



Air Quality Assessment	
Wappy Springs, Kirklees	
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## 1 Introduction

- 1.1.1 Air Quality Assessments Ltd (AQA) has been commissioned by Frank Marshall Estates Ltd to undertake an air quality assessment for the proposed development of up to 2,550m<sup>2</sup> of small employment units. The application site is located at the site of the former Wappy Springs public house on Lindley Moor Road, as shown in **Figure 1**.
- 1.1.2 Kirklees Council has declared nine Air Quality Management Areas (AQMA) for exceedances of the annual mean nitrogen dioxide (NO<sub>2</sub>) objective and one AQMA for exceedances of the 24-hour mean fine particulate matter (PM<sub>10</sub>) objective and traffic from the proposed development may affect some of these areas. The application site is not within any of the AQMAs.
- 1.1.3 This report describes the existing air quality conditions in proximity to the site and considers the effect of the proposed development on local air quality, and of existing air quality on new receptors at the development. The main air pollutants of concern related to road traffic are nitrogen dioxide (NO<sub>2</sub>) and fine particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>).
- 1.1.4 This report uses the methodology in the Air Quality & Emissions Technical Planning Guidance published by the West Yorkshire Low Emissions Group to screen out the requirement for a detailed air quality assessment and to determine the level of air quality mitigation required at the proposed development (West Yorkshire Low Emissions Group, 2018).
- 1.1.5 The assessment has been prepared taking into account all relevant local and national guidance and regulations. The professional experience of the consultant preparing this report is set out in **Appendix A1**.

## 2 Air Quality Legislation and Policy

### 2.1. EU Limit Values

- 2.1.1 The European Union's Directive on ambient air quality and cleaner air for Europe (European Parliament, Council of the European Union, 2008) set legally binding limit values for NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub>. The Air Quality Standards Regulations 2010 (as amended) implement the EU Directive limit values in English legislation (The Stationary Office, 2010). Achievement of the limit values is a national obligation rather than a local one.
- 2.1.2 The United Kingdom left the European Union on 31st January 2020; however, the EU legislation currently remains enshrined in UK law through the Air Quality Standards Regulations.
- 2.1.3 The limit values for NO<sub>2</sub> and PM<sub>10</sub> are the same as the objective values (see below). Limit values apply at all locations, apart from where the public does not have access, where health and safety at work provisions apply and on the road carriageway. The limit value compliance dates differ from the objectives; the PM<sub>10</sub> and NO<sub>2</sub> limit value applied from 2005 and 2010 respectively, whereas the PM<sub>2.5</sub> limit value applied from 2020.

### 2.2. National Legislation

- 2.2.1 Part IV of The Environment Act 1995, as amended by the Environment Act 2021, required the UK Government to prepare a national Air Quality Strategy. A new Air Quality Strategy for England was published in April 2023 (Defra, 2023a). The Air Quality Strategy sets out the actions that Defra expects local authorities to take in support of long-term air quality goals, including new PM<sub>2.5</sub> targets, and provides a framework to enable local authorities to make the best use of their powers and make improvements for their communities.
- 2.2.2 The strategy sets out air quality standards and objectives intended to protect human health and the environment. Standards are the concentrations of pollutants in the atmosphere, below which there is a minimum risk of health effects or ecosystem damage; they are set with regard to scientific and medical evidence. Objectives are the policy targets set by the Government, taking account of economic efficiency, practicability, technical feasibility and timescale, where the standards are expected to be achieved by a certain date. The Government has also published a Clean Air Strategy, which provides an overview of the actions that the government will take to improve air quality (Defra, 2019). The actions in the Clean Air Strategy focus on emissions from transport, the home, farming, and industry.
- 2.2.3 The Air Quality Strategy also describes the system of Local Air Quality Management (LAQM), which was introduced in Part IV of the Environment Act 1995. LAQM requires every local authority to carry out regular review and assessments of air quality in its area. Where an objective has not been, or is unlikely to be achieved, the local authority must declare an Air Quality Management Area (AQMA) and prepare an action plan which sets out appropriate measures to be introduced in pursuit of the objectives. PM<sub>2.5</sub> is not included in the LAQM framework; however, the government

expects all local authorities to effectively use their powers to reduce PM<sub>2.5</sub> emissions from the sources which are within their control.

2.2.4 The objectives for NO<sub>2</sub> and PM<sub>10</sub>, as prescribed by the Air Quality (England) Regulations 2000 and the Air Quality (England) (Amendment) Regulations 2002 (The Stationary Office, 2000; The Stationary Office, 2002), are shown in **Table 1**. The objectives for PM<sub>10</sub> and NO<sub>2</sub> were to have been achieved by 2004 and 2005 respectively and continue to apply in all future years thereafter.

2.2.5 The air quality standard for PM<sub>2.5</sub>, also shown in **Table 1**, was to be achieved by 2020. The Environmental Targets (Fine Particulate Matter) (England) Regulations 2023 set out two legally binding targets for PM<sub>2.5</sub>, with interim targets for each set out in the Environmental Improvement Plan 2023 (The Stationary Office, 2023; Defra, 2023b). The PM<sub>2.5</sub> targets are:

- 10µg/m<sup>3</sup> annual mean concentration PM<sub>2.5</sub> nationwide by 2040, with an interim target of 12µg/m<sup>3</sup> by January 2028; and
- 35% reduction in average population exposure by 2040, with an interim target of a 22% reduction by January 2028, both compared to a 2018 baseline.

**Table 1: The Objectives for NO<sub>2</sub> and PM<sub>10</sub> and the PM<sub>2.5</sub> Standard**

Pollutant	Concentration Measured As	Objective/Standard
NO <sub>2</sub>	1-hour Mean	200 µg/m <sup>3</sup> not to be exceeded more than 18 times a year
	Annual Mean	40 µg/m <sup>3</sup>
PM <sub>10</sub>	24-hour Mean	50 µg/m <sup>3</sup> not to be exceeded more than 35 times a year
	Annual Mean	40 µg/m <sup>3</sup>
PM <sub>2.5</sub>	Annual Mean	20 µg/m <sup>3</sup>

2.2.6 The objectives apply at locations where members of the public are likely to be regularly present and are likely to be exposed for a period of time appropriate to the averaging period of the objective. Examples of where the objectives should apply are provided in the Local Air Quality Management Technical Guidance (Defra, 2022) issued by the Department for Environment, Food and Rural Affairs (Defra). The annual mean NO<sub>2</sub> and PM<sub>10</sub> objectives should apply at the building façades of residential properties, schools, hospitals, care homes etc.; they should not apply at the building façades of places of work, hotels, gardens or kerbside sites. The 24-hour mean PM<sub>10</sub> objective should apply at all locations where the annual mean objective applies, as well as the gardens of residential properties and hotels. The 1-hour mean NO<sub>2</sub> objective should apply at all locations where the annual and 24-hour mean objectives

apply, as well as at kerbside sites where the public have regular access, e.g., the pavements of busy shopping streets.

## 2.3. Planning Policy

### *National Policies*

2.3.1 The National Planning Policy Framework (NPPF) sets out the Government's planning policies for England and how these should be applied (Department for Levelling Up, Housing and Communities, 2021). It provides a framework within which locally prepared plans for development can be produced. At Paragraph 8c, the NPPF states that the purpose of the planning system is to contribute to the achievement of sustainable development and includes an overarching 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."*

2.3.2 With regard to environmental impacts from traffic, at Paragraph 104 the NPPF states that:

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

*d) the environmental impacts of traffic and transport infrastructure can be identified, assessed and taken into account – including appropriate opportunities for avoiding and mitigating any adverse effects, and for net environmental gains; ..."*

2.3.3 The NPPF also states at Paragraph 174 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, taking into account relevant information such as river basin management plans; ..."*

2.3.4 The NPPF goes on to state at Paragraph 185:

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

2.3.5 With specific reference to air quality, the NPPF states at Paragraph 186 that:

*"Planning policies and decisions should sustain and contribute towards compliance with relevant limit values or national objectives for pollutants, taking into account the presence of Air Quality Management Areas and Clean Air Zones, and the cumulative impacts from individual sites in local areas. Opportunities to improve air quality or*

*mitigate impacts should be identified, such as through traffic and travel management, and green infrastructure provision and enhancement. So far as possible these opportunities should be considered at the plan-making stage, to ensure a strategic approach and limit the need for issues to be reconsidered when determining individual applications. Planning decisions should ensure that any new development in Air Quality Management Areas and Clean Air Zones is consistent with the local air quality action plan."*

2.3.6 The NPPF also includes the following statement at Paragraph 188:

*"The focus of planning policies and decisions should be on whether proposed development is an acceptable use of land, rather than the control of processes or emissions (where these are subject to separate pollution control regimes). Planning decisions should assume that these regimes will operate effectively. Equally, where a planning decision has been made on a particular development, the planning issues should not be revisited through the permitting regimes operated by pollution control authorities."*

2.3.7 The NPPF is supported by Air Quality Planning Practice Guidance (PPG) (Department for Levelling Up, Housing and Communities, 2019). The PPG states that:

*"Defra carries out an annual national assessment of air quality using modelling and monitoring to determine compliance with relevant Limit Values. 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, or where the need for emissions reductions has been identified."*

2.3.8 The PPG goes on to state 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). Air quality may also be a material consideration if the proposed development would be particularly sensitive to poor air quality in its vicinity."*

2.3.9 The PPG also sets out the information that may be required in an air quality assessment, stating 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."*

2.3.10 It also provides guidance on options for mitigating air quality impacts, and makes clear that:

*"Mitigation options will need to be locationally specific, will depend on the proposed development and need to be proportionate to the likely impact."*

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### ***Local Policies***

2.3.11 The Kirklees Local Plan Strategy and Policies includes Policy LP51 Protection and Improvement of Local Air Quality (Kirklees Council, 2019), which states:

*“1. Development will be expected to demonstrate that it is not likely to result, directly or indirectly, in an increase in air pollution which would have an unacceptable impact on the natural and built environment or to people.*

*2. Proposals that have the potential to increase local air pollution either individually or cumulatively must be accompanied by evidence to show that the impact of the development has been assessed in accordance with the relevant guidance. Development which has the potential to cause levels of local air pollution to increase must incorporate sustainable mitigation measures that reduce the level of this impact. If sustainable measures cannot be introduced the development will not be permitted.*

*3. Where the development introduces new receptors into Air Quality Management Areas or Areas of Concern or near other areas of relatively poor air quality, for example near roads or junctions, the development must incorporate sustainable mitigation measures that protect the new receptors from unacceptable levels of air pollution. Where sustainable mitigation measures cannot be introduced which prevent receptors from being exposed to unsafe levels of air pollution, development will not be permitted.”*

## 3 Methodology

### 3.1. Existing Conditions

3.1.1 Information on existing air quality within the study area has been collated from the following sources:

- The results of monitoring and the most recent publicly available Air Quality Annual Status Reports (ASR) published by Kirklees Council (Kirklees Council, 2022); and
- Background pollutant concentration maps published by Defra (Defra, 2023c).

### 3.2. Road Traffic Impacts

3.2.1 A three-stage air quality assessment process has been set out in the Air Quality & Emissions Technical Planning Guidance published by the West Yorkshire Low Emissions Group (West Yorkshire Low Emissions Group, 2018):

1. Determining the classification of the development proposal;
2. Assessing and quantifying the impact on local air quality; and
3. Determining the level of mitigation required by the proposal to meet Local Development Plan requirements.

3.2.2 Full details of the development classification method are set out in the guidance; however, in general, the classification is based on the size of the development, the level of traffic generated by the development and whether the development is located within an AQMA.

## 4 Baseline Conditions

### 4.1. LAQM Review and Assessment

4.1.1 Kirklees Council has declared ten AQMAs, nine for exceedances of the annual mean NO<sub>2</sub> objective and one for exceedances of the 24-hour mean PM<sub>10</sub> objective. The application site is not within any of these areas; however, traffic from the proposed development may affect the AQMA at Ainley Top, adjacent to Lindley Moor Road approximately 640m to the northeast of the application site (shown in **Figure 1**).

### 4.2. Local Air Quality Monitoring

4.2.1 Kirklees Council operates two automatic monitoring sites and a diffusion tube monitoring network and data from sites located adjacent to Lindley Moor Road are shown in **Table 2**, with the monitoring locations shown in **Figure 1**.

4.2.2 Annual mean NO<sub>2</sub> concentrations at monitoring sites located adjacent to Lindley Moor Road ranged from 19.4 to 50.2 µg/m<sup>3</sup> between 2015 and 2021 (**Table 2**). Exceedances of the annual mean NO<sub>2</sub> objective have been measured at diffusion tube monitoring sites K24, K72 and K73. There is an overall decreasing trend in measured concentrations and between 2019 and 2021 no exceedances of the annual mean NO<sub>2</sub> objective have been measured.

4.2.3 Measurements across the UK have shown that there is a risk of exceedances of the 1-hour mean NO<sub>2</sub> objective where the annual mean concentration is above 60 µg/m<sup>3</sup> (Defra, 2023c). Annual mean NO<sub>2</sub> concentrations measured at the diffusion tube monitoring sites have remained below 60 µg/m<sup>3</sup> and there are unlikely to have been any exceedances of the 1-hour objective.

4.2.4 The low concentrations measured in 2020 and 2021 were likely to have been affected by travel restrictions brought in to control the Covid-19 pandemic and may not be representative of the usual air quality.

### 4.3. Background Concentrations

4.3.1 Estimated background concentrations at the application site, obtained from the national maps published by Defra, are shown in **Table 3**. The background concentrations are well below the objectives.

**Table 2: Measured Annual Mean NO<sub>2</sub> Concentrations <sup>a</sup>**

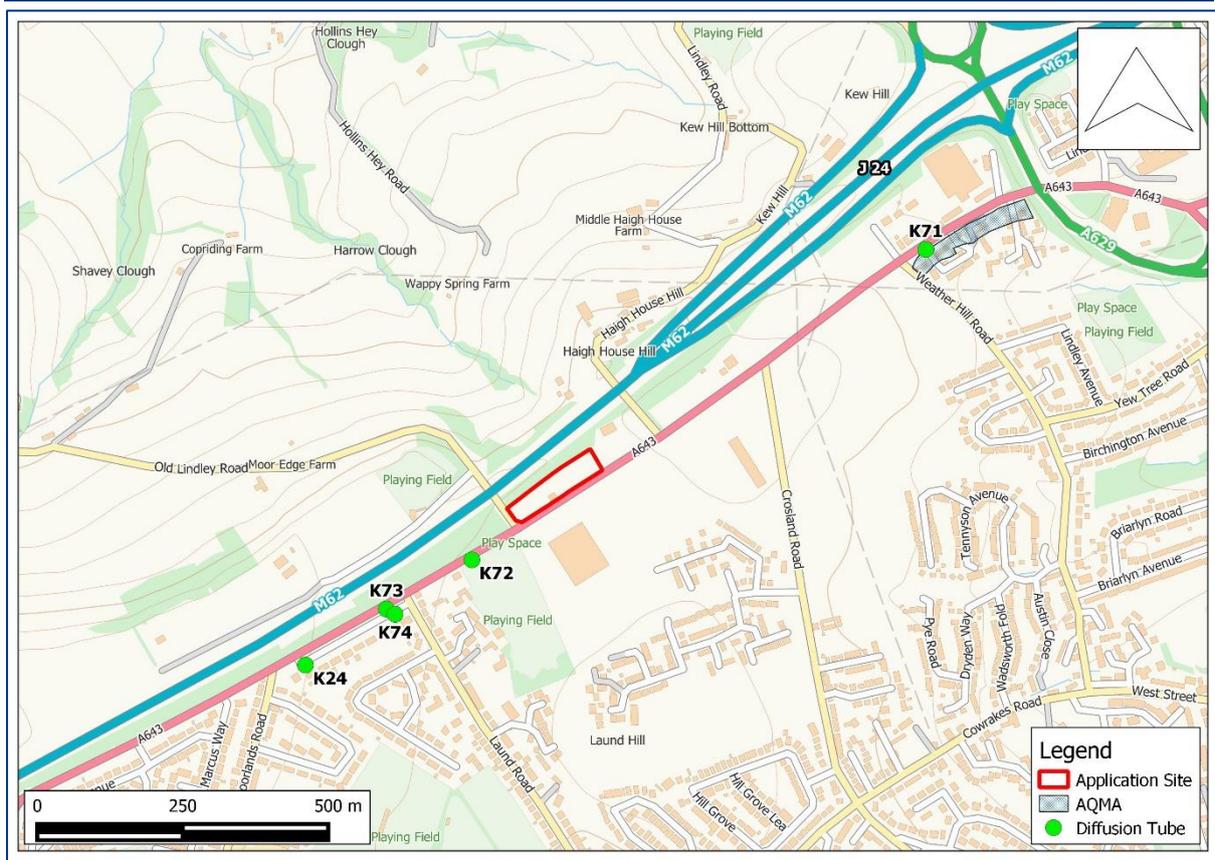
Site ID in Figure 1	Location	Site Type <sup>b</sup>	Distance to Kerb (m)	Annual Mean (µg/m <sup>3</sup> )				
				2017	2018	2019	2020	2021
<b>K24</b>	Lindley Moor Rd 1	R	2.0	<b>50.2</b>	40.0	34.1	27.5	32.3
<b>K71</b>	Lindley Moor Rd 2	R	3.5	36.9	39.3	30.7	22.6	28.8
<b>K72</b>	Lindley Moor Rd 3	R	2.4	<b>43.4</b>	35.3	32.2	24.3	26.2
<b>K73</b>	Lindley Moor Rd 4	R	1.8	30.0	<b>46.7</b>	34.2	19.4	31.0
<b>K74</b>	Lindley Moor Rd 5	R	3.4	29.4	30.5	23.7	20.1	21.5
<b>Objective</b>				<b>40</b>				

a Exceedances are shown in bold.

b R = Roadside.

**Table 3: Estimated Annual Mean Background Concentrations in 2023 (µg/m<sup>3</sup>)**

Grid Square	NO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
410500,418500	12.5	12.2	8.0
<b>Objective</b>	<b>40</b>	<b>40</b>	<b>25</b>



**Figure 1: Application Site, Air Quality Monitoring Sites and AQMA**  
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## 5 Air Quality Assessment

### 5.1. Impact of the Development

#### *Development Trips*

- 5.1.1 The net increase in daily trips due to the operation of the proposed development have been taken from the Transport Statement for the proposed development (Via Solutions Ltd, 2023). It has been estimated that the proposed development would generate 69 daily trips, which would distribute east and west on Lindley Moor Road. Assuming a 50% distribution east and west, the proposed development would lead to an additional 35 daily trips on the local road network.
- 5.1.2 Lindley Moor Road had an estimated annual average daily traffic flow of 14,533 in 2022 (DfT, 2023); therefore, the proposed development would increase traffic on Lindley Moor Road by 0.2%.

#### *Air Quality & Emissions Technical Planning Guidance Criteria*

##### *Impact of the Development*

- 5.1.3 With regard to the criteria for development classification in the Air Quality & Emissions Technical Planning Guidance, the floor area of the proposed development is just above the Stage 1 criteria of 2,500m<sup>2</sup> for light industry which would classify the development as a medium development.
- 5.1.4 The application site is not located within an AQMA, additional HGV movements generated by the development are no more than 10% of total development trips and the increase in traffic on Lindley Moor Road due to the proposed development would be less than 5% of the existing traffic flow. Therefore, the proposed development falls below the criteria for a major development and a detailed air quality assessment of the impacts on local air quality should not be required.
- 5.1.5 As the proposed development has been classified as a medium development, Type 2 mitigation would be required.

### 5.2. Impact on the Development

- 5.2.1 The proposed development would consist of employment use only there would be no air quality sensitive land use; therefore, there would be no relevant exposure at the application site with regard to the air quality objectives.

## 6 Mitigation

- 6.1.1 The screening assessment has shown that the proposed development would be classified as medium in the Air Quality & Emissions Technical Planning Guidance and that Type 2 mitigation would be required.
- 6.1.2 Examples of Type 2 mitigation are included in the Planning Guidance. The following mitigation measures will be included at the proposed development and are consistent with those recommended in the Planning Guidance. It is considered that the implementation of the mitigation measures would be sufficient to offset the increase in emissions due to traffic generated by the proposed development.
- 10% of parking spaces with an electric charging point, phased, with an 5% initial provision and the remainder at an agreed trigger level (charging point specifications are provided in Appendix 4 of the Planning Guidance);
  - Practical and convenient links are available to and from the application site offering the potential for employees and members of the public to walk, cycle or use the bus to and from the proposed development; and
  - Secure cycle parking will be provided at the proposed development.
- 6.1.3 Mitigation measures to reduce pollutant emissions from road traffic are also being delivered in the longer term by the introduction of more stringent emissions standards, largely via European legislation.

## 7 Conclusions

- 7.1.1 The air quality impacts associated with the operation of the proposed development have been assessed.
- 7.1.2 The proposed development is classified as medium in the Air Quality & Emissions Technical Planning Guidance. Type 2 mitigation would be required to negate the potential air quality effects of the scheme.
- 7.1.3 The air quality effects of the development have been assessed and found to be insignificant. There should be no constraints to the development of the site with regard to air quality as the proposed development is consistent with the relevant parts of:
- the NPPF and Air Quality PPG; and
  - Policy LP51 of the Kirklees Local Plan Strategy and Policies.

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## **A1 Professional Experience**

*Bob Thomas, BSc (Hons) PgDip MSc MEnvSc MIAQM CSci*

Bob Thomas is a Director at AQA, with over twenty years working in the sciences and sixteen years' experience in the field of air quality management and assessment. He has carried out air quality assessments for a wide range of developments, including residential, commercial, industrial, minerals and waste developments. He has been responsible for air quality projects that include ambient air quality monitoring of nitrogen dioxide, dust and PM<sub>10</sub>, the assessment of nuisance odours and dust, and the preparation of Review and Assessment reports for local authorities. He has extensive dispersion modelling experience for road traffic, energy centre and industrial sources, and has completed many stand-alone reports and chapters for inclusion within an Environmental Statement. Bob has worked with a variety of clients to provide expert air quality services and advice, including local authorities, planners, developers, architects and process operators, and has provided expert witness services at public inquiry. He is a Chartered Scientist, a Member of the Institute of Air Quality Management and a Member of the Institution of Environmental Sciences.

A full CV for Bob Thomas is available at <http://aqassessments.co.uk/about>