

# **Air Quality Assessment**

Loddon Garden Village /  
Thames Valley Science Park  
Link Road (LGV / TVSP Link  
Road)

**The University of Reading**

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## Executive Summary

This report details the air quality assessment undertaken as part of the application for full planning permission for the construction of a Spine Road between the Thames Valley Science Park (Application Ref: 232995) and Loddon Garden Village (Application Ref: 252498) to support delivery of Local Plan Update Policy SS13, landscaping, surface water attenuation and other associated works (hereafter referred to as the proposed development). The proposed development is located within the administrative area of Wokingham Borough Council (WBC). WBC has recently revoked an Air Quality Management Area (AQMA) adjacent to the application site (previously referred to as the M4 AQMA).

This Air Quality Assessment, undertaken to accompany the planning application, considers the air quality impacts from the construction phase.

The assessment has been undertaken based upon appropriate information on the Proposed Development provided by The University of Reading and its project team. In undertaking this assessment, RPS experts have exercised professional skills and judgement to the best of their abilities and have given professional opinions that are objective, reliable and backed with scientific rigour. These professional responsibilities are in accordance with the code of professional conduct set by the Institution of Environmental Sciences for members of the Institute of Air Quality Management (IAQM).

For the construction phase, the most important consideration is dust. Without appropriate mitigation, dust could cause temporary soiling of surfaces, particularly windows, cars and laundry. The mitigation measures provided within this report should ensure that the risk of adverse dust effects is reduced to a level categorised as 'not significant'.

RPS understands that all operational impacts associated with vehicles using the proposed access road will be assessed as part of a future and separate planning application for the Kew Herbarium. Therefore, this assessment focuses solely on the construction impacts of the proposed development.

It is understood that proposed pumping station will be situated at a distance well over 20m from the nearest habitable building. This accords with Thames Water guidance, Local Practices to Support Code for Adoption Sewerage Pumping Stations (December 2023).

The proposed development does not, in air quality terms, conflict with national or local policies. There are no constraints to the development in the context of air quality.

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# 1 Introduction

- 1.1 This report details the air quality assessment undertaken for the Proposed Development to the northeast of Shinfield. This report details the air quality assessment undertaken as part of the application for full planning permission for the construction of a Spine Road between the Thames Valley Science Park (Application Ref: 232995) and Loddon Garden Village (Application Ref: 252498) to support delivery of Local Plan Update Policy SS13, landscaping, surface water attenuation and other associated works (hereafter referred to as the proposed development). . The local authority has recently revoked the M4 AQMA adjacent to the application site.
- 1.2 This air quality assessment covers the:
- Construction phase - an evaluation of the temporary effects from fugitive construction dust and construction-vehicle exhaust emissions.
- 1.3 This report begins by setting out the policy and legislative context for the assessment. The methods and criteria used to assess potential air quality effects have then been described. The baseline air quality conditions have been established taking into account Defra estimates, local authority documents and the results of any local monitoring. The results of the assessment of air quality impacts have been presented. A conclusion has been drawn on the significance of the residual construction-phase effects.
- 1.4 RPS understands that all operational impacts associated with vehicles using the proposed access road will be assessed as part of a future and separate planning application for the Kew Herbarium. Therefore, this assessment excludes consideration of operational impacts of the proposed development associated with vehicle exhaust emissions.

## 2 Policy and Legislative Context

### Ambient Air Quality Legislation and National Policy

#### Air Quality Standards Regulations

- 2.1 The Air Quality Standards Regulations 2010 [1], amended by The Environment (Miscellaneous Amendments) (EU Exit) Regulations 2020 [2], sets limit values for ambient air concentrations for the main air pollutants: particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>), nitrogen dioxide (NO<sub>2</sub>), sulphur dioxide (SO<sub>2</sub>), ozone (O<sub>3</sub>), carbon monoxide (CO), lead (Pb) and benzene, certain toxic heavy metals (arsenic, cadmium and nickel) and polycyclic aromatic hydrocarbons (PAHs).
- 2.2 These limit values are legally binding on the Secretary of State. The Government and devolved administrations operate various national ambient air quality monitoring networks to measure compliance and develop plans to meet the limit values.

#### UK Air Quality Strategy

- 2.3 The Environment Act 1995, as amended by the Environment Act 2021, established the requirement for the Government and the devolved administrations to produce a National Air Quality Strategy (AQS) for improving ambient air quality, the first being published in 1997 and having been revised several times since, with the latest published in 2007 [3]. The Strategy sets UK air quality standards\* and objectives# for the pollutants in the Air Quality Standards Regulations plus 1,3-butadiene and recognises that action at national, regional and local level may be needed, depending on the scale and nature of the air quality problem. There is no legal requirement to meet objectives set within the UK AQS except where equivalent limit values are set within the Air Quality Standards Regulations.

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\* Standards are concentrations of pollutants in the atmosphere which can broadly be taken to achieve a certain level of environmental quality. Standards, as the benchmarks for setting objectives, are set purely with regard to scientific evidence and medical evidence on the effects of the particular pollutant on health, or on the wider environment, as minimum or zero risk levels.

# Objectives are policy targets expressed as a concentration that should be achieved, all the time or for a percentage of time, by a certain date.

- 2.4 The 1995 Environment Act also established the UK system of Local Air Quality Management (LAQM), that requires local authorities to go through a process of review and assessment of air quality in their areas, identifying places where objectives are not likely to be met, then declaring Air Quality Management Areas (AQMAs) and putting in place Air Quality Action Plans to improve air quality. These plans also contribute, at local level, to the achievement of the limit values in the Air Quality Standards Regulations.
- 2.5 The limit values and objectives relevant to this assessment are summarised in Table 2.1. Where the limit values and the AQS objectives differ, the more stringent has been used.

**Table 2.1 Summary of Relevant Air Quality Limit Values and Objectives**

| Pollutant                               | Averaging Period | Objectives/ Limit Values                                           | Not to be Exceeded More Than |
|-----------------------------------------|------------------|--------------------------------------------------------------------|------------------------------|
| Nitrogen Dioxide (NO <sub>2</sub> )     | 1 hour           | 200 µg.m <sup>-3</sup>                                             | 18 times per calendar year   |
|                                         | Annual           | 40 µg.m <sup>-3</sup>                                              | -                            |
| Particulate Matter (PM <sub>10</sub> )  | 24 Hour          | 50 µg.m <sup>-3</sup>                                              | 35 times per calendar year   |
|                                         | Annual           | 40 µg.m <sup>-3</sup>                                              | -                            |
| Particulate Matter (PM <sub>2.5</sub> ) | Annual           | 20 µg.m <sup>-3</sup>                                              | -                            |
|                                         |                  | 10 µg.m <sup>-3</sup> to be met by 31 <sup>st</sup> December 2040* | -                            |

\*The Environmental Targets (Fine Particulate Matter) (England) Regulations 2023 sets out an annual-mean PM<sub>2.5</sub> target of 10 µg.m<sup>-3</sup> to be met by the end of 2040. As the proposed opening year of the development is before 2040 this lower target has not been considered further.

- 2.6 On 14 January 2019, Defra published the 'Clean Air Strategy 2019'. The report sets out actions that the Government intends to take to reduce emissions from transport, in the home, from farming and from industry.
- 2.7 In October 2024, Defra published Interim Planning Guidance for PM<sub>2.5</sub> Targets. The interim guidance, which is in place until a finalised guidance document is published, provides Defra's provisional position whereby evidence should be provided, at the planning application stage, that key sources of air pollution have been identified and

appropriate action taken to minimise emissions of PM<sub>2.5</sub>, and its precursors, as far as is reasonably practicable.

- 2.8 Consideration should be given to how exposure to PM<sub>2.5</sub> has been considered in site selection and what mitigation will be implemented to reduce emissions of PM<sub>2.5</sub>, as well as reduce PM<sub>2.5</sub> exposure.

## National Planning Policy

### National Planning Policy Framework

- 2.9 The National Planning Policy Framework (NPPF) [4] is a material consideration for local planning authorities and decision-takers in determining applications. At the heart of the NPPF, is a presumption in favour of sustainable development, subject to caveats where a plan or project affects a habitats site. For determining planning applications, this means approving development proposals if they accord with an up-to-date local development plan, unless material considerations indicate otherwise. If the development plan does not contain relevant policies, or the policies are out of date, then planning permission should be granted unless the application of policies in the NPPF that protect areas or assets of particular importance provides a clear reason for refusing the development, or any adverse impacts would significantly outweigh the benefits.

- 2.10 The NPPF sets out three overarching objectives to achieve sustainable development. The relevant objective in the context of this air quality assessment is:

*“an environmental objective – to protect and enhance our natural, built and historic environment; including making effective use of land, improving biodiversity, using natural resources prudently, minimising waste and pollution and mitigating and adapting to climate change, including moving to a low carbon economy” (Paragraph 8c)*

- 2.11 Under the heading ‘Promoting sustainable transport’, the NPPF states:

*“The planning system should actively manage patterns of growth in support of these objectives. 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. However, opportunities to maximise sustainable transport*

*solutions will vary between urban and rural areas, and this should be taken into account in both plan-making and decision-making.” (Paragraph 110)*

- 2.12 Under the heading ‘Conserving and enhancing the natural environment’, the NPPF states:

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

*...*

*Preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; ...” (Paragraph 187)*

*“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.” (Paragraph 199)*

## **National Planning Practice Guidance**

- 2.13 The National Planning Practice Guidance (NPPG) was issued on-line on 6 March 2014 and is updated periodically by government as a live document. The last major update was on 1 November 2019. The Air Quality section of the NPPG describes the circumstances when air quality, odour and dust can be a planning concern, requiring assessment.

- 2.14 The NPPG advises that whether or not 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. The NPPG states that when deciding whether air quality is relevant to a planning application, considerations could 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; or 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;*

*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;*

*Have a potential adverse effect on biodiversity, especially where it would affect sites designated for their biodiversity value.”*

- 2.15 The NPPG provides advice on how air quality impacts can be mitigated and notes “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.”

## Local Planning Policy

2.16 Wokingham Borough Local Plan Update 2023 – 2040 contains Policy HC6: Air Pollution and Air Quality which states the following:

1. *‘Prevailing air quality and potential impacts upon air quality arising from airborne emissions, dust and odour associated with the construction and operation of a proposal (including vehicular traffic) will be considered when determining planning applications.*
2. *Air Quality Assessments can demonstrate how prevailing air quality and potential impacts upon air quality have been considered and how air quality will be maintained at an acceptable standard through avoidance and mitigation measures. Development proposals are likely to require an Air Quality Assessment where:*
  - a. *The site is located within an Air Quality Management Area (AQMA); or*
  - b. *The site is within proximity to a source of air pollution which could present a significant risk to human health; or*
  - c. *The type of development would mean its occupiers would be particularly sensitive to air pollution, such as schools, health care establishments or housing for older people.’*

## 3 Assessment Methodology

- 3.1 Neither the NPPF nor the NPPG is prescriptive on the methodology for assessing air quality effects or describing significance; practitioners continue to use guidance provided by Defra and non-governmental organisations, including Environmental Protection UK (EPUK) and the Institute of Air Quality Management (IAQM). However, the NPPG does advise that *“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. The scope and content of supporting information is best discussed and agreed between the local planning authority and applicant before it is commissioned.”* It lists a number of areas that might be usefully agreed at the outset.
- 3.2 This air quality assessment covers the elements recommended in the NPPG. The approach is consistent with the EPUK & IAQM Land-Use Planning & Development Control: Planning For Air Quality document [5], the IAQM Guidance on the assessment of dust from demolition and construction [6], and, where relevant, Defra’s Local Air Quality Management Technical Guidance: LAQM.TG22 [7]. It includes the key elements listed below:
- assessment of the existing air quality in the study area (existing baseline), using official government estimates from Defra, publicly available air quality monitoring data for the area, and relevant Air Quality Review and Assessment (R&A) documents; and
  - a qualitative assessment of likely construction-phase impacts with mitigation and controls in place.
- 3.3 In line with the guidance set out in the NPPG, the Environmental Health Department at WBC was consulted in relation to the scope and methodology for this assessment. No response was received.
- 3.4 Air quality guidance advises that the organisation engaged in assessing the overall risks should hold relevant qualifications and/or extensive experience in undertaking air quality assessments. The RPS air quality team members involved at various stages of this assessment have professional affiliations that include Member of the Institute of Air

Quality Management and Member of the Institution of Environmental Sciences and have the required academic qualifications for these professional bodies.

## Summary of Key Pollutants Considered

- 3.5 For the construction phase of the Proposed Development the key pollutant is dust, covering both the PM<sub>10</sub> fraction that is suspended in the air that can be breathed, and the deposited dust that has fallen out of the air onto surfaces and which can potentially cause temporary annoyance effects.
- 3.6 Regarding exhaust emissions from construction-related vehicles (contractors' vehicles and Heavy Goods Vehicles (HGVs), diggers, and other diesel-powered vehicles), these are unlikely to have a significant impact on local air quality [6] except for large, long-term construction sites: the EPUK & IAQM Land-Use Planning & Development Control: Planning For Air Quality document [5] indicates that air quality assessments should include developments increasing annual average daily Heavy Duty Vehicle (HDV) traffic flows by more than 25 within or adjacent to an AQMA and more than 100 elsewhere. The results of the Highways and Access assessment indicates that the aforementioned EPUK & IAQM thresholds are not expected to be exceeded for any individual road during the construction phase of this project; therefore, construction-vehicle exhaust emissions have not been assessed specifically.

## Construction Phase - Methodology

- 3.7 Dust is the generic term used to describe particulate matter in the size range 1-75 µm in diameter [8]. Particles greater than 75 µm in diameter are termed grit rather than dust. Dusts can contain a wide range of particles of different sizes. The normal fate of suspended (i.e. airborne) dust is deposition. The rate of deposition depends largely on the size of the particle and its density; together these influence the aerodynamic and gravitational effects that determine the distance it travels and how long it stays suspended in the air before it settles out onto a surface. In addition, some particles may agglomerate to become fewer, larger particles; whilst others react chemically.
- 3.8 The effects of dust are linked to particle size and two main categories are usually considered:

- PM<sub>10</sub> particles, those up to 10 µm in diameter, remain suspended in the air for long periods and are small enough to be breathed in and so can potentially impact on health; and
- Dust, generally considered to be particles larger than 10 µm which fall out of the air quite quickly and can soil surfaces (e.g. a car, window sill, laundry). Additionally, dust can potentially have adverse effects on vegetation and fauna at sensitive habitat sites.

- 3.9 The IAQM Guidance on the assessment of dust from demolition and construction sets out 250 m as the distance from the site boundary and 50 m from the site traffic route(s) up to 250 m of the entrance, within which there could potentially be nuisance dust and PM<sub>10</sub> effects on human receptors. For sensitive ecological receptors, the corresponding distances are 50 m in both cases. (In this particular application, there are no ecological receptors within the distances and ecological effects have been scoped out). These distances are set to be deliberately conservative.
- 3.10 Concentration-based limit values and objectives have been set for the PM<sub>10</sub> suspended particle fraction, but no statutory or official numerical air quality criterion for dust annoyance has been set at a UK, European or World Health Organisation (WHO) level. Construction dust assessments have tended to be risk based, focusing on the appropriate measures to be used to keep dust impacts at an acceptable level.
- 3.11 The IAQM dust guidance aims to estimate the impacts of both PM<sub>10</sub> and dust through a risk-based assessment procedure. The IAQM dust guidance document states: *“The magnitude of impacts depend on the mitigation measures adopted. Therefore the emphasis in this document is on classifying the risk of dust impacts from a site, which will then allow mitigation measures commensurate with that risk to be identified.”*
- 3.12 The IAQM dust guidance provides a methodological framework, but notes that professional judgement is required to assess effects: *“This is necessary, because the diverse range of projects that are likely to be subject to dust impact assessment means that it is not possible to be prescriptive as to how to assess the impacts. Also a wide range of factors affect the amount of dust that may arise, and these are not readily quantified.”*

- 3.13 Consistent with the recommendations in the IAQM dust guidance, a risk-based assessment has been undertaken for the development, using the well-established source-pathway-receptor approach:
- The dust impact (the change in dust levels attributable to the development activity) at a particular receptor will depend on the magnitude of the dust source and the effectiveness of the pathway (i.e. the route through the air) from source to receptor.
  - The effects of the dust are the results of these changes in dust levels on the exposed receptors, for example annoyance or adverse health effects. The effect experienced for a given exposure depends on the sensitivity of the particular receptor to dust. An assessment of the overall dust effect for the area as a whole has been made using professional judgement taking into account both the change in dust levels (as indicated by the Dust Impact Risk for individual receptors) and the absolute dust levels, together with the sensitivities of local receptors and other relevant factors for the area.
- 3.14 The detail of the dust assessment methodology is provided in Appendix A
- 3.15 The dust risk categories that have been determined for each of the four activities (demolition, earthworks, construction and trackout) have been used to define the appropriate site-specific mitigation measures based on those described in the IAQM dust guidance. The guidance states that provided the mitigation measures are successfully implemented, the resultant effects of the dust exposure will normally be 'not significant'.
- 3.16 This assessment does not consider the air quality impacts of dust from any contaminated land or buildings. If contaminated land is identified on the Application Site, the impacts will be assessed in other technical discipline reports.

## 4 Baseline Air Quality Conditions

### Overview

- 4.1 The background concentration often represents a large proportion of the total pollution concentration, so it is important that the background concentration selected for the assessment is realistic. National Planning Practice Guidance and EPUK & IAQM guidance highlight public information from Defra and local monitoring studies as potential sources of information on background air quality. LAQM.TG22 recommends that Defra mapped concentration estimates are used to inform background concentrations in air quality assessments and states that: *“Where appropriate these data can be supplemented by and compared with local measurements of background, although care should be exercised to ensure that the monitoring site is representative of background air quality”*.
- 4.2 For this assessment, the background air quality has been characterised by drawing on information from the following public sources:
- Defra maps [9], which show estimated pollutant concentrations across the UK in 1 km grid squares; and
  - published results of local authority Review and Assessment (R&A) studies of air quality, including local monitoring and modelling studies.
- 4.3 A detailed description of how the baseline air quality has been derived for this Proposed Development site is summarised in the following paragraphs.

### Review and Assessment Process

- 4.4 The nearby M4 former AQMA was recently revoked by WBC, suggesting that air quality in the area is improving.

## Appropriate Background Concentrations for the Development Site

- 4.5 In the absence of representative PM<sub>10</sub> monitoring for the site, the largest background annual-mean concentration across the study area has been derived from the Defra mapped background concentration estimate.
- 4.6 Table 4.1 summarises the annual-mean background concentration for PM<sub>10</sub> used in this assessment.

**Table 4.1 Summary of Background Annual-Mean (Long-term) Concentrations used in the Assessment**

| Pollutant        | Data Source         | Concentration (µg.m <sup>-3</sup> ) |
|------------------|---------------------|-------------------------------------|
| PM <sub>10</sub> | Defra Mapped (2021) | 14.7                                |

## 5 Assessment of Construction-Phase Air Quality Impacts

### Construction Dust

- 5.1 Whilst no detailed construction phase information is currently available, the type of activities that could cause fugitive dust emissions are: demolition; earthworks; handling and disposal of spoil; wind-blown particulate material from stockpiles; handling of loose construction materials; and movement of vehicles, both on and off site.
- 5.2 The level and distribution of construction dust emissions will vary according to factors such as the type of dust, duration and location of dust-generating activity, weather conditions and the effectiveness of suppression methods.
- 5.3 The main effect of any dust emissions, if not mitigated, could be annoyance due to soiling of surfaces, particularly windows, cars and laundry. However, it is normally possible, by implementation of proper control, to ensure that dust deposition does not give rise to significant adverse effects, although short-term events may occur (for example, due to technical failure or exceptional weather conditions). The following assessment, using the IAQM methodology, predicts the risk of dust impacts and the level of mitigation that is required to control the residual effects to a level that is “not significant”.

### Risk of Dust Impacts

#### Source

- 5.4 There will be no demolition or construction of buildings as part of the development proposals. Therefore, further assessment of demolition and construction activities has been scoped out and the assessment is limited to earthworks.
- 5.5 The site area is between 18,000 and 110,000 m<sup>2</sup>. The dust emission magnitude for the earthworks phase is classified as medium.
- 5.6 The maximum number of outwards movements in any one day is over 50 HDVs. The dust emission magnitude for trackout is therefore classified as large.

**Table 5.1 Dust Emission Magnitude for Earthworks and Trackout**

| Earthworks | Trackout |
|------------|----------|
| Medium     | Large    |

### Pathway and Receptor - Sensitivity of the Area

5.7 All earthworks activities are assumed to occur within the site boundary. As such, receptors at distances within 20 m, 50 m, 100 m and 250 m of the site boundary have been identified and are illustrated in Figure 1. The sensitivity of the area has been classified and the results are provided in Table 5.2 below.

**Table 5.2 Sensitivity of the Surrounding Area for Earthworks**

| Potential Impact | Sensitivity of the Surrounding Area | Reason for Sensitivity Classification                                                                                                                                                                                                                                                                                                                             |
|------------------|-------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Dust Soiling     | Low                                 | No high sensitivity receptors within 20 m of the site boundary. Two medium sensitivity receptors within 50 m of the site boundary (British Museum Archaeological Research Collection and Upperwood Farm).<br><br>1 – 10 medium sensitivity receptors located within 50 m of the site boundary (Table A.4)                                                         |
| Human Health     | Low                                 | British Museum Archaeological Research Collection and Upperwood Farm within 50 m of site boundary.<br><br>Background PM <sub>10</sub> concentrations for the assessment = 14.7 µg.m <sup>-3</sup><br><br>1 – 10 medium sensitivity receptors located within 50 m of the site boundary and PM <sub>10</sub> concentrations below 24 µg.m <sup>-3</sup> (Table A.5) |
| Ecological       | Low                                 | LWS (Loddon Valley South) within site boundary.                                                                                                                                                                                                                                                                                                                   |

5.8 The Dust Emission Magnitude for trackout is classified as medium and trackout may occur on roads up to 250 m from the site. The major routes within 250 m of the site are Leven Road and Abbott Road. The sensitivity of the area has been classified and the results are provided in Table 5.3.

**Table 5.3 Sensitivity of the Surrounding Area for Trackout**

| Potential Impact | Sensitivity of the Surrounding Area | Reason for Sensitivity Classification                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Dust Soiling     | Medium                              | No residential properties aligning Cutbush Lane East. Shinfield Studios and the British Museum Archaeological Research Collection within 20 m of Cutbush Lane East.<br><br>1 – 10 medium sensitivity receptors located within 20 m of the roads (Table A.5)                                                                                                                                                                 |
| Human Health     | Low                                 | No residential properties aligning Cutbush Lane East. Shinfield Studios and the British Museum Archaeological Research Collection within 20 m of Cutbush Lane East.<br><br>Background PM <sub>10</sub> concentrations for the assessment = 14.77 µg.m <sup>-3</sup><br><br>1 – 10 medium sensitivity receptors located within 20 m of the roads and PM <sub>10</sub> concentrations below 24 µg.m <sup>-3</sup> (Table A.6) |
| Ecological       | Low                                 | LWS (Loddon Valley South) within site boundary.                                                                                                                                                                                                                                                                                                                                                                             |

### Overall Dust Risk

5.9 The Dust Emission Magnitude has been considered in the context of the Sensitivity of the Area (Tables A.5 and A.6) to give the Dust Impact Risk. Table 5.4 summarises the Dust Impact Risk for the two activities.

**Table 5.4 Dust Impact Risk for Earthworks and Trackout**

| Source       | Earthworks | Trackout |
|--------------|------------|----------|
| Dust Soiling | Low        | Medium   |
| Human Health | Low        | Low      |
| Risk         | Low        | Medium   |

5.10 Taking the site as a whole, the overall risk is deemed to be medium. The mitigation measures appropriate to a level of risk for the site as a whole and for each of the phases are set out in Section 7.

5.11 Provided this package of mitigation measures is implemented, the residual construction dust effects will not be significant. The IAQM dust guidance states that “*For almost all construction activity, the aim should be to prevent significant effects on receptors*”

*through the use of effective mitigation. Experience shows that this is normally possible. Hence the residual effect will normally be ‘not significant’.*” The IAQM dust guidance recommends that significance is only assigned to the effect after the activities are considered with mitigation in place.

## Construction Traffic

- 5.12 This section of the report summarises the future construction-phase air quality impacts of the key pollutants associated with the development traffic of the proposed scheme during the construction-phase.
- 5.13 The EPUK & IAQM *Land-Use Planning & Development Control: Planning For Air Quality* document [5] provides the following threshold criteria for determining when an air quality assessment should be undertaken for sites outside an AQMA:
- an increase in annual average daily Light Duty Vehicle (LDV) flows by more than 500; or
  - an increase in annual average daily Heavy Duty Vehicle (HDV) flows by more than 100.
- 5.14 The project’s transport consultants, ALP, have estimated the proposals are expected to result in an increase of approximately 64 HDV flows and 26 LDV flows.
- 5.15 The relevant threshold criteria given above are therefore not exceeded. The EPUK & IAQM continues by stating that “If none of the criteria are met then there should be no requirement to carry out an air quality assessment for the impact of the proposed development on the local area, and the impacts can be considered to have insignificant effects.”

## 6 Assessment of Operational-Phase Air Quality Impacts

### Assessment of Air Quality Impacts on Surrounding Area

- 6.1 RPS understands that all operational impacts associated with vehicles using the proposed access road will be assessed as part of a future and separate planning application for the Kew Herbarium. Therefore, this assessment excludes consideration of operational impacts of the proposed development associated with vehicle exhaust emissions.
- 6.2 It is understood that the proposed pumping station will be situated at a distance well over 20m from the nearest habitable building. This accords with Thames Water guidance, Local Practices to Support Code for Adoption Sewerage Pumping Stations (December 2023). Therefore, no further consideration has been made relating to nuisance odour from the pumping station.

## 7 Mitigation

### Mitigation During Construction

- 7.1 The IAQM dust guidance lists mitigation measures for low, medium and high dust risks.
- 7.2 As summarised in Table 5.4, the predicted Dust Impact Risk is classified as Low for Earthworks and Medium for Trackout. The general site measures described as 'highly recommended' for medium risks are listed below. There are no 'highly recommended' measures specific to low risk earthworks.

### 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.

### Dust Management Plan

- Develop and implement a Dust Management Plan (DMP) (which may include measures to control other emissions), approved by the Local Authority. The level of detail will depend on the risk, and should include as a minimum the highly recommended measures in this document. The desirable measures should be included as appropriate for the site. The DMP may include monitoring of dust.

### Site Management

- Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken.
- Make the complaints log available to the local authority when asked.
- Record any exceptional incidents that cause dust and/or air emissions, either on- or off- site, and the action taken to resolve the situation in the log book.

## Monitoring

- Carry out regular dust soiling checks of surfaces such as street furniture, cars and window-sills within 100 m of site boundary.
- 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. Commence baseline monitoring at least three months before work commences on site or, if it a large site, before work on a phase commences. A shorter monitoring period or concurrent upwind and downwind monitoring may be agreed by the local authority. Further guidance is provided by IAQM on monitoring during demolition, earthworks and construction [10].

## 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. Use screening intelligently where possible – e.g. locating site offices between potentially dusty activities and the receptors.
- Erect solid screens or barriers around the site boundary.
- Fully enclose site or specific operations where there is a high potential for dust production and the site is active for an extended period.
- Avoid site runoff of water or mud.
- Keep site fencing, barriers and scaffolding clean.
- 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.
- Depending on the duration that stockpiles will be present and their size - cover, seed, fence or water to prevent wind whipping.

## **Operating Vehicle/machinery and Sustainable Travel**

- 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.
- Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials.

## **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.
- Use enclosed chutes, conveyors and covered skips, where practicable.
- 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.

## **Medium Risk Measures Specific to Trackout**

- Use water-assisted dust sweeper(s) on the access and local roads to remove, as soon as practicable, any material tracked out of the site. This may require the sweeper being continuously in use.
- Avoid dry sweeping of large areas.
- Ensure vehicles entering and leaving sites 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 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).
- 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 10 m from receptors where possible.

## 8 Conclusions

- 8.1 This assessment has considered air quality effects during the construction phase of the proposed development.
- 8.2 Impacts during construction, such as dust generation and plant vehicle emissions, are predicted to be of short duration and only relevant during the construction phase. The results of the risk assessment of construction dust impacts undertaken using the IAQM dust guidance, indicates that before the implementation of mitigation and controls, the risk of dust impacts will be medium to low. Implementation of the highly-recommended mitigation measures described in the IAQM construction dust guidance should reduce the residual dust effects to a level categorised as “*not significant*”. The relevant vehicular trip-generation threshold criteria detailed within the EPUK & IAQM planning guidance is not expected to be exceeded during the construction phase.
- 8.3 RPS understands that all operational impacts associated with vehicles using the proposed access road will be assessed as part of a future and separate planning application for the Kew Herbarium.
- 8.4 It is understood that the proposed pumping station will be situated at a distance well over 20m from the nearest habitable building. This accords with Thames Water guidance, Local Practices to Support Code for Adoption Sewerage Pumping Stations (December 2023).
- 8.5 At the heart of the NPPF is a presumption in favour of sustainable development, subject to caveats where a plan or project affects a habitats site. For determining planning applications, this means approving development proposals if they accord with the local development plan, unless material considerations indicate otherwise. If the development plan is absent, silent or the policies are out of date, then planning permission should be granted unless any adverse impacts would significantly outweigh the benefits, or specific policies in the NPPF indicate development should be restricted.
- 8.6 The NPPG advises that in considering planning permission, the relevant question for air quality is “*will the proposed development (including mitigation) lead to an unacceptable risk from air pollution, prevent sustained compliance with limit values or national objectives for pollutants or fail to comply with the requirements of the Habitats Regulations or other environmental policies and duties, taking into account the presence*”

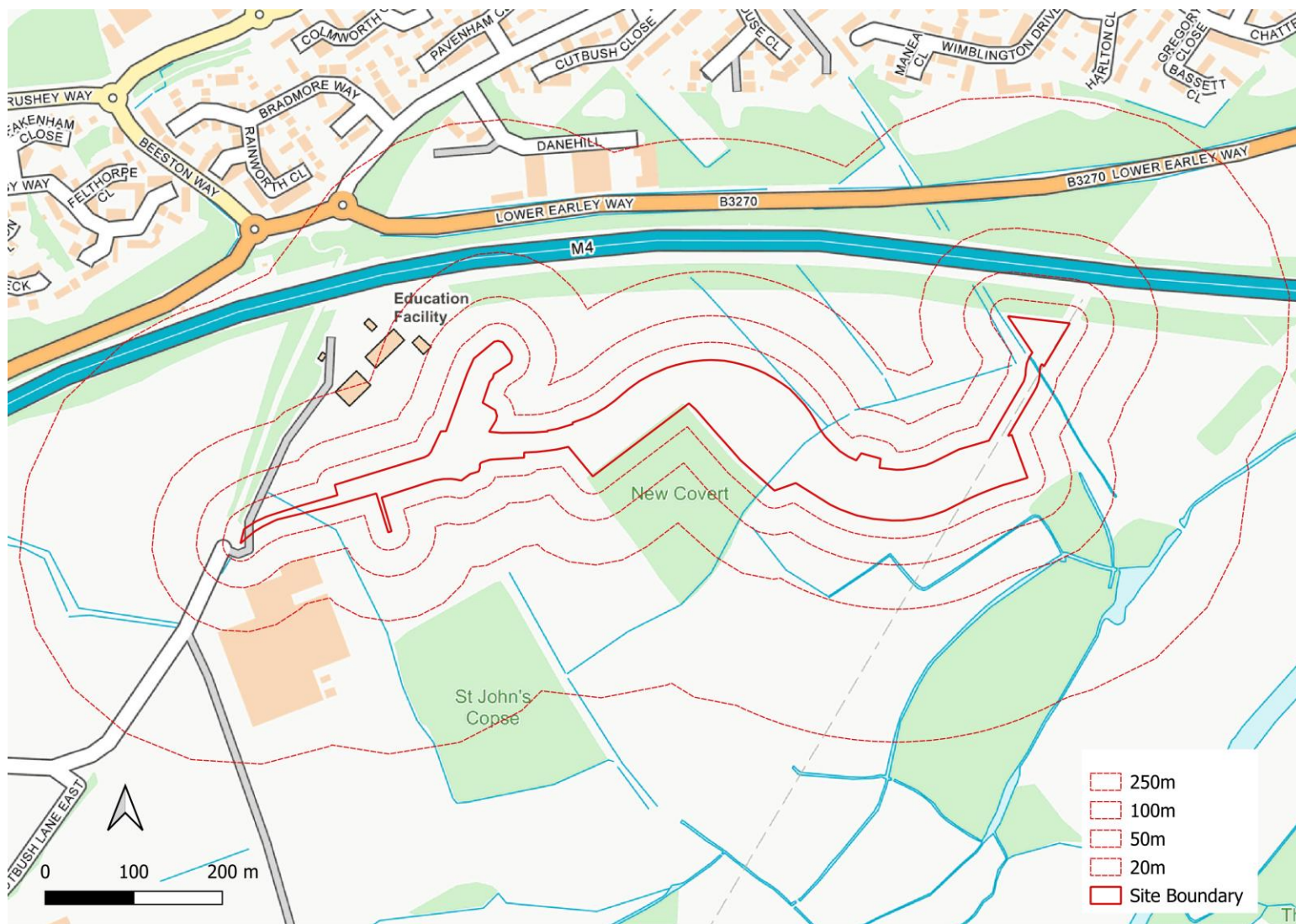
*of Air Quality Management Areas and Clean Air Zones, and the cumulative impacts from individual sites in local areas?”* The proposed development will not.

- 8.7 The proposed development does not, in air quality terms, conflict with national or local policies. There are no constraints to the development in the context of air quality.

## Glossary

|                |                                                                                                                                                                                                                                  |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AADT           | Annual Average Daily Traffic Flow                                                                                                                                                                                                |
| ADMS           | Atmospheric Dispersion Modelling System                                                                                                                                                                                          |
| AQMA           | Air Quality Management Area                                                                                                                                                                                                      |
| AQS            | Air Quality Strategy                                                                                                                                                                                                             |
| Deposited Dust | Dust that has settled out onto a surface after having been suspended in air                                                                                                                                                      |
| DMP            | Dust Management Plan                                                                                                                                                                                                             |
| Dust           | Solid particles suspended in air or settled out onto a surface after having been suspended in air                                                                                                                                |
| Effect         | The consequences of an impact, experienced by a receptor                                                                                                                                                                         |
| EPUK           | Environmental Protection UK                                                                                                                                                                                                      |
| HDV            | Heavy Duty Vehicle                                                                                                                                                                                                               |
| HGV            | Heavy Goods Vehicle                                                                                                                                                                                                              |
| IAQM           | Institute of Air Quality Management                                                                                                                                                                                              |
| Impact         | The change in atmospheric pollutant concentration and/or dust deposition.<br>A scheme can have an 'impact' on atmospheric pollutant concentration but no effect, for instance if there are no receptors to experience the impact |
| NPPF           | National Planning Policy Framework                                                                                                                                                                                               |
| NPPG           | National Planning Practice Guidance                                                                                                                                                                                              |
| R&A            | Review and Assessment                                                                                                                                                                                                            |
| Receptor       | A person, their land or property and ecologically sensitive sites that may be affected by air quality                                                                                                                            |
| Risk           | The likelihood of an adverse event occurring                                                                                                                                                                                     |
| Trackout       | The transport of dust and dirt from the construction/demolition site onto the public road network, where it may be deposited and then re-suspended by vehicles using the network                                                 |

## Figures



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#### Notes

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## Figure 1: Construction Dust Buffers

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## Appendices

## Appendix A: Detailed Construction Dust Assessment Methodology

### Source

- A.1 The IAQM dust guidance gives examples of the dust emission magnitudes for demolition, earthworks and construction activities and trackout. These example dust emission magnitudes are based on the site area, building volume, number of HDV movements generated by the activities and the materials used. These example magnitudes have been combined with details of the period of construction activities to provide the ranking for the source magnitude that is set out in Table A.1.

**Table A.1 Risk Allocation – Source (Dust Emission Magnitude)**

| Features of the Source of Dust Emissions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Dust Emission Magnitude |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
| <p><b>Demolition</b> - building over 75,000 m<sup>3</sup>, potentially dusty construction material (e.g. concrete), on-site crushing and screening, demolition activities &gt; 12 m above ground level.</p> <p><b>Earthworks</b> – total site area over 110,000 m<sup>2</sup>, potentially dusty soil type (e.g. clay), &gt;10 heavy earth moving vehicles active at any one time, formation of bunds &gt; 6 m in height.</p> <p><b>Construction</b> - total building volume over 75,000 m<sup>3</sup>, activities include piling, on-site concrete batching, sand blasting.</p> <p><b>Trackout</b> – over 50 HDV outwards movements in any one day, potentially dusty surface material (e.g. High clay content), unpaved road length &gt; 100 m.</p>                                                                 | Large                   |
| <p><b>Demolition</b> - building between 12,000 to 75,000 m<sup>3</sup>, potentially dusty construction material and demolition activities 6 - 12 m above ground level.</p> <p><b>Earthworks</b> – total site area between 18,000 to 110,000 m<sup>2</sup>, moderately dusty soil type (e.g. silt), 5 – 10 heavy earth moving vehicles active at any one time, formation of bunds 3 - 6 m in height.</p> <p><b>Construction</b> - total building volume between 12,000 and 75,000 m<sup>3</sup>, use of construction materials with high potential for dust release (e.g. concrete), on-site concrete batching.</p> <p><b>Trackout</b> – 20 - 50 HDV outwards movements in any one day, moderately dusty surface material (e.g. High clay content), unpaved road length 50 – 100 m.</p>                                | Medium                  |
| <p><b>Demolition</b> - building less than 12,000 m<sup>3</sup>, construction material with low potential for dust release (e.g. metal cladding or timber), demolition activities &lt; 6 m above ground, demolition during winter months.</p> <p><b>Earthworks</b> – total site area less than 18,000 m<sup>2</sup>. Soil type with large grain size (e.g. sand), &lt; 5 heavy earth moving vehicles active at any one time, formation of bunds &lt; 3 m in height.</p> <p><b>Construction</b> - total building volume below 12,000 m<sup>3</sup>, use of construction materials with low potential for dust release (e.g. metal cladding or timber).</p> <p><b>Trackout</b> – &lt; 20 HDV outwards movements in any one day, surface material with low potential for dust release, unpaved road length &lt; 50 m.</p> | Small                   |

## Pathway and Receptor - Sensitivity of the Area

- A.2 Pathway means the route by which dust and particulate matter may be carried from the source to a receptor. The main factor affecting the pathway effectiveness is the distance from the receptor to the source. The orientation of the receptors to the source compared to the prevailing wind direction is a relevant risk factor for long-duration construction projects; however, short-term construction projects may be limited to a few months when the most frequent wind direction might be quite different, so adverse effects can potentially occur in any direction from the site.
- A.3 As set out in the IAQM dust guidance, a number of attempts have been made to categorise receptors into high, medium and low sensitivity categories; however there is no unified sensitivity classification scheme that covers the quite different potential effects on property, human health and ecological receptors.
- A.4 Table A.2 and Table A.3 sets out the IAQM basis for categorising the sensitivity of people and property to dust and PM10 respectively. Table A.5 sets out the basis for determining the sensitivity of ecological receptors to dust.

**Table A.1 Sensitivities of People and Property Receptors to Dust**

| Receptor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Sensitivity |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| <b>Principles:-</b> <ul style="list-style-type: none"> <li>Users can reasonably expect enjoyment of a high level of amenity; or</li> <li>the appearance, aesthetics or value of their property would be diminished by soiling; and</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> <b>Indicative Examples:-</b> <ul style="list-style-type: none"> <li>Dwellings.</li> <li>Museums and other culturally important collections.</li> <li>Medium and long-term car parks and car showrooms.</li> </ul> | High        |
| <b>Principles:-</b> <ul style="list-style-type: none"> <li>Users would expect to enjoy a reasonable level of amenity, but would not reasonably expect to enjoy the same level of amenity as in their home; or</li> <li>the appearance, aesthetics or value of their property could be diminished by soiling; or</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> <b>Indicative Examples:-</b> <ul style="list-style-type: none"> <li>Parks.</li> <li>Places of work.</li> </ul>                         | Medium      |
| <b>Principles:-</b> <ul style="list-style-type: none"> <li>the enjoyment of amenity would not reasonably be expected; or</li> <li>there is property that would not reasonably be expected to be diminished in appearance, aesthetics or value by soiling; or</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>                                                                                                                                                                              | Low         |

| Receptor                                                                                                                                                                                                     | Sensitivity |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| Indicative Examples:- <ul style="list-style-type: none"> <li>Playing fields, farmland (unless commercially-sensitive horticultural).</li> <li>Footpaths and roads.</li> <li>Short-term car parks.</li> </ul> |             |

**Table A.2 Sensitivities of People and Property Receptors to PM<sub>10</sub>**

| Receptor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Sensitivity |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| Principles:- <ul style="list-style-type: none"> <li>Locations where members of the public are exposed over a time period relevant to the air quality objective (in the case of the 24-hour objective for PM<sub>10</sub>, a relevant location would be one where individuals may be exposed for eight hours or more in a day).</li> </ul> Indicative Examples:- <ul style="list-style-type: none"> <li>Residential properties.</li> <li>Schools, hospitals and residential care homes.</li> </ul>                                                                                                    | High        |
| Principles:- <ul style="list-style-type: none"> <li>Locations where the people exposed are workers and exposure is over a time period relevant to the air quality objective (in the case of the 24-hour objective for PM<sub>10</sub>, a relevant location would be one where individuals may be exposed for eight hours or more in a day).</li> </ul> Indicative Examples:- <ul style="list-style-type: none"> <li>Office and shop workers (but generally excludes workers occupationally exposed to PM<sub>10</sub> as protection is covered by Health and Safety at Work legislation).</li> </ul> | Medium      |
| Principles:- <ul style="list-style-type: none"> <li>Locations where human exposure is transient exposure.</li> </ul> Indicative Examples:- <ul style="list-style-type: none"> <li>Public footpaths.</li> <li>Playing fields, parks.</li> <li>Shopping streets.</li> </ul>                                                                                                                                                                                                                                                                                                                            | Low         |

**Table A.3 Sensitivities of Ecological Receptors to Dust**

| Receptor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Sensitivity |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| Principles:- <ul style="list-style-type: none"> <li>Locations with an international or national designation and the designated features may be affected by dust soiling; or</li> <li>locations where there is a community of a particularly dust sensitive species such as vascular species included in the Red Data List For Great Britain.</li> </ul> Indicative Examples:- <ul style="list-style-type: none"> <li>Special Area of Conservation (SAC) designated for acid heathlands adjacent to the demolition of a large site containing concrete (alkali) buildings or for the presence of lichen.</li> </ul> | High        |

| Receptor                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Sensitivity |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| <b>Principles:-</b> <ul style="list-style-type: none"> <li>Locations where there is a particularly important plant species, where its dust sensitivity is uncertain or unknown; or</li> <li>locations with a national designation where the features may be affected by dust deposition.</li> </ul> <b>Indicative Examples:-</b> <ul style="list-style-type: none"> <li>Site of Special Scientific Interest (SSSI) with dust sensitive features.</li> </ul> | Medium      |
| <b>Principles:-</b> <ul style="list-style-type: none"> <li>Locations with a local designation where the features may be affected by dust deposition.</li> </ul> <b>Indicative Examples:-</b> <ul style="list-style-type: none"> <li>A Local Nature Reserve with dust sensitive features</li> </ul>                                                                                                                                                          | Low         |

A.5 The IAQM methodology combines consideration of the pathway and receptor to derive the 'sensitivity of the area'. Table A.4 and Table A.5 show how the sensitivity of the area has been derived for this assessment.

**Table A.4 Sensitivity of the Area to Dust Soiling Effects on People and Property**

| Receptor Sensitivity | Number of Receptors <sup>a</sup> | Distance from the Source (m) <sup>b</sup> |        |        |      |
|----------------------|----------------------------------|-------------------------------------------|--------|--------|------|
|                      |                                  | <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  |

The sensitivity of the area has been derived for demolition, construction, earthworks and trackout.

a The total number of receptors within the stated distance has been estimated. Only the highest level of area sensitivity from the table has been recorded.

b For trackout, the distances have been measured from the side of the roads used by construction traffic. The impact declines with distance from the site, and it is only necessary to consider trackout impacts up to 50 m from the edge of the road.

**Table A.5 Sensitivity of the Area to Human Health Impacts**

| Receptor Sensitivity | Annual Mean Concentration <sup>a</sup> | PM <sub>10</sub> Number of Receptors <sup>b, c</sup> | Distance from the Source (m) <sup>d</sup> |      |      |        |
|----------------------|----------------------------------------|------------------------------------------------------|-------------------------------------------|------|------|--------|
|                      |                                        |                                                      | <20                                       | <50  | <100 | <250   |
| High                 | > 32 µg.m <sup>-3</sup>                | >100                                                 | High                                      | High | High | Medium |

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

The sensitivity of the area has been derived for demolition, construction, earthworks and trackout.

a This refers to the background concentration derived from the assessment of baseline conditions later in this report. The concentration categories listed in this column apply to England, Wales and Northern Ireland but not to Scotland.

b The total number of receptors within the stated distance has been estimated. Only the highest level of area sensitivity from the table has been recorded.

c For high sensitivity receptors with high occupancy (such as schools or hospitals), the approximate number of occupants has been used to derive an equivalent number of receptors.

d For trackout, the distances should be measured from the side of the roads used by construction traffic. The impact declines with distance from the site, and it is only necessary to consider trackout impacts up to 50 m from the edge of the road.

**Table A.6 Sensitivity of the Area to Ecological Impacts**

| Receptor Sensitivity | Distance from the Source (m) <sup>a</sup> |        |
|----------------------|-------------------------------------------|--------|
|                      | <20                                       | <50    |
| High                 | High                                      | Medium |

| Receptor Sensitivity                                                                                                                                                                                           | Distance from the Source (m) <sup>a</sup> |     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|-----|
|                                                                                                                                                                                                                | <20                                       | <50 |
| Medium                                                                                                                                                                                                         | Medium                                    | Low |
| Low                                                                                                                                                                                                            | Low                                       | Low |
| <p>The sensitivity of the area has been derived for demolition, construction, earthworks and trackout and for each designated site.</p> <p>a Only the highest level of area sensitivity has been recorded.</p> |                                           |     |

A.6 The IAQM dust guidance lists the following additional factors that can potentially affect the sensitivity of the area and, where necessary, professional judgement has been used to adjust the sensitivity allocated to a particular area:

- any history of dust generating activities in the area;
- the likelihood of concurrent dust generating activity on nearby sites;
- any pre-existing screening between the source and the receptors;
- any conclusions drawn from analysing local meteorological data which accurately represent the area; and if relevant the season during which the works will take place;
- any conclusions drawn from local topography;
- duration of the potential impact, as a receptor may become more sensitive over time; and
- any known specific receptor sensitivities which are considered go beyond the classifications given in the table above.

A.7 The matrices in Table A.7, Table A.8, Table A.9 and Table A.10 have been used to assign the risk for each activity to determine the level of mitigation that should be applied. For those cases where the risk category is 'negligible', no mitigation measures are required beyond those mandated by legislation.

**Table A.7 Risk of Dust Impacts – Demolition**

| Sensitivity of Area | Dust Emission Magnitude |             |             |
|---------------------|-------------------------|-------------|-------------|
|                     | Large                   | Medium      | Small       |
| High                | High Risk               | Medium Risk | Medium Risk |
| Medium              | High Risk               | Medium Risk | Low Risk    |
| Low                 | Medium Risk             | Low Risk    | Negligible  |

**Table A.8 Risk of Dust Impacts – Earthworks**

| Sensitivity of Area | Dust Emission Magnitude |             |            |
|---------------------|-------------------------|-------------|------------|
|                     | Large                   | Medium      | Small      |
| High                | High Risk               | Medium Risk | Low Risk   |
| Medium              | Medium Risk             | Medium Risk | Low Risk   |
| Low                 | Low Risk                | Low Risk    | Negligible |

**Table A.9 Risk of Dust Impacts – Construction**

| Sensitivity of Area | Dust Emission Magnitude |             |            |
|---------------------|-------------------------|-------------|------------|
|                     | Large                   | Medium      | Small      |
| High                | High Risk               | Medium Risk | Low Risk   |
| Medium              | Medium Risk             | Medium Risk | Low Risk   |
| Low                 | Low Risk                | Low Risk    | Negligible |

**Table A.10 Risk of Dust Impacts – Trackout**

| Sensitivity of Area | Dust Emission Magnitude |             |            |
|---------------------|-------------------------|-------------|------------|
|                     | Large                   | Medium      | Small      |
| High                | High Risk               | Medium Risk | Low Risk   |
| Medium              | Medium Risk             | Medium Risk | Low Risk   |
| Low                 | Low Risk                | Low Risk    | Negligible |

## References

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- 1 Defra, 2010, The Air Quality Standards Regulations.
- 2 The Environment (Miscellaneous Amendments) (EU Exit) Regulations 2020
- 3 Defra, 2007, The Air Quality Strategy for England, Scotland, Wales and Northern Ireland. Volume 2.
- 4 Communities and Local Government, December 2024, National Planning Policy Framework
- 5 EPUK & IAQM, 2017, Guidance on land-use planning and development control: Planning for air quality
- 6 IAQM, 2024, Guidance on the assessment of dust from demolition and construction
- 7 Defra, 2022, Local Air Quality Management Technical Guidance, 2022 (LAQM.TG22)
- 8 British Standard Institute, 1983, BS 6069:Part 2:1983, ISO 4225-1980 Characterization of air quality. Glossary
- 9 Drawn from Defra Maps at <http://uk-air.defra.gov.uk/data/laqm-background-maps?year=2021>
- 10 IAQM, 2012, Air Quality Monitoring in the Vicinity of Demolition and Construction Sites