



Air Quality Assessment:

Land at Dutton Lane, Eastleigh

Determinari-001 Ltd

27th November 2025



Report Details:

Report Title	Air Quality Assessment
Site	Land at Dutton Lane, Eastleigh
Client	Determinari-001 Ltd
Report No.	H4662 – AQ – v1

Version History:

Version	Date	Notes	Author	Checked
V1	27 th November 2025	Original Issue	Will Totty MSc AMIEnvSc	Nick Hawkins MSc MIOA MIAQM
V2	19 th January 2026	Minor Amendments	Will Totty MSc AMIEnvSc	Nick Hawkins MSc MIOA MIAQM

This report has been prepared by Hawkins Environmental Limited for the sole purpose of assisting in gaining planning consent for the proposed development described in the introduction of this report.

This report has been prepared by Hawkins Environmental Limited with all reasonable skill, care and diligence, and taking account of the manpower and resources devoted to it by agreement with the client. Information reported herein is based on the interpretation of data collected and has been accepted in good faith as being accurate and valid.

This assessment takes into account the prevailing conditions at the time of the report and assesses the impact of the development (if applicable) using data provided to Hawkins Environmental Limited by third parties. The report is designed to assist the developer in refining the designs for the proposed development and to demonstrate to agents of the Local Planning Authority that the proposed development is suited to its location. This should be viewed as a risk assessment and does not infer any guarantee that the site will remain suitable in future, nor that there will not be any complaints either from users of the development or from impacts emanating from the development site itself.

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1. INTRODUCTION

1.1. Overview

Hawkins Environmental Limited has been instructed by Determinari-001 Ltd to undertake an Air Quality Assessment for the proposed redevelopment of land at Dutton Lane, situated in the town of Eastleigh in the Non-Metropolitan Borough of Eastleigh in the Non-Metropolitan County of Hampshire.

During the planning process, it has been identified that the site requires an Air Quality Assessment to determine whether there are constraints on the suitability of the site for use, and to determine whether the proposed development would have an adverse impact on local air quality.

Consequently, this assessment has been conducted in line with the latest guidance in order to determine whether the proposed development achieves compliance with national, regional and local planning policy.

This report primarily assesses concentrations of nitrogen dioxide (NO₂), particulate matter <10 µm diameter (PM₁₀), and particulate matter <2.5 µm diameter (PM_{2.5}). The assessment considers both the constraints that existing air quality may have on the development of the site (site suitability) as well as the impacts of development on local air quality (impact assessment).

This assessment has been undertaken in accordance with the guidance contained within the Institute of Air Quality Management (IAQM) and Environmental Protection UK (EPUK) *Land-Use Planning & Development Control: Planning for Air Quality* (January 2017) and the Department for Environment, Food and Rural Affairs' (Defra) *Local Air Quality Management Technical Guidance (TG22)* (August 2022).

As this is for a retrospective planning application, an assessment of the impact of the demolition and construction phases on local air quality has not been conducted.

A glossary of terms is detailed in **Appendix 1**.

1.2. Site Description

The proposed development site is situated on Dutton Lane in Eastleigh, bound to the south by Bishopstoke Road, to the west by a railway line, to the north by other commercial and light industrial uses and to the east by a terrace of residential properties.

The site currently comprises an open storage and operational facility of seven individual working yards.

The proposed development entails a retrospective planning application for change of use to storage and distribution (B8) in the southern and central portions of the site and general industry/storage and distribution (B2/B8) in the northern part of the site with all associated infrastructure.

The local planning authority is Eastleigh Borough Council.

A location plan of the proposed development site is provided in **Figure 1.1** below.

Figure 1.1: Site Location Plan



2. LEGISLATION, PLANNING POLICY & GUIDANCE

Air quality considerations within the planning system are governed by:

- National Legislation – Acts of Law passed by Parliament, and Regulations created by the Government under powers granted by those Acts, see **Section 2.1**;
- Planning Policy – Documents and guidelines issued by Government bodies that provide a framework for how planning decisions should be made, see **Section 2.2**;
- Best Practice Guidance – Direction on specific air quality issues and methods of assessment published by professional bodies and institutions such as the Institute of Air Quality Management (IAQM) or World Health Organization (WHO), see **Section 2.3**.

2.1. Legislation

Early pieces of air quality legislation in the UK included the *Clean Air Act 1956* and *1968*, which aimed to address the air quality issues associated with rapid industrialisation; and the *Environmental Protection Act 1990*, which further strengthened pollution regulation from industry and gave local councils new enforcement powers.

Today, the legislative framework governing air quality in England is based on the primary legislation of the *Environment Act 1995* and the *Environment Act 2021*; as well as secondary legislation resulting from each act respectively, *The Air Quality Standards Regulations 2010* and *The Environmental Targets (Fine Particulate Matter) (England) Regulations 2023*.

The planning system more broadly is governed by the primary legislation of the *Town and Country Planning Act 1990*. Each of these is discussed in **Sections 2.1.1 to 2.1.5**, below.

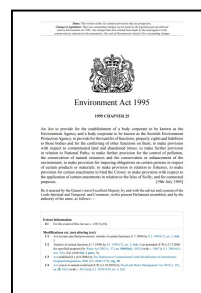
2.1.1. Environment Act 1995

The *Environment Act 1995* is a major piece of primary legislation addressing environmental issues in the UK, including air quality.

The Act established the Environment Agency to regulate pollution, enforce environmental laws, and protect natural resources.

Part IV of the Act focuses on air quality, providing a legal framework for its management and improvement.

Part IV requires the UK government to develop and maintain a *National Air Quality Strategy* (see **Section 2.2.1**) with standards, objectives and measures for improving air quality, and introduced the *Local Air Quality Management (LAQM)* regime (see **Section 2.3.2**), mandating local authorities to monitor and assess air quality in their areas.



2.1.2. Air Quality Standards Regulations 2010

The *Air Quality Standards Regulations 2010* are a piece of secondary legislation under the *Environment Act 1995*, which set pollutant concentration limits to protect human health and the environment.

The Regulations contain legally binding *Limit Values* that must not be exceeded. These are set for individual pollutants (sulphur dioxide, nitrogen dioxide, benzene, lead, PM₁₀, PM_{2.5} and carbon monoxide), specifying a concentration, an averaging time over which it is measured, the number of exceedances allowed per year (if any) and a date by which it must be achieved. Some pollutants have more than one limit value covering different averaging times.

The Regulations also contain *Target Values* for other pollutants (ozone, arsenic, cadmium, nickel, mercury, polycyclic aromatic hydrocarbons), structured similarly, which while not legally binding, must be met where possible without disproportionate costs.

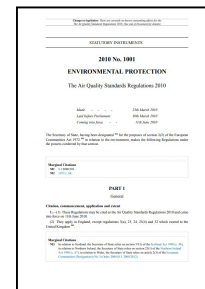
Derived from *Directive 2008/50/EC* (the *Ambient Air Quality and Cleaner Air for Europe Directive*) of the European Parliament, these limits remain in force post-Brexit as retained EU law, ensuring continued protection of air quality.

The UK is bound to these limit values to mitigate harmful effects on health and the environment. The *National Air Quality Objectives* (NAQOs), as presented in the *National Air Quality Strategy* (see **Section 2.2.1**), are largely based on these limit values.

The limit values contained in the *Air Quality Standards Regulations 2010* (and associated NAQOs in the *National Air Quality Strategy*) form the basis of this air quality assessment. The limit values are based on an assessment of the health effects of each pollutant and are therefore a good indicator as to whether air quality in the vicinity of a development may be detrimental to human health. The limit values are shown in **Table 2.1**.

Table 2.1: Air Quality Standards Regulations 2010 – Limit Values

Pollutant	Averaging Period	Limit Value
Sulphur Dioxide (SO ₂)	One Hour	350 µg/m ³ not to be exceeded more than 24 times per calendar year
	One Day	125 µg/m ³ not to be exceeded more than three times per calendar year
Nitrogen Dioxide (NO ₂)	One Hour	200 µg/m ³ not to be exceeded more than 18 times per calendar year
	Calendar Year	40 µg/m ³
Benzene	Calendar Year	5 µg/m ³
Lead	Calendar Year	0.5 µg/m ³
PM ₁₀	One Day	50 µg/m ³ not to be exceeded more than 35 times per calendar year
	Calendar Year	40 µg/m ³



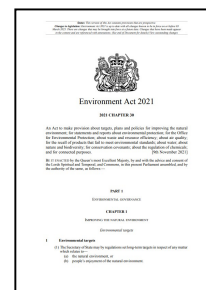
Pollutant	Averaging Period	Limit Value
PM _{2.5}	Calendar Year	20 µg/m ³
Carbon Monoxide	Maximum daily running 8-hour mean	10 mg/m ³

2.1.3. Environment Act 2021

The *Environment Act 2021* is a further significant piece of primary legislation in the UK that formed part of a new legal framework for environmental protection post-Brexit.

The Act made further provisions for air quality, primarily addressing the issue of fine particulate matter by mandating the setting of new targets for PM_{2.5} concentrations.

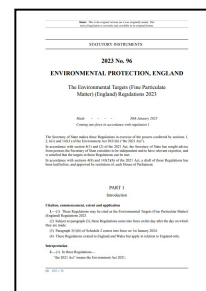
It also refined and strengthened the LAQM regime introduced under the *Environment Act 1995*, provided a legal basis for the introduction of Clean Air Zones, and established the Office for Environmental Protection to protect and improve the environment by holding government and public authorities to account for their environmental policies.



2.1.4. Environmental Targets (Fine Particulate Matter) (England) Regulations 2023

The *Environmental Targets (Fine Particulate Matter) (England) Regulations 2023* are a piece of secondary legislation to protect human health and the environment by setting new legally binding targets on concentrations of PM_{2.5} under the framework set out in the *Environment Act 2021*, in much the same way that the *Environment Act 1995* provided the framework for the *Air Quality Standards Regulations 2010*. The two Targets are:

- Annual mean concentrations of PM_{2.5} to be 10 µg/m³ or lower by 2040.
- Population exposure to PM_{2.5} to be reduced by 35% compared to 2018 levels by 2040.



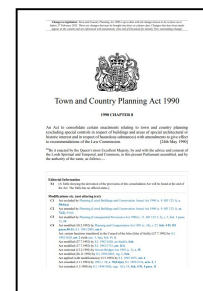
The two targets are designed to work together to drive actions that both reduce concentrations where it is highest and reduce the pollution that everyone in the country experiences.

It should be noted that the meaning of 'Targets' here is different to that in the *Air Quality Standards Regulations 2010*, wherein "target values" have specific meaning. Both PM_{2.5} Targets described in the *Environmental Targets (Fine Particulate Matter) (England) Regulations 2023* as set out above are legally binding in the way that "limit values" are in the 2010 Regulations.

2.1.5. Town and Country Planning Act 1990

The *Town and Country Planning Act 1990* is a piece of primary legislation governing land use and development control in England and Wales. It provides the legal framework for planning permissions, enforcement and permitted development rights. Whilst it does not directly set air quality limits, it allows councils to enforce pollution controls through planning conditions, environmental impact assessments (EIA), and enforcement actions.

The Act sets out permitted development rights which allow certain types of development without planning permission, including small home extensions and conversions of offices to residential properties.



The Act states that the vast majority of development (including building new structures, major extensions or alterations, and change of use class) requires planning permission from the relevant local planning authority (LPA). The LPA must then assess the development proposals against local and national planning policies (see **Section 2.2**), including those which make provisions for air quality, in order to approve or reject the proposals. If a proposal is rejected by the LPA, the applicant can appeal to the national Planning Inspectorate.

Whilst the Act does not focus solely on air quality, it provides legal mechanisms to ensure new developments do not harm the environment and protect air quality. This includes the requirement for large developments to conduct an EIA (under Section 71A), the ability to grant approval subject to planning conditions, such as air quality damage cost calculations (under Section 70), green belt protection (under Section 336), and the ability to issue enforcement notices if a development is causing harm to public health, the environment or local amenity (under Section 172).

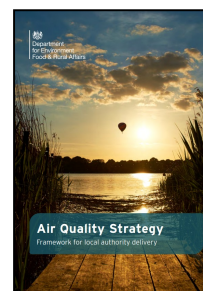
2.2. Planning Policy

National Policies

2.2.1. National Air Quality Strategy (2023)

As per the legislation of Part IV of the *Environment Act 1995*, successive governments have produced, maintained and updated air quality policy in the form of various Air Quality Strategy policy papers.

The original *National Air Quality Strategy 1997* was the first UK-wide strategy to set standards and objectives for major air pollutants. It was replaced by the *Air Quality Strategy for England, Scotland, Wales and Northern Ireland* in 2000 with an addendum in 2003, which tightened several of the objectives and introduced a new one for polycyclic aromatic hydrocarbons. A further update came in 2007 with subsequent revisions in 2011, with new objectives for PM_{2.5}.



In April 2023 the UK Government published a document, *Air Quality Strategy: Framework For Local Authority Delivery*, which supersedes the 2007 Strategy in respect of England only.

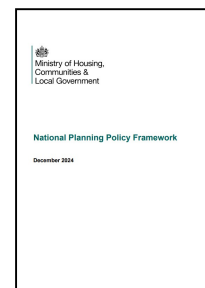
Like its predecessors, *Air Quality Strategy: Framework For Local Authority Delivery* sets out the *National Air Quality Objectives* (NAQOs). The NAQOs currently mirror the legally binding limit values as set out in the *Air*

Quality Standards Regulations 2010, as shown in **Table 2.1**. The NAQOs also currently incorporate the new legally binding PM_{2.5} targets as set out in the *Environmental Targets (Fine Particulate Matter) (England) Regulations 2023*, as discussed in **Section 2.1.4**.

2.2.2. National Planning Policy Framework (2024)

The *National Planning Policy Framework* (NPPF) was first published in March 2012 and has undergone regular revision, with the latest version published in December 2024 in response to the proposed reforms to the planning system under the Starmer ministry.

The NPPF sets out England's planning policies and guidance on their application. It guides LPAs in creating Local Plans, which, along with the NPPF itself, inform planning decisions. These local and neighbourhood plans should address community needs and priorities.



The NPPF notes “*The purpose of the planning system is to contribute to the achievement of sustainable development, including the provision of homes, commercial development, and supporting infrastructure in a sustainable manner*” (para. 7) and that sustainable development should be delivered with three main objectives: economic; social and environmental (para. 8).

The NPPF supports a presumption in favour of development, unless the adverse impacts of that development outweigh the benefits (para. 10).

Specifically referencing air quality, the NPPF states that “*Planning policies and decisions should contribute to and enhance the natural and local environment by... e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality*” (para. 187).

The NPPF also 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*” (para. 199).

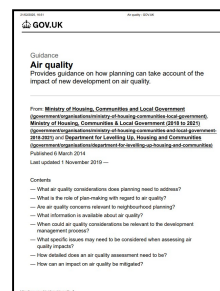
2.2.3. Planning Practice Guidance (2019)

Planning Practice Guidance (PPG) was launched as a series of online guidance documents to support the NPPF, with first Air Quality guidance published on 6th March 2014. It has since undergone regular revision, with the most recent changes in November 2019. It provides guidance on how planning can take account of the impact of new development on air quality.

The air quality PPG notes *"Defra carries out an annual national assessment of air quality using modelling and monitoring to determine compliance with relevant Limit Values"* and *"It is important that the potential impact of new development on air quality is taken into account where the national assessment indicates that relevant limits have been exceeded or are near the limit"*.

The PPG goes on to say that *"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)"*.

With regards to the content of an air quality assessment, the PPG states *"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"*.



2.3. Best Practice Guidance

2.3.1. Land-Use Planning & Development Control: Planning for Air Quality (2017)

Land-Use Planning & Development Control: Planning for Air Quality, jointly published by the IAQM and Environmental Protection UK (EPUK) in May 2015 and updated in January 2017, serves as a comprehensive guide for integrating air quality considerations into the planning system.

Specific guidance is given on undertaking an air quality assessment for planning, including how to assess both the impacts of existing air quality on a new development, or the impacts of new developments on air quality in their area. It also discusses how to determine the significance of the effects arising from such air quality impacts.

Guidance is also given on screening criteria for different types of assessment, the verification of air quality models, identification of appropriate receptors, and appropriate mitigation measures.



2.3.2. Local Air Quality Management Technical Guidance TG22 (2022)

The LAQM process is a framework under which local authorities are required to review and manage air quality in their areas. It is governed by Part IV of the *Environment Act 1995* (see **Section 2.1.1**) and aims to ensure compliance with the NAQOs.

Local authorities are required to regularly review and assess air quality in their areas. If the review indicates that the NAQOs are being exceeded or are likely to be exceeded, local authorities must designate an AQMA. Once an AQMA has been designated, the local authority is required to develop and implement Action Plans that outline measures to improve air quality, with continuing monitoring, evaluation and reporting required.

Although produced for local authorities tasked with managing air quality in their areas, TG22 provides detailed instructions on how to assess air quality using both monitoring data and modelling techniques, and evaluate whether air quality objectives are being met, and is therefore essential guidance for anyone considering air quality impacts within the planning system.



2.3.3. Guidance on the Assessment of Dust from Demolition and Construction (2024)

Published in 2014 and most recently amended in 2024, the IAQM *Guidance on the Assessment of Dust from Demolition and Construction* provides a structured approach to assessing dust risks arising from demolition and construction, and implementing appropriate mitigation measures.

The guidance provides the framework for a qualitative risk assessment of three different dust impacts: disamenity dust soiling, human health do increase PM exposure, and harm to ecological receptors.

The guidance divides activity on construction sites into four categories each of which are considered separately: demolition, earthworks, construction, and trackout. The likely magnitude of dust emission for each activity is combined with the sensitivity of the area (determined by the number of receptors within prescribed distance bands) to determine the risk level from each activity.

Based on the determined risk level, mitigation measures are recommended to be incorporated into a Dust Management Plan which can form part of a broader Construction and Environmental Management Plan. The guidance states that if the recommended mitigation measures are adopted, there will be no overall significant effect.



2.3.4. World Health Organization Air Quality Guidelines (2021)

The *World Health Organisation Air Quality Guidelines* proposes air quality guideline levels for key air pollutants that pose health risks. The guidelines cover a range of pollutants and suggest threshold levels at which health effects are unlikely to occur, based on the latest scientific evidence.

Due to a substantial increase in scientific evidence since 2005 (the publication of the previous guidelines), the World Health Organisation (WHO) significantly lowered its guideline levels for most air pollutants in its 2021 update, such that they are now more



stringent than the legally binding limit values as described in the *Air Quality Standards Regulations 2010* (see **Section 2.1.2**).

Table 2.2 summarises the WHO Guideline levels.

Table 2.2: WHO Air Quality Guideline Levels

Pollutant	Average Period	WHO Guideline Value
Nitrogen Dioxide	One Hour	200 µg/m ³
	One Day	25 µg/m ³
	Calendar Year	10 µg/m ³
PM ₁₀	One Day	45 µg/m ³ (99 th Percentile)
	Calendar Year	15 µg/m ³
PM _{2.5}	One Day	15 µg/m ³ (99 th Percentile)
	Calendar Year	5 µg/m ³

3. ASSESSMENT METHODOLOGY

3.1. Methodology Overview

The assessment of air quality considers several different areas, specifically:

1. Establishing the baseline conditions at the proposed development site. This entails an evaluation of historic air quality data, the most recent published years' worth of which is used to verify an air quality dispersion model for predicting onsite pollutant concentrations at present. See **Section 3.3**.
2. Constraints of existing air quality on the proposed development. This determines the site's suitability for use. The verified baseline model is updated to model the year of first use, incorporating projected traffic growth, changes in emissions factors, and background concentrations as appropriate. Opening year pollutant concentrations are then compared to the relevant air quality objectives.
3. Air quality impacts of the proposed development on local receptors, by means of both emissions from increased traffic and the energy strategy. The future baseline model is updated to reflect these new sources. Impacts are assessed based on both the change caused by the proposed development *and* the existing air quality at a receptor. It is then determined whether any impacts would lead to significant effects, i.e. to health. See **Section 3.4**.
4. Impacts from demolition and construction at local receptors. The risk of dust impacts from demolition and construction are assessed qualitatively in terms of their potential to cause effects in terms of disamenity, health or ecology. If the level of construction traffic is sufficient, the impacts of this may be assessed similarly to operational traffic impacts as described in point 3 above. See **Section 3.5**.
5. Compliance with any local air quality policies as appropriate, for example emissions benchmarking or damage cost analysis.
6. Consideration of ecological impacts. This is typically a screening assessment to identify risks of significant adverse effects on European designated sites (Special Protection Area, Special Area of Conservation, or Ramsar site) that could undermine conservation objectives, therefore requiring further detailed examination through an "Appropriate Assessment" under the Habitats Regulations.

The site-specific scoping assessment in **Section 4.4** determines which areas of assessment are relevant to the proposed development. The main methodologies are discussed in the subsections below, along with a description of the identification of receptors and the determination of effect significance.

3.2. Identification of Receptors

Land-Use Planning & Development Control: Planning for Air Quality (see **Section 2.3.1**) states that receptor locations should be chosen both within a proposed development (site suitability), as well as on roads significantly affected by it (impact assessment), even if distant to it, and particularly if within, AQMAs.

The guidance notes "*These receptors will represent locations where people are likely to be exposed for the appropriate averaging time (dependent on the air quality objective being assessed against)*". This is critical as it identifies that sensitivity to air quality is related to the time spent in a location. For example, annual mean

objectives should be used to assess anywhere a person may be present for sustained periods over a year, for example dwellings. Although users wouldn't be present for the appropriate averaging time, hospitals and schools would also be assessed against annual mean objectives, owing to the higher sensitivity of their users.

Offices and commercial uses would not usually be assessed against annual objectives, given that most users would be healthy adults who would spend less than 25% of the hours in a year there, however assessment against daily or hourly mean objectives would be necessary. Similarly, hotels may not be assessed against annual mean objectives, however hostels, sheltered accommodation and student accommodation would be considered the same as dwellings, as residents could be expected to stay for several months.

3.3. Baseline and Site Suitability Methodology

To determine the baseline conditions, the following is undertaken:

- A review of the most recent Air Quality Annual Status Reports published by the local planning authority (as required under Local Air Quality Management Regime (see **Section 2.3.2**), as submitted to the Department for the Environment, Food and Rural Affairs (Defra);
- Determination of whether the site is situated within a designated Air Quality Management Area (AQMA).
- A review of local air quality monitoring data in the area around the proposed development site;
- A review of the Environment Agency's register of industrial sites under the EC Integrated Pollution Prevention and Control Directive (IPPC) to determine whether industrial sources of air pollution could be affecting the site;
- Review of the list of registered Part A2 and Part B permitted premises under the PPC Regulations to determine whether any other sources of air pollution could be affecting the site;
- If required, predict concentrations of air pollutants at the proposed development site in the baseline year and the future baseline year using the ADMS-Roads Dispersion Model (details of which can be seen in **Appendix 2**, utilising data described in **Appendix 3**).

The assessment of site suitability is based on the 'future baseline' scenario, which is the year of first occupation or operation of the proposed development. It updates the 'baseline' scenario, i.e. that which is based on the most recent full year of published air quality monitoring data that can be used to create a validated model.

The 'future baseline' updates to the dispersion model include predicted changes in traffic flow between the two years, changes in emissions factors (the amount of pollutant emitted per vehicle-km, which improves in future years as older, more polluting vehicles are removed from the fleet and cleaner engine technologies and alternative fuel vehicles are adopted), and changes in regional background concentrations if appropriate.

3.4. Impact Assessment Methodology

To assess the operational impacts of the proposed development, the 'future baseline' scenario as described above is further updated with the increased traffic flows associated with the proposed development. Any polluting plant associated with the proposed development, such as CHP, is also included. Air pollutant

concentrations at nearby sensitive receptors are again modelled using the methodology described in the ADMS-Roads Detailed Dispersion Model (details of which can be seen in **Appendix 2**, utilising data described in **Appendix 3**).

The resulting impacts (the increase in pollutant concentrations at the modelled receptors) are then assigned a descriptor, based on the criteria given in *Land-Use Planning & Development Control: Planning for Air Quality* (see **Section 2.3.1**), which are reproduced in **Table 3.1** below. The impact is defined not only by the change in pollutant concentration experienced at the receptor, but also by the existing air quality at that location.

Table 3.1: Impact Descriptors for Individual Receptors

Long-Term Average Concentration at Receptor in Assessment Year	Change in Concentration Relative to AQAL (Percentage)			
	1	2-5	6-10	>10
75% or less of AQAL	Negligible	Negligible	Slight	Moderate
76-94% of AQAL	Negligible	Slight	Moderate	Moderate
95-102% of AQAL	Slight	Moderate	Moderate	Substantial
103-109% of AQAL	Moderate	Moderate	Substantial	Substantial
110% or more of AQAL	Moderate	Substantial	Substantial	Substantial

Source: Table 6.3 of the IAQM Guidance

The guidance goes on to offer the following explanation (taken from the footnotes of Table 6.3 of the IAQM Guidance):

“AQAL = Air Quality Assessment Level, which may be an air quality objective, EU limit or target value, or an Environment Agency ‘Environmental Assessment Level (EAL)’.

The Table is intended to be used by rounding the change in percentage pollutant concentration to whole numbers, which then makes it clearer which cell the impact falls within. The user is encouraged to treat the numbers with recognition of their likely accuracy and not assume a false level of precision. Changes of 0%, i.e. less than 0.5% will be described as Negligible.

The Table is only designed to be used with annual mean concentrations.

Descriptors for individual receptors only; the overall significance is determined using professional judgement (see Chapter 7). For example, a ‘moderate’ adverse impact at one receptor may not mean that the overall impact has a significant effect. Other factors need to be considered.

When defining the concentration as a percentage of the AQAL, use the ‘without scheme’ concentration where there is a decrease in pollutant concentration and the ‘with scheme;’ concentration for an increase.

The total concentration categories reflect the degree of potential harm by reference to the AQAL value. At exposure less than 75% of this value, i.e. well below, the degree of harm is likely to be small. As the exposure

approaches and exceeds the AQAL, the degree of harm increases. This change naturally becomes more important when the result is an exposure that is approximately equal to, or greater than the AQAL.

It is unwise to ascribe too much accuracy to incremental changes or background concentrations, and this is especially important when total concentrations are close to the AQAL. For a given year in the future, it is impossible to define the new total concentration without recognising the inherent uncertainty, which is why there is a category that has a range around the AQAL, rather than being exactly equal to it."

3.5. Methodology for Determining Demolition and Construction Effects

The assessment of potential dust impacts from demolition and construction is undertaken in accordance with the IAQM's *Guidance on the Assessment of Dust from Demolition and Construction* (see **Section 2.3.3**). The guidance outlines a risk-based, five-step methodology for evaluating the significance of construction related air quality impacts:

1. **Screening:** Determine whether a detailed assessment is required. If no sensitive receptors are located within defined distances of the site boundary or the haul routes to be used by construction traffic, further assessment is not necessary.
2. **Risk Assessment:** Assess the risk of dust impacts. The risk is assessed for each of four activities – demolition, earthworks, construction, and trackout; for three different types of receptor sensitivity – the sensitivity of people and property to dust soiling, the sensitivity of people to the health effects of PM₁₀, and the sensitivity of receptors to ecological effects. This involves:
 - a. Determining the potential dust emission magnitude based on the scale and nature of the works. This is categorised as Large, Medium or Small for each of the four activities described above.
 - b. Evaluating the sensitivity of the surrounding area. This is categorised as High, Medium or Low for each of the three types of sensitivity described above.
 - c. Combining these factors to assign a risk level (negligible, low, medium, or high) for each activity.
3. **Mitigation:** Identify appropriate, site-specific mitigation measures based on the risk levels established in Step 2. Local authority requirements and best practice measures should also be incorporated where relevant.
4. **Residual Effects:** Evaluate the effectiveness of the proposed mitigation and determine the significance of any residual dust impacts.
5. **Reporting:** Present the assessment outcomes, including methodology, risk levels, proposed mitigation, and conclusions, within a dust assessment report.

3.6. Significance Criteria

Land-Use Planning & Development Control: Planning for Air Quality provides a framework to assess significance in air quality assessments. As described in the guidance, the "assessment framework for

describing impacts can be used as a starting point to make a judgement on significance of effect, but there will be other influences that might need to be accounted for. The impact descriptors set out in Table 6.3 [Replicated in Table 3.1 of this chapter] are not, of themselves, a clear and unambiguous guide to reaching a conclusion on significance. These impact descriptors are intended for application at a series of individual receptors. Whilst it may be that there are 'slight', 'moderate' or 'substantial' impacts at one or more receptors, the overall effect may not necessarily be judged as being significant in some circumstances (Paragraph 7.4)".

The Land-Use Planning & Development Control guidance goes on to state that any significance needs to be assessed using a certain amount of professional judgement and should take into account "*the existing and future air quality in the absence of the development; the extent of current and future population exposure to the impacts; and the influence and validity of any assumptions adopted when undertaking the prediction of impacts*" (Paragraph 7.7). For example, for a large development, a major adverse impact on a single dwelling might be considered insignificant; however, a minor impact to 100,000 dwellings might be considered to be highly significant. Furthermore, the absolute level of pollutant concentrations are also important in determining significance; for example, a moderate impact to a small group of dwellings might be considered highly significant if the concentrations of NO₂ were well in excess of the NAQO level, however, that same moderate impact might be considered insignificant if concentrations were well below the NAQO.

4. SCOPING

4.1. Overview

Planning Practice Guidance on Air Quality (see **Section 2.2.3**) states “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”. This is reiterated in *Land-Use Planning & Development Control: Planning for Air Quality* (see **Section 2.3.1**) which provides guidance on screening on whether an air quality assessment is required and what needs to be assessed.

4.2. Impacts of the Local Area on the Development

The IAQM/EPUK Guidance suggests that whether an assessment of the impacts of the local area on the proposed development is required is a matter of judgement, but should take into account:

- “the background and future baseline air quality and whether this will be likely to approach or exceed the values set by air quality objectives;
- the presence and location of Air Quality Management Areas as an indicator of local hotspots where the air quality objectives may be exceeded;
- the presence of a heavily trafficked road, with emissions that could give rise to sufficiently high concentrations of pollutants (in particular NO₂), that would cause unacceptably high exposure for users of the new development; and
- the presence of a source of odour and/or dust that may affect amenity for future occupants of the development.”

4.3. Impacts of the Development on the Local Area

To determine whether an assessment of the impacts of the development on the local environment is required, the IAQM/EPUK Guidance suggests a two-stage approach. The guidance states that “The **first stage** is intended to screen out smaller development and/or developments where impacts can be considered to have insignificant effects. The **second stage** relates to specific details regarding the proposed development and the likelihood of air quality impacts.”

Figure 4.1 reproduces Stage 1 of the IAQM/EPUK Guidance’ two-stage approach. In order to proceed to Stage 2, development needs to meet both one of the criteria in “A”, and one of the criteria in “B”. If the development fails to meet these criteria, then an air quality assessment looking at the impacts of the development on the local area will not be required.

Figure 4.2 reproduces Stage 2 of the IAQM/EPUK Guidance’ two-stage approach. If the development meets the criteria contained within Stage 1, “more specific guidance as to when an air quality assessment is likely to be required to assess the impacts of the proposed development on the local area.” If the development then meets any of the eight criteria in Stage 2, an assessment of the impacts of the proposed development on the surrounding environment will be required.

Figure 4.1: IAQM/EPUK Guidance – Stage 1 Criteria

Criteria to Proceed to Stage 2
A. If any of the following apply: 10 or more residential units or a site area of more than 0.5ha - more than 1,000 m² of floor space for all other uses or a site area greater than 1ha
B. Coupled with any of the following: - the development has more than 10 parking spaces - the development will have a centralised energy facility or other centralised combustion process
Note: Consideration should still be given to the potential impacts of neighbouring sources on the site, even if an assessment of impacts of the development on the surrounding area is screened out.

Figure 4.2: IAQM/EPUK Guidance – Stage 2 Criteria

The development will:	Indicative Criteria to Proceed to an Air Quality Assessment *
1. Cause a significant change in Light Duty Vehicle (LDV) traffic flows on local roads with relevant receptors. (LDV = cars and small vans <3.5t gross vehicle weight).	A change of LDV flows of: - more than 100 AADT within or adjacent to an AQMA - more than 500 AADT elsewhere.
2. Cause a significant change in Heavy Duty Vehicle (HDV) flows on local roads with relevant receptors. (HDV = goods vehicles + buses >3.5t gross vehicle weight).	A change of HDV flows of: - more than 25 AADT within or adjacent to an AQMA - more than 100 AADT elsewhere.
3. 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.
4. Introduce a new junction or remove an existing junction near to relevant receptors.	Applies to junctions that cause traffic to significantly change vehicle accelerate/decelerate, e.g. traffic lights, or roundabouts.
5. Introduce or change a bus station.	Where bus flows will change by: - more than 25 AADT within or adjacent to an AQMA - more than 100 AADT elsewhere.
6. Have an underground car park with extraction system.	The ventilation extract for the car park will be within 20 m of a relevant receptor. Coupled with the car park having more than 100 movements per day (total in and out).
7. Have one or more substantial combustion processes, where there is a risk of impacts at relevant receptors. NB. this includes combustion plant associated with standby emergency generators (typically associated with centralised energy centres) and shipping.	Typically, any combustion plant where the single or combined NO _x emission rate is less than 5 mg/sec ^a is unlikely to give rise to impacts, provided that the emissions are released from a vent or stack in a location and at a height that provides adequate dispersion. In situations where the emissions are released close to buildings with relevant receptors, or where the dispersion of the plume may be adversely affected by the size and/or height of adjacent buildings (including situations where the stack height is lower than the receptor) then consideration will need to be given to potential impacts at much lower emission rates. Conversely, where existing nitrogen dioxide concentrations are low, and where the dispersion conditions are favourable, a much higher emission rate may be acceptable.

* As a guide, the 5 mg/s criterion equates to a 450 kW ultra low NO_x gas boiler or a 30kW CHP unit operating at <95mg/Nm³. Users of this guidance should quantify the NO_x mass emission rate from the proposed plant, based on manufacturers' specifications and operational conditions.

4.4. Site Specific Scoping Assessment

4.4.1. Site Suitability

The proposed development is not located within an Air Quality Management Area and does not introduce new long-term receptors (i.e. residential).

As a workplace, it is considered most appropriate to assess the proposed development against the hourly mean NAQO for NO₂ and 24-hour mean NAQO for PM₁₀ to determine site suitability, as these averaging times are representative of the duration that a typical user (i.e. employee or customer) would be expected to use the proposed development.

Therefore, **an assessment of on-site pollutant concentrations to determine site suitability is required**, however this can be demonstrated without the need for a dispersion model. See **Section 6**.

4.4.2. Impact Assessment

Trip generation data for the planning application has been provided by Andrew Moseley Associates Transport Planning Consultancy, which confirms that the level of vehicle trip generation as a consequence of the proposed development is predicted to be lower than that for the previous consented use of the site.

Stage 2 criteria for trip generation are therefore not met (nor are any of the other Stage 2 criteria, see **Figure 4.2**) and **an assessment of the impacts of the development on local air quality is not required**.

4.4.3. Demolition and Construction

As standard for all new developments, **a construction dust risk assessment has been carried out** in line with the IAQM *Guidance on the Assessment of Dust from Demolition and Construction* (January 2024) to assess impacts during the demolition and construction phase of the proposed development.

5. BASELINE CONDITIONS

5.1. Air Quality Review and Assessment

Under Part IV of the Environment Act (1995), local authorities are required to carry out a review of air quality within their boundaries according to the prescribed LAQM framework (see **Section 2.3.2**). The findings of this review process are published in an Air Quality Annual Status Report.

LAQM requires local authorities to identify areas that fail to achieve compliance with the National Air Quality Objectives (NAQOs). Where compliance is not achieved, local authorities must designate these areas as Air Quality Management Areas (AQMAs) and also prepare an Air Quality Action Plan (AQAP) which must identify measures to achieve compliance with the NAQOs. When reporting shows consistent compliance with the NAQOs, typically for a five year period, an AQMA can be revoked.

The most recent publicly available Annual Status Report published by Eastleigh Borough Council (published in 2025 based on data collected through 2024) indicates that there are currently three AQMAs declared within the Borough/District.

A summary of the AQMAs is presented in **Table 5.1** below.

Table 5.1: Local Air Quality Management Areas

AQMA Name	Description	Date Declared	NAQOs Declared For
Eastleigh AQMA 1	The AQMA encompasses an area extending 30 m to either side of the A335 from the junction of Leigh Road and Bournemouth Road to Wide Lane (north of the roundabout with the M27 spur), and a 15m corridor each side of Woodside Avenue north from the junction with the A335 Leigh Road and Passfield Avenue to the railway bridge, Twyford Road north from the junction with Romsey Road and A335 Station Hill to the junction with St Catherines Road, and the B3037 Bishopstoke Road west from junction with the A335 Station Hill to and including the roundabout with Chickenhall Lane	16/02/2005	NO ₂ annual mean
Hamble Lane Area AQMA	An area incorporating: The B3397 Hamble Lane from its junction with the A3025 Portsmouth Road, north to its junction with the Windhover roundabout; The Windhover roundabout; The A27 from the Windhover roundabout in a south easterly direction to the Borough boundary with a 30m corridor either side	03/07/2006	NO ₂ annual mean
High Street Botley AQMA	The designated area incorporates the A334 from the Borough boundary east of the junction with the B3354, Winchester Street, to its junction with Woodhouse Lane incorporating Broad Oak and a 5m corridor either side of it.	20/06/2011	NO ₂ annual mean

The proposed development is situated adjacent to the Eastleigh AQMA, declared in 2005 for exceedances of the annual mean NAQO for NO₂. Whilst the site itself is not within the AQMA, any traffic generated by the proposed development site would enter the AQMA.

Concentrations of SO₂, Benzene, Lead and CO are not considered to be an issue within the Borough. Consequently, no further consideration is given to these pollutants as it is not considered that they would be of concern at the proposed development site.

5.2. Local Air Quality Monitoring

Eastleigh Borough Council conducts air quality monitoring using three continuous automatic monitoring stations which monitor real-time concentrations of NO₂; one of which also monitors PM₁₀ and PM_{2.5}. Each of these monitoring stations is co-located with a passive diffusion tube which monitors monthly mean concentrations of NO₂. These form part of a wider network of 55 diffusion tube monitoring locations.

Two of the three automatic monitoring stations and six of the 55 diffusion tubes are located at roadside locations within the Eastleigh AQMA in which the proposed development site is also located.

The 2025 Annual Status Report indicates that NO₂ concentrations were below the annual mean NAQO of 40 µg/m³ for 2024 at all 55 monitoring locations, the third consecutive year without an exceedance of the NAQO. The automatic monitoring stations monitored zero hours in excess of 200 µg/m³, indicating compliance with the hourly mean NAQO.

The PM monitoring location was compliant with both the annual mean NAQOs for PM₁₀ and PM_{2.5}, as well as the 24-hour mean NAQO for PM₁₀.

The majority of the monitoring locations are roadside or kerbside locations on main roads and in town centres where pollutant concentrations are predicted to be highest.

5.3. Industrial Emissions

Both the Environment Agency's register of industrial sites under the EC Integrated Pollution Prevention and Control Directive (IPPC) and the Local Authority's list of registered Part A2 and Part B permitted premises under the Pollution, Prevention and Control Act 1999 and the Environmental Permitting (England and Wales) Regulations 2010 have shown that there are no sites within close proximity of the development site that could be affecting air pollutant levels.

5.4. Estimated Background Concentrations

The data archive of Defra's UK-AIR service contains estimated background concentrations of NO₂, PM₁₀ and PM_{2.5} at 1 km² resolution for the whole of the UK.

The estimated background concentrations for 2025 at the proposed development site (1 km² grid square centred at 485500 213500) correspond to 12.67 µg/m³ NO₂, 13.70 µg/m³ PM₁₀, and 7.54 µg/m³ PM_{2.5}. These are each considerably below the relevant NAQOs of 40 µg/m³ (NO₂/PM₁₀) and 20 µg/m³ (PM_{2.5}).

5.5. Evaluation

A review of the latest Air Quality Annual Status Report published by Eastleigh Borough Council indicates that there are three AQMAs declared within the Borough. A fourth has recently been revoked, and one of the remaining three is a candidate for revocation next year. The remaining two AQMAs will be able to be considered for revocation the year after that.

Despite the presence of the AQMAs, the most recent monitoring data indicates that pollutant concentrations at roadside locations near to the proposed development site are currently compliant with the NAQOs.

A review of registered industrial sites indicates that there are no premises nearby emitting significant contributions to air pollutant concentrations at the proposed development site.

Estimated background concentrations at the proposed development site are well below the annual average NAQOs. The proximity of nearby local pollutant sources, in this case B-roads and other smaller roads, would be extremely unlikely to cause exceedances of the NAQOs at the proposed development site.

6. SITE SUITABILITY

The baseline assessment contained within **Section 5** of this report identifies that the air quality in Eastleigh is generally good. Background concentrations are low, and at the proposed development site are considerably below the annual objective NAQOs. Local monitoring data indicates that even at roadside locations within AQMAs, the NO₂ annual mean objective is met across the Borough.

Section 4 of this report notes that as a workplace, the proposed development requires assessment against the short term NAQOs (hourly mean NO₂ and daily mean PM₁₀), as these averaging times represent the time likely to be spent at the development by employees/customers.

6.1.1. NO₂

Regarding the NO₂ objective, research conducted in 2003¹ indicates that there is only a risk that the hourly mean NO₂ concentration could exceed 200 µg/m³ if the annual mean NO₂ concentration is greater than 60 µg/m³. Local monitoring and predicted background concentrations both indicate that not only are roadside NO₂ concentrations below this, they are also compliant with the 40 µg/m³ annual NAQO across the Borough.

6.1.2. PM₁₀

Regarding the PM₁₀ objective, Defra provide a formula for predicting the number of days exceeding 50 µg/m³ from the annual average concentration:

$A = -18.5 + 0.00145 B^3 + 206/B$; where *A* is the number of exceedances of 50 µg/m³ as a 24-hour mean PM₁₀ concentration and *B* is the annual mean PM₁₀ concentration.

The formula indicates that exceedances of the daily mean NAQO (35 or fewer days >50 µg/m³) are only likely when annual averaging concentrations exceed 30 µg/m³. The predicted annual background concentration of PM₁₀ at the proposed development site is 13.92 µg/m³. The proximity of nearby local pollutant sources, in this case B-roads and other smaller roads, would not be sufficient to cause an exceedance of the NAQO.

6.2. Evaluation

As a result of the above it is considered that concentrations of all pollutants are compliant with all short- and long-term objectives at the proposed development site. The site is therefore considered to be suitable for use without the need for mitigation.

¹ Analysis of Relationship between 1-Hour and Annual Mean Nitrogen Dioxide at UK Roadside and Kerbside Monitoring Sites, Laxen and Marner, 2003.

7. IMPACT ASSESSMENT

The scoping assessment presented in **Section 4.4.2** of this report identifies that the proposed development does not meet the criteria given in the IAQM Guidance for a full impact assessment, namely due to a low level of predicted vehicle trip generation low on-site building emissions.

The impacts on air quality (changes in concentration) at local sensitive receptors as a consequence of the operation and occupation of the proposed development are therefore considered to be “*negligible*”; and the air quality effects (i.e., to health) of the proposed development are therefore considered to be “*not significant*”.

8. MITIGATION

8.1. Site Suitability

Air pollutant concentrations at the proposed development site have been modelled to be compliant with the National Air Quality Objectives in the opening year of the proposed development.

Mitigation measures to reduce the exposure of future occupiers of the proposed development are therefore not required.

8.2. Impact Assessment

The impacts on air quality at local sensitive receptors as a consequence of the operation and occupation of the proposed development are considered to be “*Negligible*”; therefore the proposed development will not have a significant effect on local air quality.

Mitigation measures to reduce the air quality impacts of the proposed development are therefore not required.

9. CONCLUSIONS & SUMMARY

An Air Quality Assessment has been undertaken in accordance with Defra's *Local Air Quality Management Technical Guidance (TG22)* and the IAQM/EPUK guidance *Land-Use Planning & Development Control: Planning for Air Quality* (2017), addressing the effects of local air pollutant emissions, and emissions associated with the development proposals.

Baseline pollutant concentrations at the proposed development site have been assessed using existing pollutant monitoring data, a review of local industrial sources, and estimated background concentrations.

Regarding site suitability, it is considered that if recent trends continue, air pollutant concentrations will remain compliant with the National Air Quality Objectives at the proposed development site. Mitigation measures to reduce the exposure of future occupiers of the proposed development are therefore not required.

Regarding the impact of the proposed development, the scoping stage has determined that due to the scale of the development, with limited traffic generation and no combustion processes relating to the energy strategy, a full assessment of the impacts of the proposed development on local air quality is not required. Mitigation measures to reduce the air quality impacts of the proposed development are therefore not required.

Based on the results of the assessments discussed above, which have all been carried out in accordance with the latest guidance, it is considered that the proposed development adheres to national, regional and local planning policy, and therefore that air quality concerns should not be a constraint on the proposed development.

Appendix 1

Glossary of Terms

Appendix 1: Glossary of Terms

National Air Quality Standard/National Air Quality Objective (NAQO): The concentrations of pollutants in the atmosphere, which can broadly be taken to achieve a certain level of environmental quality. The standards are based on an assessment of the effects of each pollutant on human health including the effects on sensitive subgroups.

Annual mean: The average of the concentrations measured for each pollutant for one year. In the case of the Air Quality Objectives, this is for a calendar year.

Air Quality Management Area (AQMA): An area that a local authority has designated for action, based upon predicted exceedances of Air Quality Objectives.

Concentration: The amount of a (polluting) substance in a volume (of air), typically expressed as a mass of pollutant per unit volume of air (for example, microgrammes per cubic metre, $\mu\text{g}/\text{m}^3$) or a volume of gaseous pollutant per unit volume of air (parts per million, ppm).

Exceedance: A period of time where the concentration of a pollutant is greater than the appropriate Air Quality Objective.

Nitrogen Oxides: Nitric oxide (NO) is mainly derived from road transport emissions and other combustion processes such as the electricity supply industry. NO is not considered to be harmful to health. However, once released into the atmosphere, NO is usually very rapidly oxidised to nitrogen dioxide (NO₂), which is harmful to health. NO₂ and NO are both oxides of nitrogen and together are referred to as nitrogen oxides (NO_x).

Particulate Matter: Fine Particles are composed of a wide range of materials arising from a variety of sources including combustion sources (mainly road traffic), and coarse particles, suspended soils and dust from construction work. Particles are measured in a number of different size fractions according to their mean aerodynamic diameter. Most monitoring is currently focused on PM₁₀ (less than 10 microns in diameter), but the finer fractions such as PM_{2.5} (less than 2.5 microns in diameter) is becoming of increasing interest in terms of health effects.

$\mu\text{g}/\text{m}^3$ microgrammes per cubic metre of air: A measure of concentration in terms of mass per unit volume. A concentration of 1 $\mu\text{g}/\text{m}^3$ means that one cubic metre of air contains one microgram (millionth of a gram) of pollutant.