensure that new development can be integrated effectively with existing businesses and community facilities (such as places of worship, pubs, music venues and sports clubs). Existing businesses and facilities should not have unreasonable restrictions placed on them as a result of development permitted after they were established. Where the operation of an existing business or community facility could have a significant adverse effect on new development (including changes of use) in its vicinity, the applicant (or 'agent of change') should be required to provide suitable mitigation before the development has been completed".*

### National Planning Practice Guidance

- 2.3.9 Paragraph 005, Reference 32-005-20191101 (revision date 01.11.2019), of the Planning Practice Guidance (PPG) (Ministry of Housing, Communities & Local Government (MHCLG), 2019) provides guidance on how considerations regarding air quality can be relevant to the development management process as follows:

*"Whether air quality is relevant to a planning decision will depend on the proposed development and its location. Concerns could arise if the development is likely to have an adverse effect on air quality in areas where it is already known to be poor, particularly if it could affect the implementation of air quality strategies and action plans and/or breach legal obligations (including those relating to the conservation of habitats and species). Air quality may also be a material consideration if the proposed development would be particularly sensitive to poor air quality in its vicinity.*

- *Where air quality is a relevant consideration the local planning authority may need to establish:*
- *The 'baseline' local air quality, including what would happen to air quality in the absence of the development;*
- *Whether the proposed development could significantly change air quality during the construction and operational phases (and the consequences of this for public health and biodiversity); and*
- *Whether occupiers or users of the development could experience poor living conditions or health due to poor air quality."*

- 2.3.10 Paragraph 006, Reference 32-006-20191101 (revision date 01.11.2019), of the PPG identifies what specific air quality issues need to be considered in determining a planning application:

*"Considerations that may be relevant to determining a planning application include whether the development would:*

- *Lead to changes (including any potential reductions) in vehicle-related emissions in the immediate vicinity of the proposed development or further afield. This could be through the provision of electric vehicle charging infrastructure; altering the level of traffic congestion; significantly changing traffic volumes, vehicle speeds or both; and significantly altering the traffic composition on local roads. Other matters to consider include whether the proposal involves the development of a bus station, coach or lorry park; could add to turnover in a large car park; or involve construction sites that would generate large Heavy Goods Vehicle flows over a period of a year or more;*
- *Introduce new point sources of air pollution. This could include furnaces which require prior notification to local authorities; biomass boilers or biomass-fuelled Combined Heat and Power plant; centralised boilers or plant burning other fuels within or close to an air quality management area or introduce relevant combustion within a Smoke Control Area; or extraction systems (including chimneys) which require approval or permits under pollution control legislation;*



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- *Expose people to harmful concentrations of air pollutants, including dust. This could be by building new homes, schools, workplaces or other development in places with poor air quality;*
- *Give rise to potentially unacceptable impacts (such as dust) during construction for nearby sensitive locations; and*
- *Have a potential adverse effect on biodiversity, especially where it would affect sites designated for their biodiversity value."*

2.3.11 Paragraph 007, Reference 32-007-20191101 (revision date 01.11.2019), of the PPG provides guidance on how detailed an assessment needs to be:

*"Assessments need to be proportionate to the nature and scale of development proposed and the potential impacts (taking into account existing air quality conditions), and because of this are likely to be locationally specific".*

and

*"The following could form part of assessments:*

*A description of baseline conditions and any air quality concerns affecting the area, and how these could change both with and without the proposed development;*

- *Sensitive habitats (including designated sites of importance for biodiversity);*
- *The assessment methods to be adopted and any requirements for the verification of modelling air quality;*
- *The basis for assessing impacts and determining the significance of an impact;*
- *Where relevant, the cumulative or in-combination effects arising from several developments;*
- *Construction phase impacts;*
- *Acceptable mitigation measures to reduce or remove adverse effects; and*
- *Measures that could deliver improved air quality even when legally binding limits for concentrations of major air pollutants are not being breached."*

2.3.12 Paragraph 008, Reference 32-008-20140306 (revision date 01.11.2019), of the PPG provides guidance on how an impact on air quality can be mitigated:

*"Mitigation options will need to be locationally specific, will depend on the proposed development and need to be proportionate to the likely impact. It is important that local planning authorities work with applicants to consider appropriate mitigation so as to ensure new development is appropriate for its location and unacceptable risks are prevented. Planning conditions and obligations can be used to secure mitigation where the relevant tests are met.*

*Examples of mitigation include:*

- *Maintaining adequate separation distances between sources of air pollution and receptors;*
- *Using green infrastructure, trees, where this can create a barrier or maintain separation between sources of pollution and receptors;*
- *Appropriate means of filtration and ventilation;*



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- Including infrastructure to promote modes of transport with a low impact on air quality (such as electric vehicle charging points);
- Controlling dust and emissions from construction, operation and demolition; and
- Contributing funding to measures, including those identified in air quality action plans and low emission strategies, designed to offset the impact on air quality arising from new development."

## Local Planning Policy

### Mid Sussex District Plan 2014 – 2031

- 2.3.13 The Mid Sussex District Plan 2014 -2031 (MSDC, 2018) was adopted by MSDC in March 2018 and contains policies relevant to air quality.
- 2.3.14 Policy DP29: Noise, Air and Light Pollution states:

*"The environment, including nationally designated environmental sites, nationally protected landscapes, areas of nature conservation or geological interest, wildlife habitats, and the quality of people's life will be protected from unacceptable levels of noise, light and air pollution by only permitting development where:...*

*...Air Pollution:*

- *It does not cause unacceptable levels of air pollution;*
- *Development on land adjacent to existing use which generates air pollution or odour would not cause any adverse effects on the proposed development or can be mitigated to reduce exposure to poor air quality to recognised and acceptable levels;*
- *Development proposals (where appropriate) are consistent with Air Quality Management Plans.*

*The degree of the noise and light pollution from new development or change of use is likely to be greater in rural locations, especially where it is in or close to specially designated areas and sites."*

### Mid Sussex Site Allocations Development Plan Document

- 2.3.15 MSDC has adopted a Site Allocations Development Plan Document (MSDC, 2022) which includes the following policy which is relevant to air quality.
- 2.3.16 Policy SA38: Air Quality states the following:

*"The Council will require applicants to demonstrate that there is not unacceptable impact on air quality. The development should minimise any air quality impacts, including cumulative impacts from committed developments, both during the construction process and lifetime of the completed development, either through a redesign of the development proposal or, where this is not possible or sufficient, through appropriate mitigation.*

*Where sensitive development is proposed in areas of existing poor air quality and/ or where major development is proposed, including the development types set out in the Council's current guidance (Air Quality and Emissions Mitigation Guidance for Sussex (2019 or as updated)) an air quality assessment will be required.*

*Development proposals that are likely to have an impact on local air quality, including those in or within relevant proximity to existing or potential Air Quality Management Areas (AQMA's), will*



*need to demonstrate measures/ mitigation that are incorporated into the design to minimise any impacts associated with air quality.*

*Mitigation measures will need to demonstrate how the proposal would make a positive contribution towards the aims of the Council's Air Quality Action Plan and be consistent with the Council's current guidance as stated above.*

*Mitigation measures will be secured either through a negotiation on a scheme, or via the use of planning condition and/ or planning obligation depending on the scale and nature of the development and its associated impacts on air quality.*

*In order to prevent adverse effects on the Ashdown Forest SPA and SAC, new development likely to result in increased traffic may be expected to demonstrate how any air quality impacts, including in combination impacts, have been considered in relation to the Ashdown Forest SAC. Any development likely to have a significant effect, either alone or in combination with other development, will be required to demonstrate that adequate measures are put in place to avoid or mitigate for any potential adverse effects."*

### Mid Sussex District Plan 2021 – 2039 Submission Draft (Regulation 19)

2.3.17 MSDC is currently at the Regulation 19 stage of creating a new local plan. A draft was submitted for review in 2023 (MSDC, 2023) which contains policies relevant to air quality.

2.3.18 Policy DPN9: Air Quality states:

*"People's health and quality of life and the natural environment will be protected from unacceptable levels of poor air quality.*

*The use of active and sustainable travel measures and green infrastructure to reduce pollution concentrations and exposure is encouraged.*

*Development proposals will need to take into account the Council's air quality guidance.*

*The Council will require applicants to demonstrate that there is not an unacceptable impact on air quality. The development must minimise any air quality impacts, including cumulative impacts from committed developments, both during the construction process and lifetime of the completed development, either through a redesign of the development proposal or, where this is not possible or sufficient, through appropriate mitigation.*

*Where sensitive development is proposed in areas of existing poor air quality and/or where major development is proposed, including the development types set out in the Council's current guidance (Air Quality and Emissions Mitigation Guidance for Sussex (2021 or as updated)) an air quality assessment will be required.*

*Development proposals that are likely to have an impact on local air quality, including those in or within relevant proximity to existing or candidate Air Quality Management Areas (AQMAs) or designated nature conservation areas sensitive to changes in air quality, will need to demonstrate that measures and/or mitigation are incorporated into the design to minimise any impacts associated with air quality.*

*Mitigation measures will need to demonstrate how the proposal would make a positive contribution towards the aims of the Council's Air Quality Action Plan where it is relevant and be consistent with the Council's current guidance as stated above. Mitigation measures will be secured either through a negotiation on a scheme, or via the use of planning condition and/or planning obligation depending on the scale and nature of the development and its associated impacts on air quality."*



## **2.4 Assessment Guidance**

- 2.4.1 The primary guidance documents used in undertaking this assessment are detailed in the section below.

### **DEFRA 'Local Air Quality Management Technical Guidance (LAQM.TG(22))'**

- 2.4.2 DEFRA LAQM.TG(22) was published for use by local authorities in their LAQM review and assessment work (DEFRA, 2025a). The document provides key guidance on aspects of air quality assessment, including screening, use of monitoring data, and use of background data that are applicable to all air quality assessments.

### **EPUK / IAQM 'Land-Use Planning & Development Control: Planning for Air Quality'**

- 2.4.3 Environmental Protection UK (EPUK) and the Institute of Air Quality Management (IAQM) have together published guidance to help ensure that air quality is properly accounted for in the development control process (EPUK / IAQM, 2017). It clarifies when an air quality assessment should be undertaken, what it should contain, and how impacts should be described and assessed including guidelines for assessing the significance of impacts.

### **IAQM 'Guidance on the Assessment of Dust from Demolition and Construction'**

- 2.4.4 Guidance on the assessment of dust from demolition and construction has been published by the IAQM (IAQM, 2024). The guidance provides a series of matrices to determine the risk magnitude of potential dust sources associated with construction activities in order to identify appropriate mitigation measures that are defined within further IAQM guidance.

### **Air Quality and Emissions Mitigation Guidance for Sussex**

- 2.4.5 MSDC, as part of the Sussex Air Quality Partnership (SAQP) has produced 'Air quality and emissions mitigation guidance for Sussex' (SAQP, 2021) which was last updated in 2021. The guidance outlines both the requirements for undertaking air quality assessments in the district and provides detail to be included within these air quality assessments.
- 2.4.6 The guidance provides a screening checklist which determines whether the applicant should undertake an air quality assessment and an emissions mitigation assessment.
- 2.4.7 The guidance outlines the use of DEFRA's Emissions Factor Toolkit to estimate transport emissions and advises the assessor to estimate the associated health damage cost using DEFRA's damage cost approach (DEFRA, 2023c; DEFRA, 2023d).
- 2.4.8 The emissions mitigation assessment must be accompanied by an emissions mitigation statement which outlines mitigation measures included within the scheme to offset the damage cost resulting from emissions produced by the development.



## **3 Methodology**

### **3.1 Introduction**

- 3.1.1 The assessment methodology detailed in the following sections has been applied to ascertain the potential impacts of emissions to air in order to identify their significance and compliance with policy and regulatory requirements (outlined in **Section 2** of this Report), and whether or not additional mitigation is required.
- 3.1.2 This assessment first defines the 'study area' and outlines the baseline air quality (for both 'existing' and relevant future year (i.e first year of development occupation) within this study area. The impact of construction and operational activities on existing sensitive receptors located within the study area is then assessed, followed by an assessment of the suitability of the Site for the proposed end-use.

### **3.2 Baseline Air Quality**

- 3.2.1 Any exceedances of the limit values along roads within the study area have been identified using the 2020 NO<sub>2</sub> and PM Projections Data published by DEFRA (DEFRA, 2020). Information on baseline air quality in the study area has been obtained by collating the results of monitoring carried out by MSDC and their LAQM reports to identify potential AQMAs. Background concentrations for the study area have been defined using the national pollution maps published by DEFRA which cover the whole country on a 1x1 km grid (DEFRA, 2024b).

### **3.3 Construction Dust Impacts**

- 3.3.1 During construction, dust from on-site activities and off-site trackout by construction vehicles has the potential to impact on sensitive human receptors within the study area. The main potential impacts are loss of amenity (as a result of dust soiling) and deterioration of human health (as a result of concentrations of PM<sub>10</sub>) and harm to sensitive ecological receptors.
- 3.3.2 The suspension of particles in the air is dependent on surface characteristics, weather conditions and on-site activities. Impacts have the potential to occur when dust generating activities coincide with dry, windy conditions, and where sensitive receptors are located downwind of the dust source(s).
- 3.3.3 Separation distance is also an important factor. Large dust particles (greater than 30 µm), which can be potentially responsible for most dust annoyance, will largely deposit within 100m of sources. Intermediate particles (10-30 µm) can travel 200-500 m. Consequently, significant dust annoyance is usually limited to within a few hundred metres of its source. Smaller particles (less than 10 µm), which are the predominant fraction that can be potentially responsible for human health impacts largely remain airborne. However, the impact on the short-term concentrations of PM<sub>10</sub> occurs over a shorter distance due to the rapid decrease in concentrations with distance from the source due to dispersion.
- 3.3.4 The assessment of the risk of potential construction dust impacts has been undertaken with reference to relevant guidance (IAQM, 2024).

### **Screening Assessment**

- 3.3.5 The first stage of the assessment involves screening to determine if there are sensitive receptors within threshold distances of the activities associated with the construction phase of the Proposed Development; defined as the study area. No further assessment is required if there are no receptors within the study area.
- 3.3.6 The IAQM guidance outlines that an assessment is only required in cases where:



- A 'human receptor' is located within:
  - 250m of the boundary of the Site; or
  - 50m of the route(s) used by construction vehicles on the public highway, up to 250m from the Site entrance(s).
- An 'ecological receptor' is located within:
  - 50m of the boundary of the Site; or
  - 50m of the route(s) used by construction vehicles on the public highway, up to 250m from the Site entrance(s).

### Further Assessment

- 3.3.7 The risk of impacts associated with dust soiling and PM10 caused by the Proposed Development has been determined (following the IAQM guidance) based on the dust emission class (or magnitude) for each activity arising from three activities in the absence of mitigation (earthworks, construction and trackout), the sensitivity of nearby receptors and the overall sensitivity of the area. The dust emission class, receptor sensitivity and the overall sensitivity of the area are determined using the criteria outlined in **Table B-1, Table B-2, Table B-3, Table B-4 and Table B-5 of Appendix B** (based on the IAQM guidance), indicative thresholds and professional judgement. The risk of dust impacts arising is a product of the relationship between the dust emission magnitude and the area sensitivity and is based on the criteria outlined in **Table B-6** (based on the IAQM guidance). The risk of impact is then used to determine the mitigation requirements.
- 3.3.8 The IAQM guidance recommends that no assessment of the significance of effects is made without mitigation in place, as mitigation is assumed to be secured by planning conditions, legal requirements or required by regulations.
- 3.3.9 With appropriate mitigation in place, the IAQM guidance indicates that the residual effect dust emissions associated with the construction can be classified as being 'not significant'.

### 3.4 Construction Road Traffic Emission Impacts

- 3.4.1 The potential for a significant overall effect on existing sensitive receptors within the study area as a result of emissions from construction traffic generated by the Proposed Development has been determined qualitatively, taking into consideration the screening criteria outlined in the EPUK / IAQM guidance (Environmental Protection UK and the Institute of Air Quality Management (EPUK / IAQM), 2017) (see **Appendix C**) the anticipated routing of the generated traffic and the anticipated duration of impacts associated with the generated traffic.

### 3.5 Construction Non-Road Mobile Machinery Emission Impacts

- 3.5.1 The impacts of emissions associated with NRMM during the construction phase of Proposed Development has been undertaken qualitatively, taking into account the following:
- Duration of works;
  - Type and number of NRMM to be used on-site;
  - Operating hours of NRMM;
  - Emissions standard to which NRMM comply;
  - Proximity of receptors to NRMM working areas; and



- Existing background pollutant concentrations.

3.5.2 In accordance with DEFRA's LAQM TG.22 (DEFRA, 2025a), with suitable controls and site management in place, emissions associated with NRMM and site traffic are unlikely to have significant impact on local air quality.

### 3.6 Operational Road Traffic Emission Impacts

3.6.1 The potential for significant impacts on existing sensitive receptors within the study area as a result of emissions from traffic generated by the Proposed Development is determined based on the screening criteria outlined in the EPUK / IAQM guidance (see **Appendix C**) which includes consideration of the volume and composition of traffic generated by the Proposed Development and existing local air quality conditions (i.e. the presence of any declared AQMAs).

3.6.2 Information on the Proposed Development's trip generation has been provided by the Project's transport consultants, Stantec.

### 3.7 Site Suitability

3.7.1 An assessment to determine whether there is a potential for exceedances of the relevant NAQOs at sensitive locations within the Proposed Development has been undertaken qualitatively, taking into account local monitoring, estimated background concentrations, the layout of the Proposed Development and the proximity of worst-case sensitive locations within the Proposed Development to nearby sources of emissions (i.e. the local road network).

### 3.8 Consideration of PM<sub>2.5</sub>

3.8.1 A qualitative assessment has also been undertaken in accordance with the PM<sub>2.5</sub> Target: Interim Planning Guidance (DEFRA, 2024a). The qualitative assessment outlines how exposure to PM<sub>2.5</sub> has been considered when selecting the Site (i.e. site suitability) as well as what actions and/or mitigations have been considered to reduce PM<sub>2.5</sub> exposure for development users and nearby receptors (houses, hospitals, schools, etc.) and to reduce emissions of PM<sub>2.5</sub>/its precursors. The modelled background concentrations published by DEFRA (DEFRA, 2024b) have also been taken into account when considering the likelihood of the PM<sub>2.5</sub> targets being met within the Proposed Development

### 3.9 Air Quality Damage Costs

3.9.1 The emissions mitigation assessment has been carried out in accordance with DEFRA's Air Quality Damage Cost Guidance (DEFRA, 2023c) and uses emissions obtained from the latest DEFRA EFT v13.1 (DEFRA, 2025b)). The damage cost calculation has been carried out in DEFRA's Damage Cost Appraisal Toolkit (DEFRA, 2023d).

3.9.2 The EFT has been run for the key pollutants, nitrogen oxides (NO<sub>x</sub>) and particulates (PM<sub>2.5</sub>). In accordance with the Air Quality and Emissions Mitigation Guidance for Sussex (SAQP, 2021), a vehicle speed of 50 kph (average speed) and a link length of 10 km (NTS UK average) have been used, and the road type has been determined to be urban (not London). 2027 has been used as the emissions factor year as this is the earliest year the Proposed Development could be occupied.

3.9.3 Emissions calculated in the EFT have then been input into DEFRA's Damage Cost Appraisal Toolkit. The source sector in the Toolkit was defined as 'road transport rural', and a five-year appraisal period for 2027-2031 inclusive has been used in the calculation. The central damage cost value for NO<sub>x</sub> and PM<sub>2.5</sub> has then been obtained from the Toolkit.

3.9.4 Following calculation of the appropriate damage cost, the cost of the mitigation measures proposed as part of the Development have been identified and compared against the mitigation cost in **Section 6.2** of this Report.



## **4 Baseline Environment**

### **4.1 Site Context**

- 4.1.1 The Site is comprised of two parcels of land within the existing Heathy Wood residential scheme, northeast of the M23 Junction 10. The Site is adjacent to Worsell Drive and is largely currently surrounded by residential plots which have been constructed within the Heathy Wood development. To the east and the west of the Site there are designated areas of ancient woodland, and there are green spaces and woodland to the south.

### **4.2 Study Area**

- 4.2.1 For the construction dust risk assessment, the study area (based on IAQM, 2024 guidance) is defined as comprising the area up to 250m from the site boundary and 50m from the route used by construction vehicles (up to 250m from the site entrance).
- 4.2.2 For the construction phase road traffic emission assessment, the study area (based on the EPUK / IAQM, 2017 guidance) includes all roads (and adjacent properties) predicted to exceed the screening criteria outlined in **Appendix C**.
- 4.2.3 For the operational phase road traffic emission assessment, the study area (based on EPUK / IAQM, 2017 guidance) includes the Site, all roads (and adjacent properties) within 250m of the site boundary and any other roads (and adjacent properties) predicted to exceed the screening criteria outlined in **Appendix C**.

### **4.3 Ambient Air Quality**

#### **Limit Values**

- 4.3.1 The study area is not within a zone which contains any predicted or measured exceedances of a limit value either in the existing year (2023) or in any future years.

#### **LAQM**

- 4.3.2 MSDC has investigated air quality within its area as part of its responsibilities under the LAQM regime. MSDC does not have any AQMAs within their administrative area; the former Stonepound Crossroads AQMA at Hassocks, previously located approximately 23.5 km south of the Site, was revoked in December 2024 due to continued compliance with the NAQOs.
- 4.3.3 The Site is not located within an AQMA, and the closest AQMA to the Site is Crawley Borough Council's (CBC) AQMA. This AQMA encompasses a number of arterial roads through the town of Crawley and is located approximately 650m southwest of the Site at its closest point on A2011 Crawley Avenue.

#### **Local Monitoring Data**

##### NO<sub>2</sub>

- 4.3.4 Both MSDC and neighbouring CBC carry out monitoring at automatic monitoring stations, the nearest of which, CBC's site CA2, is located approximately 2.4 km northwest of the Site. Both Councils deploy NO<sub>2</sub> diffusion tubes at a number of locations, including eleven locations within close proximity to roads where traffic associated with the Proposed Development is predicted to travel. 2019-2024 monitoring results for these monitoring locations are shown in **Table 4-1**, and their locations are shown in **Figure 4-1** below. Whilst 2020 and 2021 monitoring results have been included in **Table 4-1**, it should be noted that these are not considered to be representative of trends in pollutant concentrations, due to the impact of COVID-19 restrictions on travel behaviours during these years.



## Air Quality Assessment

### Land Parcels adjacent to Worsell Drive, Copthorne

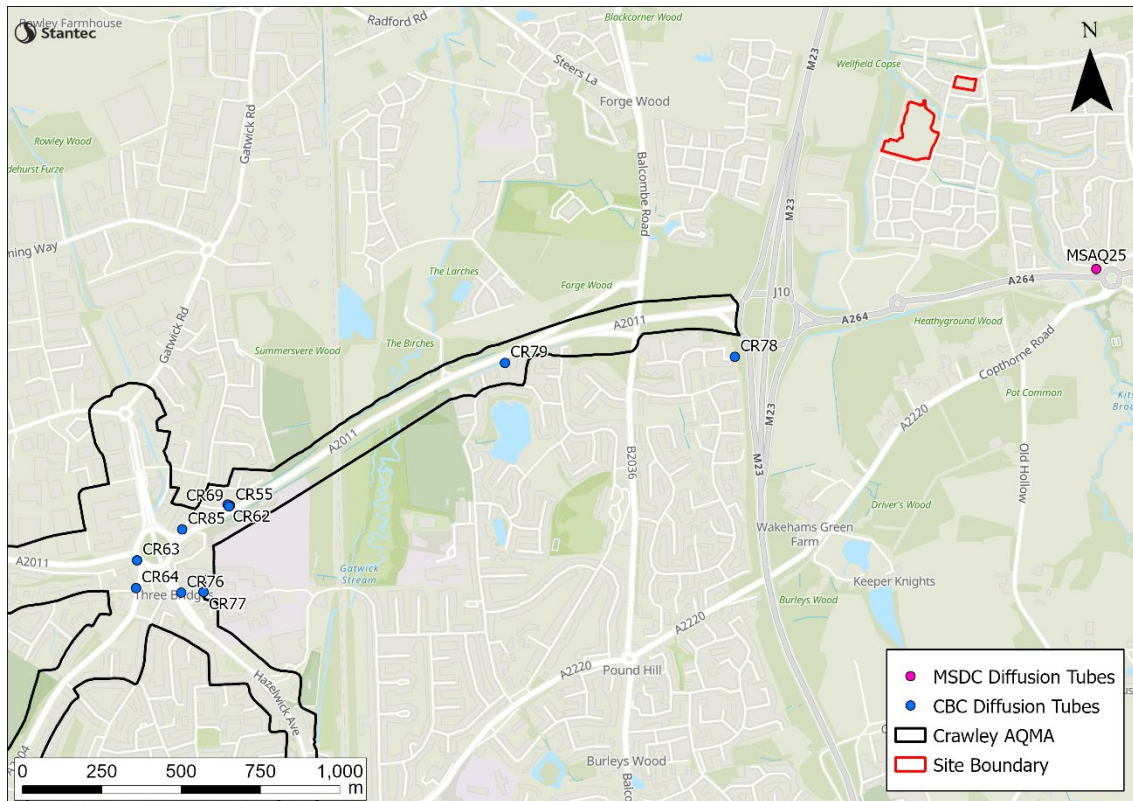


Figure 4-1: Monitoring Locations in the Vicinity of the Site. Contains OS Data © Crown Copyright and Database rights 2025. Contains data from OS Zoomstack.

Table 4-1 Measured Annual Mean NO<sub>2</sub> Concentrations 2019 – 2024

| Site ID                                | Site Type        | Within AQMA | Annual Mean (µg/m³) |      |      |      |      |      |
|----------------------------------------|------------------|-------------|---------------------|------|------|------|------|------|
|                                        |                  |             | 2019                | 2020 | 2021 | 2022 | 2023 | 2024 |
| Mid Sussex District Council            |                  |             |                     |      |      |      |      |      |
| MSAQ25                                 | Kerbside         | Yes         | 26.8                | 18.4 | 18.8 | 20.6 | 18.2 | 17.7 |
| Crawley Borough Council                |                  |             |                     |      |      |      |      |      |
| CR55 – Tinsley Close Fence (11)        | Roadside         | Yes         | 42                  | 36   | 35   | 37   | 30   | 27.0 |
| CR62 – Tinsley Close (10)              | Urban Background | Yes         | 40                  | 34   | 34   | 36   | 29   | 27.8 |
| CR63 – Woodfield Lodge (Roundabout)    | Roadside         | Yes         | 49                  | 42   | 42   | 45   | 35   | 32.8 |
| CR64 – Woodfield Lodge (Northgate Ave) | Roadside         | Yes         | 38                  | 30   | 31   | 31   | 26   | 24.2 |
| CR69 – Tinsley Close Facade (11)       | Urban Background | Yes         | 44                  | 36   | 36   | 37   | 32   | 29.7 |
| CR76 – Hazelwick Court                 | Roadside         | Yes         | 35                  | 28   | 31   | 29   | 24   | 21.5 |



| Site ID                     | Site Type        | Within AQMA | Annual Mean ( $\mu\text{g}/\text{m}^3$ ) |      |      |      |      |      |
|-----------------------------|------------------|-------------|------------------------------------------|------|------|------|------|------|
|                             |                  |             | 2019                                     | 2020 | 2021 | 2022 | 2023 | 2024 |
| CR77 – Hazelwick Ave (Bays) | Roadside         | Yes         | 35                                       | 28   | 31   | 31   | 25   | 22.0 |
| CR78 – Ferndown             | Urban Background | No          | 22                                       | 17   | 19   | 19   | 14   | 12.5 |
| CR79 – St Hildas Close      | Urban Background | Yes         | 25                                       | 20   | 21   | 21   | 17   | 14.4 |
| CR85 – Tinsley Lane Flats   | Urban Background | Yes         | 30                                       | 31   | 28   | 30   | 24   | 21.2 |
| <b>NAQO</b>                 |                  |             | <b>40</b>                                |      |      |      |      |      |

Exceedances of the NAQO are highlighted in bold.

2019 – 2023 data taken from the MSDC Air Quality Annual Status Report for 2024 (MSDC, 2024), MSDC Air Quality Annual Status Report for 2025 (MSDC, 2025), the CBC Air Quality Annual Status Report for 2024 (CBC, 2024) and the CBC Air Quality Annual Status Report for 2025 (CBC, 2025).

- 4.3.5 Measured concentrations at the closest monitoring location to the Site, MSDC's site MSAQ25, which is located approximately 650m southeast of the Site at Erica Way, have been well below the annual mean NAQO over the past six years. Measured concentrations at all other monitoring locations close to the Site were below the annual mean NAQO in 2024, and all but one monitoring location have been below the NAQO since 2019. The exception to this is CBC's site CR63, located approximately 2.7 km southwest of the Site at Woodfield Lodge, which exceeded the NAQO between 2019 and 2022.
- 4.3.6 Furthermore, measured concentrations at all diffusion tube monitoring sites are below  $60 \mu\text{g}/\text{m}^3$ , indicating that it is unlikely that any exceedances of the 1-hour mean NAQO have occurred.
- 4.3.7 There is a generally decreasing trend in concentrations over time, which is in accordance with national trends (Air Quality Consultants Ltd., 2022).

#### PM<sub>10</sub> and PM<sub>2.5</sub>

- 4.3.8 Neither MSDC or CBC undertake PM<sub>10</sub> or PM<sub>2.5</sub> monitoring within close proximity to the Site.

## **4.4 Predicted Background Concentrations**

- 4.4.1 Estimated background concentrations for the Site have been obtained from the latest 2021-based national maps provided by DEFRA (DEFRA, 2024b). The DEFRA background concentrations for the Site are provided in **Table 4-2**.
- 4.4.2 The background concentrations are all well below the relevant NAQOs both in the 'existing' year and all future years. Furthermore, PM<sub>2.5</sub> concentrations are below the target value for PM<sub>2.5</sub>.

Table 4-2 Estimated Annual Mean Background Concentrations

| Year                       | Location (X, Y) | Annual Mean ( $\mu\text{g}/\text{m}^3$ ) |                  |                   |
|----------------------------|-----------------|------------------------------------------|------------------|-------------------|
|                            |                 | NO <sub>2</sub>                          | PM <sub>10</sub> | PM <sub>2.5</sub> |
| 2024                       | 530500, 139500  | 12.8                                     | 11.8             | 6.7               |
| 2027                       | 530500, 139500  | 11.6                                     | 11.6             | 6.5               |
| <b>NAQO / Target Value</b> |                 | <b>40</b>                                | <b>40</b>        | <b>20 / 10</b>    |



## 5 Predicted Impacts

### 5.1 Construction Dust Impacts

#### Screening Assessment

- 5.1.1 There are a number of existing sensitive human receptors (residential properties) located within 250m of the site boundary and within 50m of the routes that will be used by construction vehicles. As such, further assessment of the risk of dust soiling and PM<sub>10</sub> emissions is required.
- 5.1.2 There are two sensitive ecological receptors located within 50m of the site boundary or within 50m of the routes used by construction vehicles on the public highway. The closest designated ecological site to the Proposed Development, Wellfield Copse Ancient Woodland, is located 15m from the site boundary. As such, further assessment of the risk of ecological impacts as a result of dust soiling is required.

#### Further Assessment

##### Dust Emission Magnitude

- 5.1.3 The dust emissions magnitude of earthworks and construction activities and as a result of trackout have been determined in **Table 5-1** below based the criteria shown in **Table B-1, Appendix B**.

Table 5-1 Dust Emissions Magnitudes

| Activity     | Magnitude      | Justification                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|--------------|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Demolition   | Not Applicable | No demolition is proposed on-site and therefore this activity has not been considered further in this assessment.                                                                                                                                                                                                                                                                                                                                                                        |
| Earthworks   | Medium         | Proposed earthworks activities comprise clearance of vegetation, soil preparation and landscaping across an area between 18,000m <sup>2</sup> and 110,000m <sup>2</sup> . The soil at the Site is largely classified as loamy and clayey soils with impeded drainage (Cranfield University, 2024) which are considered to be moderately dusty, particularly during periods of dry weather. Based on this, the dust emission magnitude of earthworks activities is judged to be 'medium'. |
| Construction | Medium         | The total building volume to be constructed is expected to be between 12,000m <sup>3</sup> and 75,000m <sup>3</sup> . Construction materials will comprise a mixture of masonry material including those with a high potential for dust release, such as concrete, as well as those with a lower dust potential such as metals and timber. Based on this, the dust emission magnitude of construction activities is judged to be 'medium'.                                               |
| Trackout     | Medium         | The number of HDVs that will exit the Site will vary depending upon the processes occurring at any one time. There are unlikely to be more than 50 outward HDV movements in any one day. Due to the nature of the Site, it is not considered likely that there would be an unpaved road over 100m in length comprising moderately dusty surface material. Based on this, the dust emission magnitude of trackout is judged to be 'medium'.                                               |

##### Area Sensitivity

- 5.1.4 The area sensitivity to dust soiling and human health impacts has been determined based on the criteria shown in **Table B-3, Table B-4, Table B-5, Appendix B**. The IAQM construction band criteria used to determine the sensitivity of the local area is shown in **Figure 5-1**.



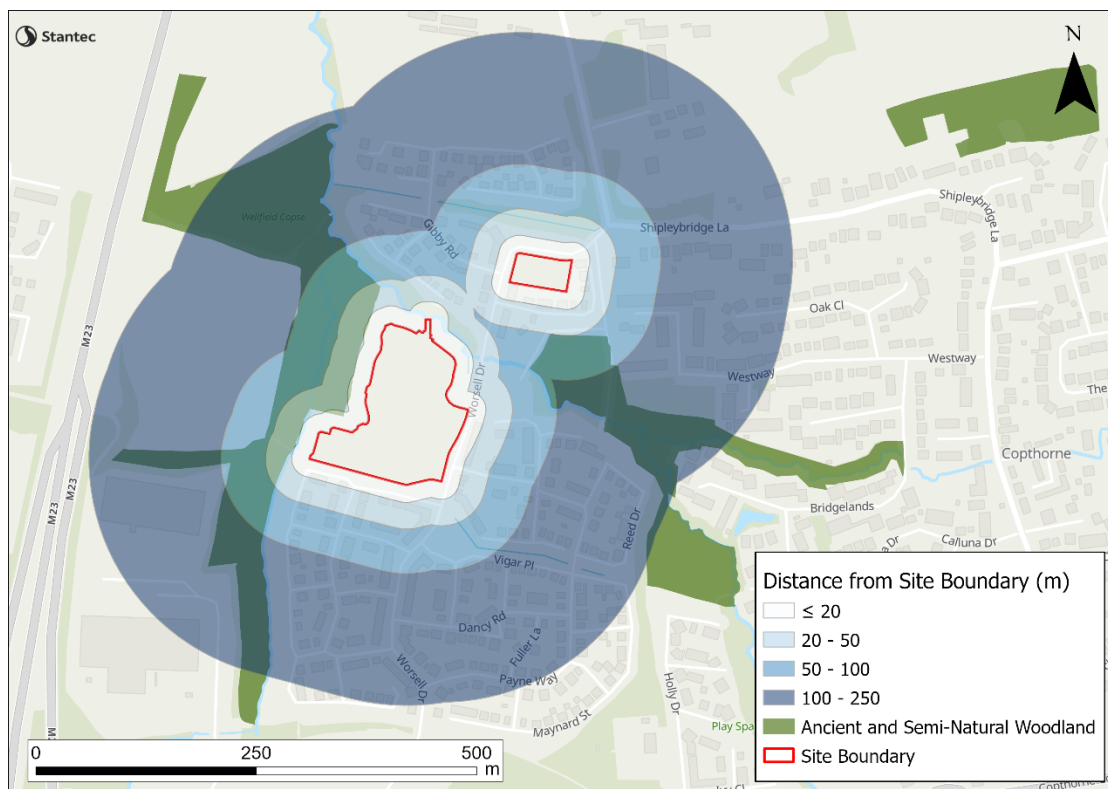


Figure 5-1: IAQM Construction Dust band Criteria from the Site boundary. Contains OS Data © Crown Copyright and Database rights 2025. Contains data from OS Zoomstack.

- 5.1.5 Residential properties are classed as being 'high sensitivity' receptors to dust soiling, based on the IAQM guidance (IAQM, 2024) (see **Table B-3, Appendix B**). There are over ten residential properties located within 20m of the site boundary. As such, the sensitivity of the area surrounding the Site to dust soiling is judged to be 'high'.
- 5.1.6 The IAQM guidance indicates that potential impacts of trackout should be considered for sensitive receptors within 50m of the route used by construction vehicles within a distance of up to 250m from the site entrance. As the construction traffic routing is currently unknown, the worst-case assumption has been made that all main roads may potentially be used by HDVs leaving the entrance of the Site. There are over ten residential properties located within 20m of roads extending up to 250m of the Site. As such, the sensitivity to dust soiling of the area surrounding roads along which material may be tracked is judged to be 'high'.
- 5.1.7 The IAQM also defines residential properties as being 'high sensitivity' receptors to human health impacts (see **Table B-4, Appendix B**). PM<sub>10</sub> concentrations at existing residential properties within the study area are anticipated to be similar to the DEFRA predicted 2024 background PM<sub>10</sub> concentrations at the Site (i.e. 11.8 µg/m<sup>3</sup>). Based on the predicted existing PM<sub>10</sub> concentrations and the number of sensitive receptors within 20m of the site boundary and roads along which material may be tracked, the sensitivity to human health impacts of the areas surrounding the Site and the area surrounding roads along which material may be tracked are judged to be 'low'.
- 5.1.8 Ancient woodland with potentially dust sensitive features are classed as being 'medium sensitivity' receptors to dust deposition, based on the IAQM guidance (IAQM, 2024) (see **Table B-5, Appendix B**). There are two areas of ancient woodland, Bridgelands Shaw ancient woodland and Wellfield Copse ancient woodland, located within 20m of the site boundary. Based on the above, the sensitivity of the area surrounding the Site to ecological impacts is judged to be 'medium'.

- 5.1.9 Neither area of ancient woodland is located within 50m of roads along which material could be tracked. Therefore, the sensitivity to ecological impacts of the area surrounding roads along which material may be tracked is judged to be 'low'.

### Risk of Impacts

- 5.1.10 The risk of construction dust impacts, without mitigation, have been defined based on the criteria shown in **Table B-6, Appendix B** and are presented in **Table 5-2**.

Table 5-2 Risk of Construction Dust Impacts without Mitigation

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

## **5.2 Construction Road Traffic Emission Impacts**

- 5.2.1 At present, detailed information regarding the construction methodology for the Proposed Development, specific activities and traffic movements is not available. However, a CEMP will outline measures to control and minimise the risk of adverse effects from construction activities. The CEMP will be submitted to MSDC for their approval. The CEMP will consider Heavy Goods Vehicles (HGV) and other construction traffic movements, including details of routing and times of day of movements. HGV access will be prevented or minimised, where possible, on traffic sensitive roads, residential streets, congested roads or unsuitable junctions.
- 5.2.2 Vehicle movements associated with access and construction will vary through the construction programme, with short periods of peak HGV movements associated with the delivery of materials during the construction phase. However, when the HGV movements are averaged over a full year period (Annual Average Daily Traffic - AADT), these will be significantly lower than peak movements. Together with the implementation of the CEMP, the impacts of emissions associated with construction road traffic on local air quality are considered to be temporary and 'not significant'.

## **5.3 Construction Non-Road Mobile Machinery Emission Impacts**

- 5.3.1 Construction activities could take place within 20m of existing sensitive receptors. Predicted DEFRA background concentrations at the Site are well below the NAQOs for all pollutants.
- 5.3.2 In accordance with Part 4 of the IAQM construction dust guidance, all Non-Road Mobile Machinery (NRMM) will need to adhere to the NRMM emissions standards for NO<sub>2</sub> and PM<sub>10</sub> outlined in European Directive 2016/1628 (European Parliament, Council of the European Union, 2016).
- 5.3.3 Considering the above, the impacts of emissions associated with NRMM during the construction phase of the Proposed Development are considered to be 'not significant'.

## **5.4 Operational Phase Road Traffic Emission Impacts**

- 5.4.1 Projected traffic generation has been provided by the Project's Transport Consultants, Stantec. The Proposed Development is predicted to generate a total of 404 AADT, with 2 AADT being HDVs, during the operational phase. This is below the EPUK / IAQM screening criteria for road traffic impacts outside an AQMA (see **Appendix C**).



- 5.4.2 Under the outline application for the wider Land West of Copthorne site (Planning Reference 13/01427/OUTES), 42% of vehicle trips associated with the wider development were assumed to travel west of the M23 Junction 10, which is where CBC's Crawley AQMA is located. Applying this same traffic distribution to vehicle trips associated with the Proposed Development results in 170 AADT, including one HDV, being expected to pass through the Crawley AQMA on A2011 Crawley Avenue. The estimated increase in road traffic resulting from the Proposed Development therefore exceeds the EPUK / IAQM screening criteria of 100 AADT within an AQMA.
- 5.4.3 Further review of air quality monitoring data and predicted pollutant concentrations from previous planning applications has therefore been undertaken to determine whether there is a possibility of significant air quality effects arising on local air quality within the Crawley AQMA.
- 5.4.4 An air quality assessment was prepared by Stantec UK Ltd (Stantec UK Limited, 2021) to support a planning application for a B8 storage and distribution development on a parcel of land within the wider Land West of Copthorne site (Planning Reference: DM/21/3805; for St Modwen Homes Logistics – now Indurent). This application was submitted to MSDC in 2021 and approved in 2022. The air quality assessment for the consented B8 development included dispersion modelling of the air quality impacts along A2011 Crawley Avenue, within the Crawley AQMA. This assessment predicted that concentrations at all receptors within the Crawley AQMA were below the NAQOs in 2019 and 2026, with the highest predicted NO<sub>2</sub> concentration in 2026 (the anticipated opening year of the Proposed Development) being 21.2 µg/m<sup>3</sup>. The consented B8 development was predicted to increase traffic flows on A2011 Crawley Avenue by 449 AADT; the predicted impacts of road traffic emissions associated with the consented B8 development were predicted to be 'negligible' at all modelled receptor locations, including those within the Crawley AQMA. Therefore, it is considered that the impacts associated with the Proposed Development which results in an increase in road traffic of 170 AADT on A2011 Crawley Avenue would also be 'negligible'.
- 5.4.5 Furthermore, measured NO<sub>2</sub> concentrations within the Crawley AQMA along A2011 Crawley Avenue are well below the annual mean NAQO, ranging from 17 µg/m<sup>3</sup> to 32 µg/m<sup>3</sup> at monitoring locations between the Gatwick Road roundabout and Junction 10 of the M23.
- 5.4.6 Based on the above, it is considered that whilst the additional road traffic resulting from the Proposed Development slightly exceeds the EPUK / IAQM screening criteria along A2011 Crawley Avenue within the Crawley AQMA, it is considered unlikely that the additional road traffic resulting from the Proposed Development would result in any exceedances of the NAQOs. Therefore, the impacts of operational traffic generated by the Proposed Development on existing sensitive receptors within the study area is considered to be 'not significant'.

## **5.5 Site Suitability**

- 5.5.1 The Site is not located within or near to an AQMA. The closest monitoring data and estimated background concentrations of NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> in the area indicate that concentrations within the Site are likely to be well below the relevant NAQOs.
- 5.5.2 The M23 is located approximately 250m west, and A246 is located approximately 400m south of the Site. The distances between these main sources of road traffic emissions are such that air quality within the Site is unlikely to be significantly impacted.
- 5.5.3 Based on the above, air quality within the Site is considered to be acceptable for the proposed residential end-use, without the need for further mitigation.

## **5.6 Consideration of PM<sub>2.5</sub>**

- 5.6.1 In terms of how PM<sub>2.5</sub> has influenced the selection of the Site, the DEFRA estimated background PM<sub>2.5</sub> concentration at the Site in the existing year (2024) is 6.7 µg/m<sup>3</sup> and in the anticipated opening year (2027) is 6.5 µg/m<sup>3</sup>. The PM<sub>2.5</sub> concentrations are therefore well below the 2040 annual mean concentration target of 10 µg/m<sup>3</sup>.



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- 5.6.2 Given the proposed end use of the Site being residential, with no centralised combustion-based energy centre there are considered to be no significant sources of PM<sub>2.5</sub> emissions or precursors from the Proposed Development.

### **5.7 Air Quality Damage Cost Calculation**

- 5.7.1 The Proposed Development is predicted to generate 404 AADT, with two (0.5% of the total trip generation) being HDVs.
- 5.7.2 The estimated 'central present value' damage cost is £5,592 for 0.22 tonnes/year of NO<sub>x</sub> and £4,312 for 0.03 tonnes/year of PM<sub>2.5</sub>; a combined damage cost of £9,904.



## 6 Mitigation

### 6.1 Construction

- 6.1.1 The following standard mitigation measures from the IAQM guidance (IAQM, 2024) are recommended, taking into account the outcomes of the construction dust risk assessment (presented in **Table 5-2**). These mitigation measures will be imposed by way of a planning condition.

Table 6-1 Construction Phase Mitigation Measures

| Category                           | Mitigation Measure                                                                                                                                                                                                                                                                                                                                                                                 |
|------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Communications                     | Develop and implement a stakeholder communications plan that includes community engagement before work commences on site.                                                                                                                                                                                                                                                                          |
|                                    | 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.                                                                                                                                                                                                              |
|                                    | Display the head or regional office contact information.                                                                                                                                                                                                                                                                                                                                           |
| Management                         | Develop and implement a Dust Management Plan (DMP), which may include measures to control other emissions, approved by the Local Authority. The DMP may include monitoring of dust deposition, dust flux, real time PM <sub>10</sub> continuous monitoring and/or visual inspections.                                                                                                              |
|                                    | Record all dust and air quality complaints, identify cause(s) and take measures to reduce emissions in a timely manner, and record the measures taken.                                                                                                                                                                                                                                             |
|                                    | Make the complaints log available to the local authority when asked.                                                                                                                                                                                                                                                                                                                               |
|                                    | Record any exceptional incidents that cause dust and/or air emissions, either on- of off-site, and the action taken to resolve the situation in the log book.                                                                                                                                                                                                                                      |
| Monitoring                         | Undertake daily on-site and off-site inspections, 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 100m of the site boundary, with cleaning to be provided if necessary. |
|                                    | 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.                                                                                                                                                                                                                          |
|                                    | 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.                                                                                                                                                             |
|                                    | Agree dust deposition, dust flux, or real-time PM <sub>10</sub> continuous monitoring locations with the local authority. Where possible, commence baseline monitoring at least three months before work on a phase commences.                                                                                                                                                                     |
| 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.                                                                                                                                                                                                                                                                             |
|                                    | Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site.                                                                                                                                                                                                                                                                  |
|                                    | Fully enclose site or specific operations where there is a high potential for dust productions and the site is active for an extensive period.                                                                                                                                                                                                                                                     |
|                                    | Avoid site runoff of water or mud.                                                                                                                                                                                                                                                                                                                                                                 |
|                                    | Keep site fencing, barriers and scaffolding clean using wet methods.                                                                                                                                                                                                                                                                                                                               |
|                                    | 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.                                                                                                                                                                                                                   |
|                                    | Cover, seed or fence stockpiles to prevent wind whipping.                                                                                                                                                                                                                                                                                                                                          |
| Operating vehicle/machinery        | Ensure all vehicles switch off engines when stationary – no idling vehicles.                                                                                                                                                                                                                                                                                                                       |
|                                    | Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable.                                                                                                                                                                                                                                                                     |



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| Category               | Mitigation Measure                                                                                                                                                                                                                                                                                                                                            |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| and sustainable travel | 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). |
|                        | Implement a Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking and car sharing).                                                                                                                                                                                                                                 |
| 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.                                                                                                                                                  |
|                        | Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate.                                                                                                                                                                                             |
|                        | Use enclosed chutes and conveyors and covered skips.                                                                                                                                                                                                                                                                                                          |
|                        | Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate.                                                                                                                                                                                      |
|                        | 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.                                                                                                                                                                                                                                                                                                                |
| Earthworks             | Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable.                                                                                                                                                                                                                                                        |
|                        | Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable.                                                                                                                                                                                                                                    |
|                        | Only remove the cover in small areas during work and not all at once.                                                                                                                                                                                                                                                                                         |
| Construction           | Avoid scabbling (roughening of concrete surfaces) if possible.                                                                                                                                                                                                                                                                                                |
|                        | 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.                                                                                                                                 |
|                        | Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery.                                                                                                                                                |
|                        | For smaller supplies of fine powder materials ensure bags are sealed after use and stored appropriately to prevent dust.                                                                                                                                                                                                                                      |
| Trackout               | Use water assisted dust sweeper(s) on the site access and local roads, to remove, as necessary, any material trackout out of the site. This may require the sweeper being continuously in use.                                                                                                                                                                |
|                        | Avoid dry sweeping of large areas.                                                                                                                                                                                                                                                                                                                            |
|                        | Ensure vehicles entering and leaving the site are covered to prevent escape of materials during transport.                                                                                                                                                                                                                                                    |
|                        | Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable.                                                                                                                                                                                                                                   |
|                        | Record all inspections of haul routes and any subsequent action in a site log book.                                                                                                                                                                                                                                                                           |
|                        | Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsers and regularly cleaned.                                                                                                                                                                                                     |
|                        | Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).                                                                                                                                                                                                             |
|                        | 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.                                                                                                                                                                                                              |
|                        | Access gates to be located at least 10m from receptors where possible.                                                                                                                                                                                                                                                                                        |



### 6.2 Operation

- 6.2.1 In accordance with the Sussex Air Quality Partnership Guidance (SAQP, 2021), a mitigation statement outlining the air quality damage cost and details of the mitigation proposed to offset the damage cost is required to be provided as part of the air quality assessment.
- 6.2.2 The estimated damage cost associated with the Proposed Development is £9,904.
- 6.2.3 The wider Land West of Copthorne development (Planning Reference: 13/04127/OUTES) has provided sustainable travel infrastructure, as well as sustainable travel information through its implemented Travel Plans. This sustainable travel infrastructure includes a number of improved footways and cycleways connecting the Land West of Copthorne development, and the Proposed Development, to the wider network, as well as providing bus infrastructure within the Land West of Copthorne site itself. Travel information and vouchers are currently available to residents, and this will extend to the Proposed Development, along with other measures contained within the Travel Plans for the Land West of Copthorne development. The cost of these mitigation measures exceeds the damage cost associated with the Proposed Development emissions.

### 6.3 Mitigation of PM<sub>2.5</sub> Emissions and Exposure

- 6.3.1 The above measures will also contribute towards reducing PM<sub>2.5</sub> emissions associated with the Proposed Development through reducing car trips associated with the Development and encouraging the use of active and sustainable transport modes.
- 6.3.2 The Site is located more than 250m from the M23 and 400m from the A246 therefore mitigating the risk of exposure of PM<sub>2.5</sub> from road traffic. Furthermore, green infrastructure has been incorporated throughout the Site including tree planting which acts as a buffer between residential properties and Worsell Drive. Proposed residential properties will be provided with either gas or electric heating (i.e. no solid fuel fireplaces or stoves) to prevent domestic combustion-based PM<sub>2.5</sub> emissions.



## **7 Summary and Conclusions**

- 7.1.1 The air quality impacts associated with the Proposed Development on Land Parcels off Worsell Drive, Copthorne, located within the boundary of MSDC have been assessed.
- 7.1.2 The closest AQMA to the Site is CBC's Crawley AQMA, which is located approximately 650m west of the Site.
- 7.1.3 The construction works have the potential to create dust. During construction it is recommended that in accordance with the IAQM guidance a package of mitigation measures is put in place to minimise the risk of elevated PM<sub>10</sub> concentrations and dust nuisance in the surrounding area. With mitigation in place the construction impacts are judged as being 'not significant'.
- 7.1.4 The increase in road traffic resulting from the Proposed Development is 404 AADT, with two HDV trips per day. This is below the EPUK / IAQM screening criteria outside an AQMA, and therefore the impacts of operational road traffic resulting from the Proposed Development outside an AQMA can be considered 'not significant'.
- 7.1.5 Within the Crawley AQMA, approximately 650m west of the Site, the increase in traffic flows resulting from the Proposed Development is predicted to slightly exceed the EPUK / IAQM screening criteria. However, taking into account measured and predicted NO<sub>2</sub> concentrations within the AQMA along A2011 Crawley Avenue, the impacts of the Proposed Development are expected to be 'negligible' and therefore 'not significant'.
- 7.1.6 Mitigation measures to offset the air quality damage cost of the Proposed Development are presented in **Section 6.2** of this Report. It is considered that the mitigation provided within the wider Land West of Copthorne site will also be applied to the Proposed Development and will therefore be sufficient to offset the damage cost associated with the Proposed Development.
- 7.1.7 Overall, the Proposed Development is considered to be in accordance with the requirements of the NPPF, and relevant national and local planning policy and guidance regarding air quality, including the interim PM<sub>2.5</sub> guidance. Therefore, the scheme is considered to be acceptable from the perspective of air quality.



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## Appendix A Glossary

| Abbreviations                       | Meaning                                                                                                                                                                                |
|-------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AADT                                | Annual Average Daily Traffic                                                                                                                                                           |
| AQAP                                | Air Quality Action Plan                                                                                                                                                                |
| AQR                                 | Air Quality Regulations                                                                                                                                                                |
| AQMA                                | Air Quality Management Area                                                                                                                                                            |
| CAZ                                 | Clean Air Zone                                                                                                                                                                         |
| CBC                                 | Crawley Borough Council                                                                                                                                                                |
| CEMP                                | Construction Environmental Management Plan                                                                                                                                             |
| DEFRA                               | Department for Environment, Food and Rural Affairs                                                                                                                                     |
| Diffusion Tube                      | A passive sampler used for collecting NO <sub>2</sub> in the air                                                                                                                       |
| EHO                                 | Environmental Health Officer                                                                                                                                                           |
| EFT                                 | Emission Factor Toolkit                                                                                                                                                                |
| EPUK                                | Environmental Protection UK                                                                                                                                                            |
| HDV                                 | Heavy Duty Vehicle; a vehicle with a gross vehicle weight greater than 3.5 tonnes. Includes Heavy Goods Vehicles and buses                                                             |
| HE                                  | Highways England                                                                                                                                                                       |
| IAQM                                | Institute of Air Quality Management                                                                                                                                                    |
| LAQM                                | Local Air Quality Management                                                                                                                                                           |
| MSDC                                | Mid Sussex District Council                                                                                                                                                            |
| NAQO                                | National Air Quality Objective as set out in the Air Quality Strategy and the Air Quality Regulations                                                                                  |
| NO <sub>2</sub>                     | Nitrogen Dioxide                                                                                                                                                                       |
| NO <sub>x</sub>                     | Oxides of nitrogen generally considered to be nitric oxide and NO <sub>2</sub> . Its main source is from combustion of fossil fuels, including petrol and diesel used in road vehicles |
| NPPF                                | National Planning Policy Framework                                                                                                                                                     |
| PM <sub>10</sub> /PM <sub>2.5</sub> | Small airborne particles less than 10/2.5 µm in diameter                                                                                                                               |
| PPG                                 | Planning Practice Guidance                                                                                                                                                             |
| Receptor                            | A location where the effects of pollution may occur                                                                                                                                    |



## Appendix B IAQM Dust Guidance (2024) Approach

Table B-1 Dust Emission Magnitude Classification

| Activity     | Dust Emission Magnitude                                                                                                                                            |                                                                                                                                                                                 |                                                                                                                                                                                      |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              | Large                                                                                                                                                              | Medium                                                                                                                                                                          | Small                                                                                                                                                                                |
| Demolition   | Total building volume of >75,000 m <sup>3</sup> , potentially dusty construction material, on-site crushing and screening, demolition activities >12m above ground | Total building volume of 12,000 – 75,000 m <sup>3</sup> , potentially dusty construction material, demolition activities 6 – 12m above ground level                             | Total building volume of <12,000 m <sup>3</sup> , construction material with low potential for dust release, demolition activities <6m above ground, demolition during wetter months |
| Earthworks   | Total site area of >110,000 m <sup>2</sup> , potentially dusty soil type, >10 heavy earth moving vehicles active at any one time, formation of bunds >6m in height | Total site area of 18,000 – 110,000 m <sup>2</sup> , moderately dusty soil type, 5 - 10 heavy earth moving vehicles active at any one time, formation of bunds 3 - 6m in height | Total site area of <18,000 m <sup>2</sup> , soil type with large grain size, <5 heavy earth moving vehicles active at any one time, formation of bunds <3m in height                 |
| Construction | Total building volume >75,000 m <sup>3</sup> , on-site concrete batching, sandblasting                                                                             | Total building volume 12,000 - 75,000 m <sup>3</sup> , potentially dusty construction material, on-site concrete batching                                                       | Total building volume <12,000 m <sup>3</sup> , construction material with low potential for dust release                                                                             |
| Trackout     | >50 HDV outwards movements in any one day, potentially dusty surface material, unpaved road length >100 m                                                          | 20 - 50 HDV outwards movements in any one day, moderately dusty surface material, unpaved road length 50 - 100 m                                                                | <20 HDV outwards movements in any one day, surface material with low potential for dust release, unpaved road length <50 m                                                           |

Table B-2 Receptor Sensitivity

| Receptor Sensitivity | Impact                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                      | Dust Soiling                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Health Effects of PM <sub>10</sub>                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Ecological Impacts                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| High                 | <p>An area where:</p> <ul style="list-style-type: none"> <li>Users can reasonably expect enjoyment of a high level of amenity;</li> <li>The appearance, aesthetics of value of their property would be diminished by soiling;</li> <li>The people or property would reasonably be expected to be present continuously, or at least regularly for extended periods, as part of the normal pattern of use of the land.</li> </ul> <p>Examples include dwellings, museums and other culturally important collections, medium and long-term car parks and car showrooms.</p> | <p>Locations where members of the public are exposed over a time period relevant to the air quality objective for PM<sub>10</sub> (in the case of the 24-hour objective, a relevant location would be one where individuals may be exposed for eight hours or more per day).</p> <p>Examples include residential properties. Hospitals, schools and residential care homes should also be considered as having equal sensitivity to residential areas for the purposes of this assessment.</p> | <p>Locations with an international or national designation <i>and</i> the designated features may be affected by dust soiling;<br/>OR</p> <p>Locations where there is a community of particularly dust sensitive species such as vascular species included in the Red Data List for Great Britain.</p> <p>Indicative examples include a SAC designated for acid heathlands or a local site designated for lichens adjacent to the demolition of a large site containing concrete (alkali) buildings.</p> |



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|        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                      |
|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Medium | <p>An area where:</p> <ul style="list-style-type: none"> <li>Users would expect to enjoy of a reasonable level of amenity, but would not reasonably expect to enjoy the same level of amenity as in their home;</li> <li>The appearance, aesthetics of value of their property could be diminished by soiling;</li> <li>The 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.</li> </ul> <p>Examples include parks and places of work.</p>                                  | <p>Locations where people exposed are workers, and exposure is over a time period relevant to the air quality objective for PM<sub>10</sub> (in the case of the 24-hour objective, a relevant location would be one where individuals may be exposed for eight hours or more per day).</p> <p>Examples include office and shop workers, but will generally not include workers occupationally exposed to for PM<sub>10</sub>, as protection is covered by Health and Safety at Work legislation.</p> | <p>Locations where there is a particularly important plant species, where its dust sensitivity is uncertain or unknown; OR</p> <p>Locations with a national designation where the features may be affected by dust deposition.</p> <p>Indicative example is a SSSI with dust sensitive features.</p> |
| Low    | <p>An area where:</p> <ul style="list-style-type: none"> <li>The enjoyment of amenity would not reasonably be expected;</li> <li>Property would not reasonably be expected to be diminished in appearance, aesthetics or value by soiling;</li> <li>There is transient exposure, where the people or property would reasonably be expected to be present only for limited periods of time as part of the normal pattern of use of the land.</li> </ul> <p>Examples include playing fields, farmland (unless commercially sensitive horticultural), footpaths, short-term car parks and roads.</p> | <p>Locations where human exposure is transient.</p> <p>Examples include public footpaths, playing fields, parks and shopping streets.</p>                                                                                                                                                                                                                                                                                                                                                            | <p>Locations with a local designation where the features may be affected by dust deposition.</p> <p>Indicative example is a LNR with dust sensitive features.</p>                                                                                                                                    |

Table B-3 Sensitivity of an Area to Dust Soiling Effects

| Receptor Sensitivity | Number of Receptors | Distance from Source (m) |        |        |      |
|----------------------|---------------------|--------------------------|--------|--------|------|
|                      |                     | <20                      | <50    | <100   | <250 |
| High                 | >100                | High                     | High   | Medium | Low  |
|                      | 10 – 100            | High                     | Medium | Low    | Low  |
|                      | 1 – 10              | Medium                   | Low    | Low    | Low  |
| Medium               | >1                  | Medium                   | Low    | Low    | Low  |
| Low                  | >1                  | Low                      | Low    | Low    | Low  |



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Land Parcels adjacent to Worsell Drive, Copthorne

Table B-4 Sensitivity of an Area to Human Health Impacts

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

Table B-5 Sensitivity of an Area to Ecological Impacts

| Receptor Sensitivity | Distance from Source (m) |             |
|----------------------|--------------------------|-------------|
|                      | <20                      | <50         |
| High                 | High Risk                | Medium Risk |
| Medium               | Medium Risk              | Low Risk    |
| Low                  | Low Risk                 | Low Risk    |

Table B-6 Risk of Dust Impacts Calculation Matrix

| Sensitivity of Area |        | Dust Emission Magnitude |             |                 |
|---------------------|--------|-------------------------|-------------|-----------------|
|                     |        | Large                   | Medium      | Small           |
| Demolition          | High   | High Risk               | Medium Risk | Medium Risk     |
|                     | Medium | High Risk               | Medium Risk | Low Risk        |
|                     | Low    | Medium Risk             | Low Risk    | Negligible Risk |
| Earthworks          | High   | High Risk               | Medium Risk | Low Risk        |
|                     | Medium | Medium Risk             | Medium Risk | Low Risk        |
|                     | Low    | Low Risk                | Low Risk    | Negligible Risk |
| Construction        | High   | High Risk               | Medium Risk | Low Risk        |
|                     | Medium | Medium Risk             | Medium Risk | Low Risk        |
|                     | Low    | Low Risk                | Low Risk    | Negligible Risk |
| Trackout            | High   | High Risk               | Medium Risk | Low Risk        |
|                     | Medium | Medium Risk             | Medium Risk | Low Risk        |
|                     | Low    | Low Risk                | Low Risk    | Negligible Risk |



## Appendix C EPUK IAQM Guidance (2017)

### Screening Criteria

| The Development Will:                                                                   | Indicative Criteria to Proceed to an Air Quality Assessment                                                                                                          |
|-----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cause a significant change in LDV traffic flows on local roads with relevant receptors. | A change of LDV flow of: <ul style="list-style-type: none"> <li>&gt;100 AADT within or adjacent to an AQMA; and</li> <li>&gt;500 AADT elsewhere.</li> </ul>          |
| Cause a significant change in HDV flows on local roads with relevant receptors.         | A change of HDV flow of: <ul style="list-style-type: none"> <li>&gt;25 AADT within or adjacent to an AQMA; and</li> <li>&gt;100 AADT elsewhere.</li> </ul>           |
| Realign roads i.e. changing the proximity of receptors to traffic lanes.                | Where the change is 5m or more and the road is within an AQMA.                                                                                                       |
| Introduce a new junction or remove an existing junction near to relevant receptors.     | Applies to junctions that cause traffic to significantly change vehicle acceleration / deceleration, e.g. traffic lights, or roundabouts.                            |
| Introduce or change a bus station.                                                      | A change of bus flows of: <ul style="list-style-type: none"> <li>&gt;25 AADT within or adjacent to an AQMA; and</li> <li>&gt;100 AADT elsewhere.</li> </ul>          |
| Have an underground car park with extraction system.                                    | The ventilation extract for the car park will be located within 20m of a relevant receptor; and<br>The car park will have >100 movements per day (total in and out). |

The screening criteria presented is amended from Table 6.2 of the EPUK / IAQM guidance (EPUK / IAQM, 2017). Only the screening criteria relevant to changes in transport (including both traffic and the transport network) are outlined.

