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1 Introduction

1.1 The adopted North West Leicestershire Local Plan 2011-2036 (as amended by the Partial review)[1] seeks to promote the health and wellbeing of the District's population, whilst also supporting the delivery of new homes, ensuring high quality new development, reducing the need to travel and supporting economic growth.

1.2 North West Leicestershire District Council ('the Council') must balance economic, social and environmental factors when deciding to grant or refuse planning permission or decide if conditions are required to achieve sustainable development. Air quality is one of the material considerations that the Council is required to consider when preparing plans and taking planning decisions.

1.3 Air quality is the largest environmental health risk in the UK[2]. It shortens lives and contributes to chronic and acute health effects. Health can be affected both by short-term, high pollution episodes and by long-term exposure to lower levels of pollution. Air pollution can arise from a variety of sources and can travel long distances. Emissions from both distant and local sources can build up into high, local concentrations of pollutants.

1.4 The Government has established a set of ***air quality objectives*** to protect human health. The 'objectives' are set as concentrations of individual pollutants over a specified averaging period with a target date. EU Directive 2008/50/EC sets ***limit values*** for nitrogen dioxide, ***PM_{10}*** and ***$PM_{2.5}$***, and is implemented in UK law through the Air Quality Standards Regulations[3]. The limit values for nitrogen dioxide and PM_{10} are the same numerical concentrations as the UK objectives, but achievement of the limit values is a national obligation rather than a local one. Historically, UK air pollution policy has been mainly driven by exceedances of the nitrogen dioxide (NO_2) ***annual average objective*** or ***limit value***, although the greater health impact of ***particulate matter*** (specifically $PM_{2.5}$) is acknowledged.

1.5 ***Particulate matter*** is made up of solid and/or liquid materials of various sizes that range from a few nanometres in diameter (about the size of a virus) to around 100 micrometres (about the thickness of a human hair). It consists of both primary components, which are released directly from the source into the atmosphere, and secondary components, which are formed in the atmosphere by chemical reactions. Sources of primary particulate matter/***PM_{10}/$PM_{2.5}$*** include industrial sources, road transport, domestic heating and agriculture. ***PM_{10}*** is particulate matter less than 10 micrometres in aerodynamic diameter. ***$PM_{2.5}$*** is particulate matter particles less than 2.5 micrometres in aerodynamic diameter. ***$PM_{2.5}$*** is currently not a statutory air quality monitoring requirement for the District Council under the Local Air Quality Management (LAQM) regime. At present, the UK legal

1 North West Leicestershire Local Plan (as amended by Partial Review) March 2021

2 Defra 2020. Air Pollution in the UK 2019 https://uk-air.defra.gov.uk/assets/documents/annualreport/air_pollution_uk_2019_issue_1.pdf

3 As amended through The Air Quality Standards (Amendment) Regulations 2016 and The Environment (Miscellaneous Amendments) (EU Exit) Regulations 2020.

limits for $PM_{2.5}$ exceed the World Health Organisation's (WHO) health-based guideline and are met in most places in the UK. However, as the WHO recognises, there is no safe level of $PM_{2.5}$, so any concentration-based target does not fully reflect the health evidence. Therefore, the focus of UK air pollution policy is shifting to also include particulate matter; In 2023 Defra set two new targets, and two new interim targets, for $PM_{2.5}$ concentrations in England, which are discussed further in paragraphs 2.8 and 2.9.

1.6 New development may lead to the worsening of air quality if the development increases emissions, from, for example, road traffic, energy plant, dust emissions during construction or through ***fugitive emissions of dust***[4], odour or industrial/commercial sources of pollutants. Development may also introduce ***relevant receptors***[5] into an area of potentially poor air quality and therefore the suitability of the site for the proposed uses requires assessment.

1.7 Planning policies and decisions can play an active role in improving air quality and reducing exposure to air pollution (which will improve health) as well as considering the impact of new development and identifying suitable mitigation measures.

1.8 There is industry standard guidance available from Environmental Protection UK (EPUK) and the Institute of Air Quality Management (IAQM)[6], which has been developed to provide a methodology to assess the significance of proposals in terms of their effects on air quality. It is not intended that this Supplementary Planning Document (SPD) either replaces or supersedes this guidance, but that it provides a local context, as well as further information on the level of assessment and the mitigation measures expected in North West Leicestershire.

1.9 The SPD has been developed to provide guidelines for new development and to assist the application of **Policy D2** of the North West Leicestershire Local Plan. It aims to:

- Aid consideration of air quality in the planning process, including assisting with the delivery of the Council's ***Air Quality Action Plan***[7];
- Contribute to sustainable development in air quality terms;
- Provide clarity and consistency to developers and their consultants, on the consideration of air quality by the Council;

4 As explained at paragraph 1.10, key technical terms identified in ***bold and italics*** are defined in the Glossary at Section 6.

5 The Air Quality Objectives only apply where 'receptors' (people) are exposed for a period of time relevant to the objective in question (for example for an annual mean the objectives apply at the facades of residential properties, schools etc). The locations where there is exposure and the objectives apply are therefore termed 'Relevant Receptors'. Therefore, introduction of people into an area which already has concentrations above objectives, could require an AQMA to be declared.

6 Moorcroft and Barrowcliffe *et al* 2017. Land-Use Planning & Development Control: Planning for Air Quality. Institute of Air Quality Management and Environmental Protection UK.

7 North West Leicestershire District Council. Air Quality Action Plan May 2021 https://www.nwleics.gov.uk/files/documents/draft_air_quality_action_plan_for_castle_donington/Draft%20AQAP%20.pdf

- Outline when an air quality assessment would be necessary to support a planning application as well as the scope of the assessment required; and
- Outline measures to reduce emissions and exposure for development at the outset, at a scale commensurate with the emissions.

1.10 The SPD focuses on human health. There are several acronyms included in the document, which are described in full for their first citation, and also covered by the Glossary at Section 6 of this SPD. The Glossary also includes definitions of some key technical terms relating to air quality. Where a technical term has a glossary definition, the term is highlighted in ***bold and italic text*** in the main body of the SPD*.*

2 Air Quality in North West Leicestershire

2.1 There are several sources of air pollutants in North West Leicestershire. As already noted, UK air pollution policy has been mainly driven by exceedances of the nitrogen dioxide objective. The principal source of nitrogen dioxide emissions is road traffic, including that on the District's strategic road network (e.g. the M1 and A42). East Midlands Airport, one of the UK's major freight airports, and its associated infrastructure also contributes to both nitrogen dioxide and particulate emissions. The District also has a long history of mining for coal and other minerals, such as brick clay, and there are several mineral extraction sites across the District which are potential sources of particulate matter. Other sources in the District include domestic and industrial sources as well as 'background pollution' from locations outside the District.

2.2 Air quality is improving in North West Leicestershire with fewer locations exceeding the UK air quality objectives, although health effects do still occur even at concentrations below current objective levels.

Air Quality Management Areas (AQMA)

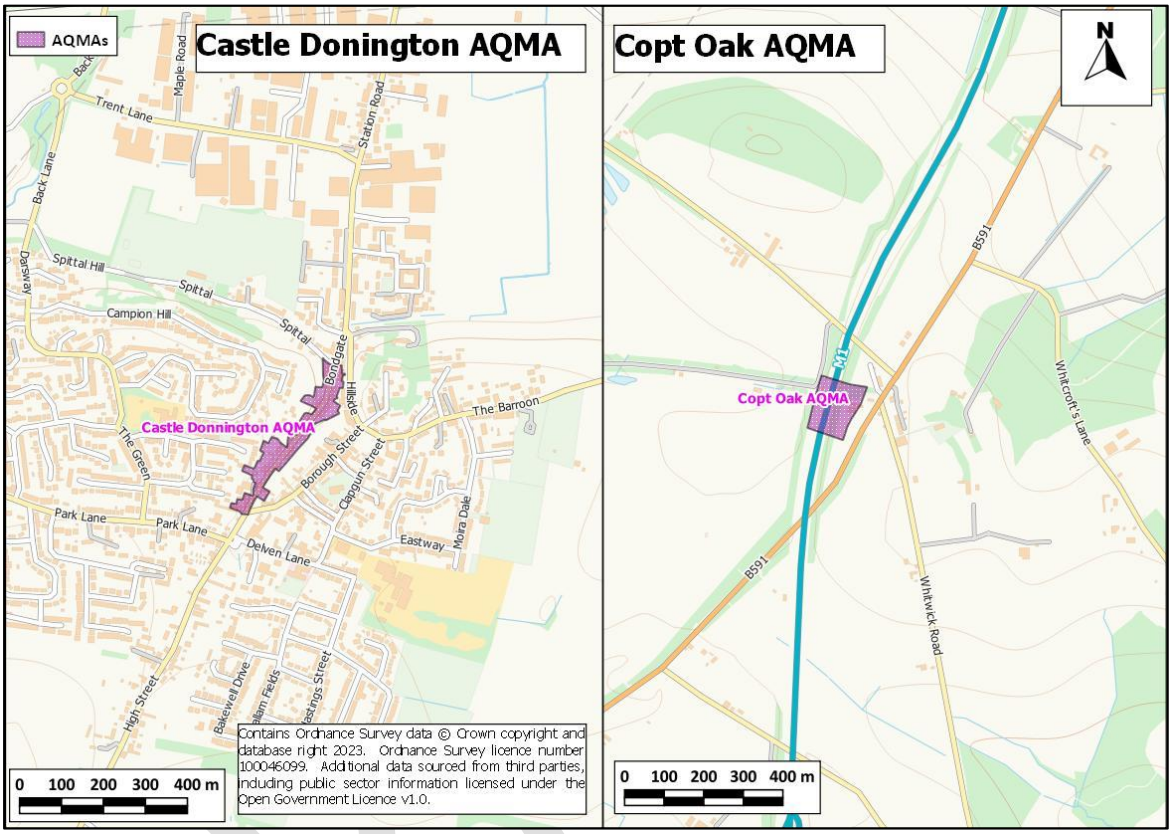
2.3 Where health-based air quality objectives are not met, the Local Air Quality Management (LAQM) regime requires local authorities to declare an ***Air Quality Management Area*** (AQMA) and put in place an ***Air Quality Action Plan*** to improve air quality. Since the inception of the LAQM regime, several AQMAs have been declared and subsequently revoked in North West Leicestershire. The previously-declared AQMAs on the M1, Kegworth and Coalville were revoked in 2020 and 2022 respectively, due to improvements in air quality, likely due mainly to a reduction in emissions from new vehicles. There are two remaining AQMAs in the District, at Castle Donington and Copt Oak (as shown in **Figure 1**).

2.4 All of the District's AQMAs (previous and current) have been declared in relation to traffic-related nitrogen dioxide concentrations (annual mean objective). No exceedances of any of the other regulated pollutants, including Particulate Matter (PM_{10}), have been identified in the District. Particulate Matter has a much wider range of pollutants than nitrogen dioxide and has the strongest evidence of a range of health effects. Even if concentrations of Particulate Matter are below air quality objectives, health effects may still occur. This SPD is designed to ensure that both nitrogen dioxide and Particulate Matter are considered within the planning process.

2.5 The remaining AQMAs are at a narrow, congested location encompassing the High Street and Bondgate in Castle Donington and an area around Copt Oak close to the M1. Further information on air quality in the District can be found in the Council's latest Annual Status Report[8].

8 North West Leicestershire Annual Status Reports available at https://www.nwleics.gov.uk/pages/local_air_quality_review_and_assessment

Figure 1: North West Leicestershire Air Quality Managements Areas (AQMAs)



Exceedances of Limit Values

2.6 EU Directive 2008/50/EC[9] sets ***limit values*** for nitrogen dioxide, PM_{10} and $PM_{2.5}$, and is implemented in UK law through the Air Quality Standards Regulations[10]. The ***limit values*** for nitrogen dioxide are the same numerical concentrations as the UK objectives but achievement of these values is a national obligation rather than a local one. How they are assessed and interpreted is different to that of the air quality objectives. North West Leicestershire does not have any Limit Value exceedances.

Future Air Quality in North West Leicestershire

2.7 $PM_{2.5}$ is not a statutory air quality monitoring requirement under the Local Air Quality Management regime and current objectives are met, however, the Environment Act 2021[11] introduces additional targets for $PM_{2.5}$ which are closer to the World Health Organisation's (WHO) health-based guideline[12]).

9 The European Parliament and the Council of the European Union 2008. Directive 2008/50/EC of the European Parliament and of the Council

10 HMSO 2010 The Air Quality Standards Regulations 2010 Statutory Instrument 1001

11 HMSO The Environment Act 2021

12 The WHO Guideline (2005) for PM2.5 is an annual mean of 10 µg/m3. This was revised down to 5 µg/m3 in 2021.

2.8 In 2023 Defra set two new targets[13], and two new interim targets, for $PM_{2.5}$ concentrations in England. One set of targets focuses on absolute concentrations. The long-term target is to achieve an annual mean $PM_{2.5}$ concentration of 10 $\mu g/m^3$ by the end of 2040, with the interim target being a value of 12 $\mu g/m^3$ by the start of 2028[14]. The second set of targets relate to reducing overall population exposure to $PM_{2.5}$. By the end of 2040, overall population exposure to $PM_{2.5}$ should be reduced by 35% compared with 2018 levels, with the interim target being a reduction of 22% by the start of 2028.

2.9 Defra will assess compliance with the targets rather than local authorities. This will not consider small changes over time to precisely where people are exposed (such as would relate to exposure introduced by a new development). All four new targets provide metrics against which central Government can assess its own progress. While local authorities have an important role delivering the required improvements, the actions required of local authorities will relate to controlling emissions and not directly assessing $PM_{2.5}$ concentrations against the targets.

2.10 The focus for local authorities will, therefore, be on reducing emissions and related to this, the WHO recognises that the health evidence shows that there is no safe level of $PM_{2.5}$, so the concentration-based target for $PM_{2.5}$ does not fully reflect the health evidence. Any reductions in concentrations of $PM_{2.5}$ will bring health benefits to the local population.

2.11 Therefore, for the purpose of improving air quality and reducing health impacts, this SPD is concerned with achieving and maintaining compliance with Air Quality Objectives and further improving air quality, particularly in relation to $PM_{2.5}$ concentrations.

13 Environmental Targets (Fine Particulate Matter) (England) Regulations 2023

14 Meaning that it will be assessed using measurements from 2027. The 2040 target will be assessed using measurements from 2040.

3 Policy Context

National Policy and Practice Guidance

3.1 The consideration of air quality impacts is a material consideration within the planning process.

National Planning Policy Framework

3.2 The National Planning Policy Framework (NPPF)[15] sets out planning policy for England and the overarching objectives relating to air quality and development. It states that the purpose of the planning system is to contribute to the achievement of sustainable development, and that the planning system has three overarching objectives, one of which (Paragraph 8c) 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".*

3.3 It also states in paragraph 174:

> *"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(…)"*

More specifically on air quality, Paragraph 186 makes clear 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*

[15] Ministry of Housing, Communities & Local Government. National Planning Policy Framework https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1005759/NPPF_July_2021.pdf

that any new development in Air Quality Management Areas and Clean Air Zones is consistent with the local air quality action plan".

National Planning Practice Guidance

3.4 The NPPF is supported by Planning Practice Guidance (PPG)[16], which includes guiding principles on how planning can take account of the impacts of new development on air quality.

3.5 Regarding plan-making, the PPG states (Reference ID: 32-002-20191101):

"It is important to take into account air quality management areas, Clean Air Zones and other areas including sensitive habitats or designated sites of importance for biodiversity where there could be specific requirements or limitations on new development because of air quality".

3.6 It also states that plans need to consider (Reference ID: 32-002-20191101):

- *"what are the observed trends shown by recent air quality monitoring data and what would happen to these trends in light of proposed development and / or allocations;*
- *the impact of point sources of air pollution (pollution that originates from one place);*
- *the potential cumulative impact of a number of smaller developments on air quality as well as the effect of more substantial developments, including their implications for vehicle emissions;*
- *ways in which new development could be made appropriate in locations where air quality is or is likely to be a concern, and not give rise to unacceptable risks from pollution. This could, for example, entail identifying measures for offsetting the impact on air quality arising from new development including supporting measures in an air quality action plan or low emissions strategy where applicable; and*
- *opportunities to improve air quality or mitigate impacts, such as through traffic and travel management and green infrastructure provision and enhancement."*

3.7 The role of the local authorities through the LAQM regime is covered, with the PPG stating that a local authority Air Quality Action Plan "*identifies measures that will be introduced in pursuit of the objectives and can have implications for planning*" (Reference ID: 32-001-20191101).

3.8 Regarding the need for an air quality assessment, the PPG states 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

16 Ministry of Housing, Communities & Local Government Planning Practice Guidance 2019 https://www.gov.uk/guidance/air-quality--3

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" (Reference ID: 32-005-20191101).

3.9 The PPG sets out the information that may be required in an air quality assessment, making clear 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" (Reference ID: 32-007-20191101).

3.10 Regarding sites that will operate under an Environmental Permit, the PPG states that:

"It is not necessary for air quality assessments that support planning applications to duplicate aspects of air quality assessments that will be done as part of non-planning control regimes, such as under Environmental Permitting Regulations" (Reference ID: 32-007-20191101).

3.11 The PPG also provides guidance on options for mitigating air quality impacts, as well as examples of the types of measures to be considered. It 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. 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" (Reference ID: 32-008-20191101).

3.12 Examples of mitigation include:

- *"maintaining adequate separation distances between sources of air pollution and receptors;*
- *using green infrastructure, in particular trees, where this can create a barrier or maintain separation between sources of pollution and receptors;*
- *appropriate means of filtration and ventilation;*
- *including infrastructure to promote modes of transport with a low impact on air quality (such as electric vehicle charging points);*
- *controlling dust and emissions from construction, operation and demolition; and*
- *contributing funding to measures, including those identified in air quality action plans and low emission strategies, designed to offset the impact on air quality arising from new development."* (Reference ID: 32-008-20191101).

Environment Act 2021

3.13 The UK's new legal framework for protection of the natural environment, the Environment Act 2021, passed into UK law in November 2021. The Act gives the Government the power to set long-term, legally binding environmental targets. It also establishes an Office for Environmental Protection (OEP), responsible for holding the government to account and ensuring compliance with these targets.

3.14 The Environmental Targets (Fine Particulate Matter) (England) Regulations 2023 (SI 2023 No. 96) sets two new targets for future concentrations of $PM_{2.5}$. These targets are described in Paragraphs 1.5 and 2.8 to 2.9.

Local Policy

3.15 The North West Leicestershire Local Plan 2011-2036 (as amended by the Partial review)[1] provides the current planning polices for the District. The Local Plan was adopted in November 2017 and the partial review was adopted in March 2021. The Council has two policies relating to air quality and one relating to Green Infrastructure which can benefit air quality.

Policy D2 Amenity

Proposals for development should be designed to minimise their impact on the amenity and quiet enjoyment of both existing and future residents within the development and close to it. As such, development proposals will be supported where:

1) They do not have a significant adverse effect on the living conditions of existing and new residents through loss of privacy, excessive overshadowing and overbearing impact.

2) They do not generate a level of activity, noise, vibration, pollution or unpleasant odour emission, which cannot be mitigated to an appropriate standard and so, would have an adverse impact on amenity and living conditions.

Development which is sensitive to noise or unpleasant odour emissions will not be permitted where it would adversely affect future occupants. Proposals for external lighting schemes should be designed to minimise potential pollution from glare or spillage of light. The intensity of lighting should be necessary to achieve its purpose, and the benefits of the lighting scheme must be shown to outweigh any adverse effects.

The Council will prepare a Supplementary Planning Document which will include new Development Guidelines.

Policy EN6 Land and Air Quality

Proposals for development on land that is (or is suspected of being) subject to land instability issues or contamination, or is located within the defined Development High Risk Area or within or close to an Air Quality Management Area or close to a known source of noise will be supported where:

(a) A planning application is accompanied by a detailed investigation and assessment of the issues; and

(b) Appropriate mitigation measures are identified which avoid any unacceptably adverse impacts upon the site or adjacent areas, including groundwater quality.

Development should avoid any unacceptably adverse impact upon soils of high environmental value (for example wetland and other specific soils) and ensure that soil resources are conserved and managed in a sustainable way.

Policy IF1 Development and Infrastructure

Development will be supported by, and make contributions to as appropriate, the provision of new physical, social and green infrastructure in order to mitigate its impact upon the environment and communities. Contributions may be secured by means of planning obligations and/or a Community Infrastructure Levy charge, in the event that the Council brings a Charging schedule in to effect. The type of infrastructure required to support new development includes, but is not limited to:

(…)(d) Green infrastructure including open space, sport and recreation, National Forest planting (either new provision or enhancement of existing sites) and provision of or improvements to sites of nature conservation value; *(…)*

The infrastructure secured (on or off-site) will be provided either as part of the development or through a financial contribution to the appropriate service provider and may include the long-term management and maintenance of the infrastructure. *(…)*

3.16 The Leicestershire Minerals and Waste Local Plan[17] was adopted in 2019 and this has one policy relating to air quality and the need to safeguard minerals and waste sites.

Policy W9: Safeguarding Waste Management Facilities

Planning permission will be granted for the redevelopment of existing and permitted waste management facilities to a non-waste use where it is demonstrated that the loss of the facility does not prejudice the County's implementation of the waste hierarchy either through the provision of a new waste facility in the vicinity of that to be lost or that there is no longer a need for the waste facility at that location.

Planning permission will be granted for development which adjoins, is adjacent to or would locate a potentially sensitive receptor in closer proximity to an existing or permitted waste management facility where it is demonstrated that there would be no adverse effect upon amenity and the development would not prejudice the current and future operation of the facility.

17 Leicestershire Minerals and Waste Local Plan Up to 2031 (2019) https://www.leicestershire.gov.uk/sites/default/files/field/pdf/2019/10/3/Leicestershire-Minerals-and-Waste-Local-Plan-Up-to-2031-Adopted-2019.pdf

4 Development and Site Classification

4.1 New development may lead to the worsening of air quality if the development increases emissions, from, for example, road traffic, energy plant, dust emissions during construction or through fugitive emissions of dust, odour or industrial/commercial sources of pollutants. Development may also introduce relevant receptors into an area of potentially poor air quality.

4.2 The scope of an air quality assessment should be proportionate to the scale/type of the development, the potential impacts of the scheme and whether it will introduce relevant receptors into an area of poor air quality.

4.3 Not all applications will require an air quality assessment. This section of the SPD directs applicants to answer key questions about the scale, type and location of development which will inform a) if the development proposed requires an air quality assessment and b) if so, the scope of that assessment.

Step 1: Determining the scale/type of development

4.4 This stage is intended to screen out smaller developments, or developments where impacts can be considered to have insignificant effects. It enables applicants to categorise their proposed development as either **minor, major** or **major+**.

4.5 The criteria in Figure 2 is based on the EPUK and IAQM Guidance on Planning and Air Quality[6] and has reference to the Town and Country Planning Development Management Procedure Order[18] definition for 'major development'.

Figure 2: Criteria for major development

A development is major if:

- For residential development, the number of dwellings is 10 or more; or where the number of dwellings is unknown, the site is 0.5ha or more.
- For all other uses, the floorspace is 1000 m^2 or more; or where the floorspace is unknown, the site area is 1 ha or more.

AND it has either of the following:

- More than 10 parking spaces
- A ***centralised combustion process***

4.6 Development that **does not** meet the criteria in Figure 2 is **minor** development. Applicants for minor development should at this point go to **Step 2**.

18 Central Government Town and Country Planning (Development Management Procedure) (England) Order 2015 Statutory Instrument 2015 No. 595

4.7 Where a development is identified as **major**, further consideration should be given by the applicant to the scale and impact of their proposals, with reference to the criteria in **Figure 3**. The criteria are based on the EPUK and IAQM Guidance on Planning and Air Quality[6]. If one or more of the criteria in **Figure 3** are met, then the proposed development is considered to have a greater potential impact on air quality and should be regarded (for the purposes of this SPD) as **major+**. If the criteria are not met, the scheme stays as **major**. Applicants for **major** or **major+** development should at this point go to **Step 2.** Where it is not clear whether the development should be classified as minor, major or major+, the applicant should seek further advice from the Council's Environmental Protection team.

Figure 3: Criteria for Major+ Development

A development is major + if one or more of these criteria are met:

- requires an EIA (Environmental Impact Assessment)
- increases Light Duty Vehicle (LDV) flows of more than 100 Annual Average Daily Traffic (AADT) within or adjacent to an AQMA, or more than 500 AADT elsewhere
- increases Heavy Duty Vehicles (HDV) flows of more than 25 AADT within or adjacent to an AQMA, or more than 100 AADT elsewhere
- realigns a road by 5 m or more if the road is within an AQMA (i.e. changes the proximity of receptors to traffic lanes)
- introduces a new junction or removes an existing junction near to ***relevant receptors***
- introduces or changes a bus station (increase bus movements by more than 25 AADT within or adjacent to an AQMA, or more than 100 AADT elsewhere)
- has an underground car park with extraction system (within 20m of a ***relevant receptor*** and with more than 100 movements per day, in and out)
- has one or more substantial ***combustion processes***, where there is a risk of impacts at relevant receptors (this includes combustion plant associated with standby emergency generators (typically associated with ***centralised combustion process***)).[19]
- it includes a regulated process under the Environmental Permitting (Amendment) Regulations 2018 with emissions to air.[20]

Step 2: Will the proposed development introduce relevant receptors into an area of poor air quality?

4.8 In order to determine if the proposed development is in an area of potential poor air quality, applicants

19 Typically, any combustion plant where the single or combined NOx emission rate is less than 5 mg/s 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.

20 Industrial processes which may range from large industrial plant to mineral extraction sites, dry cleaners and paint spraying workshops, are regulated by the Environment Agency (Part A1 processes) and the Council (Part A2 and Part B processes). The planning regime must assume that the permitting regime will ensure the processes comply

should check the location of their development against the criteria in **Figure 4**. This is to ascertain if the proposed development is in a location which exceeds the air quality objectives and where receptors could be subject to environmental nuisance.

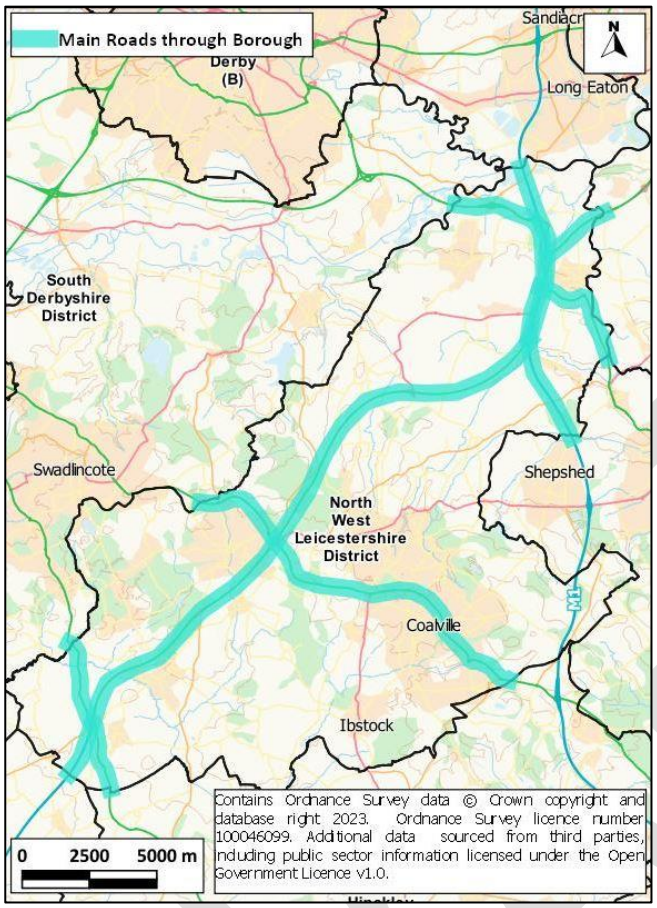
Figure 4: Location of application site

- Is the proposed development in an Air Quality Management Area (AQMA) and does it include ***relevant receptors***? or
- Does the proposed development introduce new ***relevant receptors*** within 30m of A Roads (for example the M1, A42, A50, A6, A444, A447, A453 and A511) (see Figure 5)? or
- Does the proposed development introduce new ***relevant receptors*** within 1km of ***Safeguarded Sites***[21] and/or an industrial source/East Midlands Airport and there are no existing sensitive receptors between the application site and the Safeguarded Site or an industrial source/East Midlands Airport?

with their permits and the Act. The planning regime can, however consider whether a land use is appropriate and it must consider the exposure to pollutants. All Part A and B Process developments requiring planning applications and where there is the potential significant emissions to air, either from a point source or fugitive emissions, will be required to carry out an air quality assessment.

21 Leicestershire Minerals and Waste Local Plan Up to 2031. 2019 https://www.leicestershire.gov.uk/sites/default/files/field/pdf/2019/10/3/SUB7-North-West-Safeguarding-2015.pdf

Figure 5: A-Roads through North West Leicestershire



Summary

4.9 The process outlined in **Section 4** enables applicants to determine:

- If the proposed development is **minor**, **major** or **major+;** and
- If the proposed development is in an area of poor air quality.

4.10 This will inform a) if the development proposed requires an air quality assessment and b) if so, the scope of that assessment. The requirements for an air quality assessment are set out in **Section 5**.

5 The Air Quality Assessment

5.1 **Section 4** requires applicants to go through two steps:

- Step 1: Identify the site as **minor**, **major** or **major+**
- Step 2: Determine if the site is in a location of potential poor air quality.

5.2 If the proposed development is **minor and is not in an area of potential poor air quality**, then **no air quality assessment is required**.

5.3 If the proposed development is **minor and in an area of potential poor air quality**, then an air quality assessment is required. The assessment will need to be in the form of an **Air Quality Site Suitability Assessment** only (further detail on this below).

5.4 **All major/major+ developments will require an air quality assessment**. However, if a development is **major/major+ and is not in an area of potential poor air quality**, then the air quality assessment **does not need to incorporate an Air Quality Site Suitability Assessment**.

5.5 Air quality assessments for **major** schemes will need to incorporate a **Construction Dust Risk Assessment** and the consideration of **Emission Reduction Measures**.

5.6 Air quality assessments for **major+** schemes will need to comprise those aspects described at paragraph 5.5 above and will also need to include an **Impact Assessment** and potential mitigation measures.

5.7 The scope of air quality assessments for minor, major and major+ proposals are depicted at **Table 1** below and in the flowchart at **Appendix A1**. The proposed assessment scope and approach should be agreed with Environmental Protection prior to submission of the planning application.

Table 1: Scope of Air Quality Assessment by Development Classification

Assessment Requirements		Development Classification			
		Minor	Major	Major +	
Assessment Scope	Air Quality Site Suitability Assessment	Only if the site introduces relevant receptors into an area of poor air quality	Only if the site introduces relevant receptors into an area of poor air quality	Only if the site introduces relevant receptors into an area of poor air quality	
	Construction Dust Assessment	No	Yes	Yes	
	Impact Assessment	No	No	Yes	
Mitigation/Minimum Measures		No, Emission Reduction Measures encouraged. May need mitigation measures for Site Suitability	Emission Reduction Measures	No significant Effects	Significant Adverse Effects
				Emission Reduction Measures	Emission Reduction Measures Onsite Mitigation Measures Offsetting

Assessment

Air Quality Site Suitability Assessment (Minor/Major/Major+ only if the site is in an area of poor quality)

5.8 An Air Quality Site Suitability Assessment will only be required when the proposed development introduces ***relevant receptors*** into an area of potentially poor air quality. It can form part of a wider air quality assessment or in the case of **minor** development, be submitted as a standalone report to accompany the planning application. Its purpose is to consider whether there are any risks of introducing ***relevant receptors*** into an area of poor air quality.

5.9 The Air Quality Site Suitability Assessment should provide evidence to enable a sound conclusion of the suitability of the site for its intended use from an air quality perspective and will comprise either:

- a simple qualitative assessment; or
- a detailed quantitative assessment.

5.10 A simple qualitative assessment may be appropriate if there is sufficient evidence to demonstrate this; for instance, using local monitoring data within an AQMA to determine whether air quality is poor. The proposed assessment approach should be agreed with the Council prior to submission of the planning application.

5.11 For proposals where a detailed quantitative air quality assessment is required, this may require modelling using an atmospheric dispersion model such as ADMS or AERMOD. The air quality assessment should predict concentrations at the façade of the receptor to determine compliance with air quality objectives. This will identify whether a scheme re-design or mitigation to protect future occupiers from poor air quality is necessary. Further details on appropriate mitigation measures are provided in paragraph 5.23 onwards.

5.12 For developments close to sources of ***fugitive dust*** or odours which have the potential to cause a nuisance, assessment should be undertaken in accordance with appropriate IAQM guidance, such as for Mineral Extraction sites[22] or odours[23].

5.13 In some circumstances, a model might not accurately reflect the local situation (for example in a complex street canyon, or at a junction within a street canyon), and in this case a short monitoring study using diffusion tubes may be more appropriate, and less costly. Before undertaking this approach, the specific location(s) for monitoring should be discussed with the Council.

Construction Dust Assessment (Major and Major+ Schemes)

5.14 The demolition/ construction phase is a source of dust emissions. Any Major scheme should consider the impact of dust emissions during the demolition and construction phase. A Dust Assessment should follow the most up to date relevant methodology provided by IAQM[24] . It may be possible to screen out a construction dust assessment using this guidance if there are no receptors within 350m of the site boundary or 50m of routes used by construction traffic.

Air Quality Impact Assessment (Major + Schemes)

5.15 The Air Quality Impact Assessment should provide enough evidence to enable a sound conclusion of the presence, or otherwise, of a significant air quality impact and will comprise either:

- a simple qualitative assessment; or
- a detailed quantitative assessment

5.16 Most developments that require an impact assessment are likely to need a detailed quantitative assessment. A simple qualitative assessment may be appropriate if there is sufficient evidence to

22 IAQM Guidance on the Assessment of Mineral Dust Impacts for Planning 2016

23 IAQM Guidance on the Assessment of Odour for Planning 2018

24 IAQM Assessment of dust from demolition and construction 2014

demonstrate the potential for significant effects; for instance the use of monitoring data or absence of ***relevant receptors***. The proposed assessment approach should be agreed with the local authority prior to submission of the planning application.

5.17 For those proposals where a detailed air quality assessment is required, this may require modelling using an atmospheric dispersion model such as ADMS Roads ADMS 5 or AERMOD.

5.18 The impact assessment should:

- determine the impact of any changes in air quality (particularly nitrogen dioxide, PM_{10} and $PM_{2.5}$) at sensitive receptor locations;
- determine compliance with ***air quality objectives***; and
- determine the overall significance of the development on air quality.

5.19 The assessment needs to consider:

- impacts during the demolition/construction phases[25];
- impacts during the operational phase; and
- cumulative impacts with other projects.

5.20 The determination of the magnitude of impacts as a result of changes in pollutant concentrations at individual receptors and also the overall judgment of significance should be based on EPUK and IAQM Guidance[6]. This should also take account of the fact that development should not contravene the Council's ***Air Quality Action Plan***, or render any of the measures unworkable. In accordance with this guidance a binary judgement of 'significant' or 'not significant' is required.

5.21 In some cases, for large scale developments, construction may be phased over a number of years, with residents or businesses occupying part of the development before the whole development is finished. In these cases, careful consideration should be given to what future assessment year should be applied. In some cases, more than one future year may be required to fully assess the impacts.

25 Schemes subject to an Environmental Impact Assessment will need to consider the impacts of emissions from construction traffic as well as construction dust. This should follow the approach outlined in section 5.15 to 5.21 which outlines the required content of an Impact Assessment.

5.22 If the air quality assessment does not meet the requirements set out in this SPD, the Council may request that the applicant amends, or undertakes the assessment again. If the assessment does not meet the required standards, the application may be refused.

Where a Detailed Air Quality Assessment is needed, the most up to date relevant guidance documents should be used. Currently these are EPUK/ IAQM Guidance (Land-use Planning & Development Control: Planning for Air Quality)[7] and LAQM Technical Guidance TG(22)[26]

Mitigation Measures

Emission Reduction Measures for Major Schemes (Major and Major+ Schemes)

5.23 Achieving compliance with the ***air quality objectives*** is a principal target to protect public health and to comply with national and local policy. However, measures to minimise air quality impacts, particularly in relation to particulate concentrations have beneficial impacts for society in general and are also important to assist in achieving sustainable development.

5.24 New development should consider air quality constraints and opportunities to minimise exposure of users to air pollution and reduce the impacts of development on air quality. The principles of good practice are outlined within the EPUK/IAQM guidance[6] and relate to design and operational measures.

5.25 The early consideration of air quality within the design of a scheme will ensure the air quality benefits are maximised and reduce the need to mitigate the impact of the development. Good practice design measures include measures to reduce exposure of relevant receptors to poor air quality, such as locating habitable rooms, schools, hospitals away from busy roads and including green infrastructure such as tree planting, green roofs and walls. This supports Policy IF1 of the Local Plan and advice on the use of green infrastructure to protect people from air pollution has been provided within the 6 C's Green Infrastructure Strategy[27]. Measures such as the inclusion of Electric Vehicle Charging points and low or zero emission energy plant are also encouraged by the Council.

5.26 Major developments will often result in increases in emissions[28]. All **major** and **major+** schemes should minimise emissions to achieve sustainable development in air quality terms.

26 Defra 2022. Review & Assessment: Technical Guidance LAQM.TG22 August 2022 Version, [Online], Available: https://laqm.defra.gov.uk/wp-content/uploads/2022/08/LAQM-TG22-August-22-v1.0.pdf.

27 North West Leicestershire 6 C's Green Infrastructure Strategy https://www.nwleics.gov.uk/files/documents/6_cs_gi_strategy_volume_1_sub_regional_strategic_framework_july_2010/6C%27s%20GI%20Strategy%20Volume%201%20-%20Sub-Regional%20Strategic%20Framework%20-%20July%202010.pdf

28 There are exceptions such as a scheme will result in changes to the road geometry and therefore will not itself increase emissions or where there are no sources of emissions, or if the development will lead to reduction compared to an existing use.

5.27 Measures to minimise emissions from a scheme should be considered within the following hierarchy, with preference given to measures which prevent emissions rather than reduce:

- Prevent:
    - measures that reduce number of vehicle movements, for example by encouraging modal shift to active travel; and
    - the use of heating systems with no emissions; avoiding the use of onsite combustion plant or backup emergency diesel generators.
- Reduce
    - measures that reduce vehicle emissions, for example by encouraging low emission vehicles;
    - measures to support improved public transport;
    - measures to support the development of alternative technologies; and
    - measures to reduce emissions from energy plant through the use of Low NOx plant.
- Protect
    - Protect receptors from existing poor air quality; and
    - flue design to maximise dispersion and distance to sensitive receptors.

5.28 Measures which could be considered by the applicant to minimise emissions from a new development are provided in **Figure 6**. This is not an exhaustive list, but rather a suggested suite of measures for consideration. The Council also welcomes the opportunity to work with developers to devise innovative measures that will lead to improving local air quality. Applicable measures will be dependent on the type of development, and the development emissions, location and impact.

5.29 The Council will review the Emission Reduction Measures outlined within the assessment to determine whether these are appropriate for the scale, emissions and impact of the development (note these measures are not to mitigate adverse effects but to minimise emissions from the scheme, although if mitigation for major + schemes are necessary some measures may be the same).

Figure 6: Examples of Suggested Emission Reduction Measures

- Implement a travel plan to encourage active travel and minimise vehicle movements;
- Improve infrastructure and layouts to improve accessibility and safety and link to existing infrastructure
- Prioritise walking and cycling in new junctions and crossings or by improving existing junctions and crossings
- Provide high quality and secure covered cycle parking and cycling infrastructure such as lockers or showers and changing facilities
- Provide Car Club parking spaces (prioritising the use of electric vehicle)
- Provide a direct connection to existing cycle and walking infrastructure to facilitate active travel
- Include designated parking spaces or differentiated parking charges for low emission vehicles
- Encourage sustainable means of transport (public, cycling and walking) for instance through subsided ticketing
- Provide shared mobility schemes cycle/ e-cycle/scooter hire schemes, or provide hubs for existing schemes
- Encourage commercial fleets to reduce emissions by increasing the proportion of newer vehicles and utilising low emission fuels and technologies. This could be implemented through an emission reduction/low emission strategy
- Use freight consolidation schemes/ last mile zero emission deliveries
- Provide parcel lockers to minimise redeliveries
- Avoid the use of onsite combustion plant, such as gas-fired boilers, Combined Heat and Power Plant (CHP) or backup diesel emergency generators. If included, run the flue for centralised and generator plant to a specified height above roof level to ensure the best possible dispersion environment. Encourage the use of ultra-low NOx boilers (less than 15mgNOx/kWh) and CHP and biomass boiler that meet minimum emission standards of
  - Spark ignition engine 250mgNOx/Nm^3
  - Compression ignition engine 400mgNOx/Nm^3
  - Gas turbine: 50 mgNOx/ Nm^3
  - Biomass Boilers 275mgNOx/Nm^3 & 25mgPM/Nm^3
- Request Construction Traffic Management Plans (CTMP) outlining measures to reduce emissions through lower emitting construction vehicles (those that meet the most stringent ***Euro Standard***), steps to reduce the number and length of journey, or timing and routing of journeys to avoid congestion
- Define ‘engine off’ areas, such as bus stands, taxi ranks, tourist coach parking and outside of schools
- Improve traffic flow by reducing congestion, stop-start traffic and traffic queues and the consequent emission ‘spikes’

Mitigation of Significant Adverse Impacts (Major+ Schemes)

5.30 All Major+ Developments which are predicted through the impact assessment to have significant air quality effects, are expected to mitigate these impacts.

5.31 The implementation of mitigation is expected to be in accordance with the following hierarchy:

- redesign to eliminate or reduce the impact;
- implement mitigation measures onsite (these measures should not be considered as an alternative to fundamental redesign);
- if mitigation measures cannot be implemented onsite, then offsetting may be necessary.

5.32 The mitigation required will need to be specific to the development's impact, taking into account local air quality issues, but also be proportional to the impact of the development. The design and mitigation package should be presented with the planning application.

5.33 Applicants must demonstrate that proposed mitigation is likely to effectively address the adverse impact of development in air quality terms. Where adverse impacts are not appropriately mitigated, this may result in the application being refused. The Council will evaluate all material considerations in determining the acceptability of a scheme.

5.34 Where mitigation is not integrated into a proposal, the Council will require this to be secured through a planning condition or through Section 106 agreements. If on-site mitigation is not possible then the Council will seek contributions for offsetting the identified air quality impacts offsite through a Section 106 (see paragraph 5.43) where planning permission would otherwise be refused on air quality grounds.

Offsetting

5.35 Where impacts cannot be mitigated onsite, it may be necessary to offset emissions offsite. This may be provided as a financial contribution to the Council from the developer. The Council would seek this contribution through a Section 106 agreement which will be used to offset the impact on air quality arising from new development (further information is provided at paragraphs 5.43-5.45 below).

5.36 NPPG suggests measures to offset the air quality impact of a development by supporting measures including those identified in ***air quality action plans*** and ***low emission strategies***, would be appropriate.

5.37 Figure 7 provides examples of what the Council may seek contributions towards.

Figure 7: Examples of Measures for Offsetting Contributions

Financial Contributions may be requested by the Council for:

- Implementing measures within the ***Air Quality Action Plan***
- Implementing ***Low Emission Strategies***
- Growth in low and ultra-low emission public transport, including buses
- Electric Vehicle infrastructure
- Car Clubs (including electric) and car sharing schemes
- Micro mobility hubs include bike, e-bike and scooter hire
- Plugged- in development and demonstration schemes e.g. new occupants given demonstration use of plug-in vehicles
- Low emission waste collection services
- Infrastructure for low emissions, alternative fuels, e.g. refuse collection and community transport services

Mechanical Ventilation

5.38 The site suitability assessment outlined in Section 5.8 may identify the need for mitigation, to ensure users of a development experience acceptable air quality.

5.39 Mechanical ventilation is the intentional fan driven flow of outdoor air into a building. Mechanical ventilation systems may include supply fans (which push outdoor air into a building), exhaust fans (which draw air out of building and thereby cause equal ventilation flow into a building), or a combination of both. Mechanical ventilation is an option to ensure users are not exposed to concentrations above the air quality objectives because the inlets can be situated away from pollution sources. This also may involve sealed windows / triple glazing and a forced ventilation system, incorporating filters to remove pollutants such as NOx and particulates.

5.40 Mechanical ventilation increases the energy requirements of developments and are not ideal if users are not able to open windows for purge ventilation when desired. Therefore, mechanical ventilation is not necessarily a satisfactory solution to mitigating against exposure, particularly in the event of mechanical failure.

5.41 It is expected that first the design of the scheme is revisited with the aim of eliminating exceedances of the objective, followed by a pragmatic review of the risk to occupiers considering the period of exceedance and assumptions within the assessment.

5.42 Where the above considerations cannot achieve acceptable exposure for a sensitive development, then consideration will be given to refusal of the scheme.

Section 106 Payments/ Planning Contributions

5.43 The Council may seek Section 106 Agreements and other relevant obligations with developers to secure mitigation, including off-set, on larger schemes, where appropriate, to make the scheme environmentally acceptable.

5.44 Section 106 Agreements will only be sought where the following tests are satisfied in accordance with national requirements:

- necessary to make the development acceptable in planning terms;
- directly related to the development; and
- fairly and reasonably related in scale and kind to the development.

5.45 Where the Council specifies contributions towards air quality infrastructure then this will be considered as part of negotiating wider developer contributions to avoid any issue of double counting and consideration of viability of the scheme.

6 Glossary

Acronyms

AADT	Annual Average Daily Traffic
ADMS-Roads	Atmospheric Dispersion Modelling System model for Roads
ADMS-5	Atmospheric Dispersion Modelling System model for point sources
AQAL	Air Quality Assessment Level
AQMA	Air Quality Management Area
AURN	Automatic Urban and Rural Network
CDRA	Construction Dust Risk Assessment
CEMP	Construction Environmental Management Plan
CTMP	Construction Traffic Management Plan
CHP	Combined Heat and Power
Defra	Department for Environment, Food and Rural Affairs
DfT	Department for Transport
DMP	Dust Management Plan
EFT	Emission Factor Toolkit
EPUK	Environmental Protection UK
EU	European Union
EV	Electric Vehicle
HDV	Heavy Duty Vehicles (> 3.5 tonnes)
HMSO	Her Majesty's Stationery Office
IAQM	Institute of Air Quality Management
kph	Kilometres Per hour
kW	Kilowatt
LAQM	Local Air Quality Management
LDV	Light Duty Vehicles (<3.5 tonnes)
LNR	Local Nature Reserve
µg/m^3	Microgrammes per cubic metre
MACC	Marginal Abatement Cost Curve

NO_2	Nitrogen dioxide
NOx	Nitrogen oxides (taken to be NO_2 + NO)
NPPF	National Planning Policy Framework
NRMM	Non-road Mobile Machinery
OEP	Office for Environmental Protection
PM_{10}	Small airborne particles, more specifically particulate matter less than 10 micrometres in aerodynamic diameter
$PM_{2.5}$	Small airborne particles less than 2.5 micrometres in aerodynamic diameter
PPG	Planning Practice Guidance
SAC	Special Area of Conservation
SPD	Supplementary Planning Document
SSSI	Site of Special Scientific Interest
WHO	World Health Organisation

Key Air Quality Terms

Air Quality Action Plan The mechanism by which local authorities, in collaboration with national agencies and others, will state their intentions for working towards the air quality objectives through the use of the powers they have available.

Air Quality Management Area An area where air pollution concentrations have exceeded the UK air quality objectives (the area may be declared wider than the area of exceedance).

Air Quality Objectives A nationally defined set of health-based concentrations for nine pollutants, seven of which are incorporated in Regulations, setting out the extent to which the standards should be achieved by a defined date. There are also vegetation-based objectives for sulphur dioxide and nitrogen oxides.

Centralised Combustion Process Centralised Combustion Process involves large-scale generation of heat or electricity at a central plant, such as Combined Heat and Power (CHP) plant, large boilers or biomass boilers or backup/standby generators. This doesn't include boilers at each property within the development

European Emissions Standards Introduced by the European Union (EU) in 1992, the European Emissions Standards are a set of regulations designed to define the acceptable amount of exhaust emissions that vehicles sold in the EU can release. The standards have the aim of reducing the emissions of a number of different pollutants. Approximately every

five or six years, a new Euro Emissions Standard is introduced, with Euro 1 being the first and Euro 6 being the most recent. Euro 7 is unlikely to come into force until at least 2025.

Exceedance A period of time when the concentration of a pollutant is greater than the appropriate air quality objective. This applies to specified locations with relevant exposure.

Fugitive Dust Small particles suspended in the air, primarily mineral dust. Sources include but are not limited to: Quarrying and mineral extraction sites; landfill sites; coal and material stockyards, or materials handling; major construction works; and waste management sites.

Limit Values Limit values are set for individual pollutants and are made up of a concentration value, an averaging time over which it is to be measured, the number of exceedances allowed per year, if any, and a date by which it must be achieved. Limit values are legally binding parameters that must not be exceeded.

Low Emission Strategy A document which outlines a package of measures to help reduce emissions from a development.

Particulate Matter

Particulate matter is made up of solid and/or liquid materials of various sizes that range from a few nanometres in diameter (about the size of a virus) to around 100 micrometres (100 µm, about the thickness of a human hair). It consists of both primary components, which are released directly from the source into the atmosphere, and secondary components, which are formed in the atmosphere by chemical reactions. **PM_{10}** is particulate matter less than 10 micrometres in aerodynamic diameter P**$M_{2.5}$** is particulate matter particles less than 2.5 micrometres in aerodynamic diameter

Relevant Receptors

The Air Quality Objectives only apply where 'receptors' (people) are exposed for a period of time relevant to the objective in question (for example for an annual mean the objectives apply at the facades of residential properties, schools, hospitals and care homes). The locations where there is exposure and the objectives apply are therefore termed 'Relevant Receptors'.

Safeguarded Sites A site designated by minerals and waste planning authorities which are desired to be kept safeguarded from unnecessary sterilisation by non-mineral/waste development.

Standards A nationally defined set of concentrations for nine pollutants below which health effects do not occur or are minimal.

Appendix A1: Flow Chart