Summary

- Air quality has a significant impact on public health, both on mortality and on quality of life. It is important that action is taken to minimise the impacts.

- Local planning decisions have an important role to play, since they can significantly affect local air quality through the design, location and management of emission sources and receptors.

- This guidance encourages developers to support action through the planning system to improve air quality and lower transport emissions. It does so by providing guidelines for treatment of development sites through planning appraisal.

- The approach seeks to minimise harmful pollutant emissions, avoid significant impact on local concentrations and protect the public from unacceptable exposure to pollution. In doing so it tailors assessment and mitigation requirements according to specific site characteristics, which relate both to the nature and also the scale of associated impacts and risk.

- The guidance explains:
  (i) How to classify a development site in order to streamline its passage through the system
  (ii) What assessment and mitigation should be considered for a given type of site
  (iii) The submissions a developer should make and how these will be considered by the LPA
1 Introduction

Air Pollution

1.1 Air quality has a significant impact on public health, both on mortality and on quality of life. It is estimated that each year 61 deaths in the Lancaster district are attributable to air pollution. In Lancashire as a whole this figure rises to 540. The direct impact of air pollution on health is the greatest environmental risk we are exposed to. It is important that measures are taken to address the situation.1

1.2 The main pollutants of concern are nitrogen dioxide and particles. Exceedance of nitrogen dioxide air quality objectives and elevated levels of particulate pollution in areas of Lancaster are a major health concern. We therefore need to reduce concentrations of these pollutants and so minimise their associated health impacts.

1.3 Once emitted into the atmosphere, pollutants are carried and dispersed with air movements and may be subject to chemical change. Controlling concentrations either within pollution hotspots or across the wider area, must take such processes into account. This means that action is needed not only in the specific locations where most harm occurs, but also more widely across the entire Lancaster district as well.

1.4 Transport is a major source of pollutant emissions and forms the focus of this guidance note. Other development related sources include gas and biomass boilers, these are dealt with separately (see para 1.19). Further information on the state, sources, trends and impacts of air pollution in Lancaster are available from the Council website.2

Impacts and risks associated with new development

1.5 New development poses three related but distinct concerns in relation to air quality:

Pollutant Emissions Emissions, arising from construction and use of a site, adding cumulatively to existing pollution across the entire district and beyond.

Local Concentrations Distinct changes to air pollution levels in and around the development site (during construction and/or when the site is brought into use)

Human Exposure Harm to individuals arising as a result of introducing new exposure to air pollutants through their occupation of the site.
National Policy and Guidance

1.6 Local authorities have a statutory duty to work towards compliance with the health based Air Quality Objectives set for seven key pollutants in the National Air Quality Regulations. Public Health managers also have responsibilities to respond to air quality impacts detailed under the Public Health Outcomes Framework.

1.7 Local planning decisions have an important role to play, since they can significantly affect local air quality through the design and location of emissions sources and receptors. The National Planning Policy Framework provides guidance as to how planning can take account of the impact of new development on air quality. Paragraphs 35, 109 and 124 specifically require that developments: (i) exploit opportunities for sustainable transport modes; (ii) incorporate facilities for charging plug-in and other ultra-low emission vehicles; (iii) do not cause unacceptable impacts; (iv) contribute towards compliance with EU limit values and national air quality objectives; (v) properly consider the impact on AQMAs and AQAP; and (vi) consider cumulative impacts.

1.8 Defra and the Low Emission Partnership published national guidance on Low Emission Development in 2010. Since then, there has been a growing body of adopted local policies, guidance and practice, which help both to guide and inspire best approaches into the future. Useful current examples of the approach at local level are those employed by Bradford City and York City Councils respectively.

1.9 EPUK guidance on Planning for Air Quality provides useful technical context particularly in relation to the detailed undertaking of concentration assessment. However, it must be emphasised that guidance contained within this Lancaster District document takes precedence.

Local Policy

1.10 Policy DM37 of the Lancaster District Development Management Document establishes local planning policy in relation to the management of air quality and pollution. This recognises the need to ensure that new development does not have an unacceptable negative impact on air quality and also avoids further exacerbating existing air quality problems. The need to reduce emissions and plan sustainably is addressed further, in the same document, under Policy DM35 ‘Key Design Principles’ and Policy DM36 ‘Sustainable Design’.

1.11 Policy DM37 states that:

Air Quality Assessments (AQA) must be submitted for any development proposal within or adjacent to an Air Quality Management Area (AQMA).

New development located within or adjacent to an AQMA must ensure that users are not significantly adversely affected by the air quality within that AQMA and include mitigation measures where appropriate.

1.12 Additional notes on local policy identify further sections of relevance within the Development Management Document, Lancaster City Council Corporate Plan, Local Transport Plan, Transport Masterplan for Lancaster and Air Quality Action Plan. Strengthen interlinkage with the air quality action plan (incl via review/update of AQAP itself).
This Guidance

1.13 This guidance encourages developers to support action through the planning system to improve air quality and lower transport emissions by providing guidelines for treatment of development sites through planning appraisal.*

1.14 It supports implementation of local planning policy DM37 (para 1.11 above) by laying out the process for assessing and mitigating air quality impacts of new development, including provisions for ensuring that users are not significantly adversely affected by air pollution within an AQMA.

1.15 The approach seeks to minimise harmful pollutant emissions, avoid significant impact on local concentrations and protect the public from unacceptable exposure. In doing so it tailors assessment and mitigation requirements according to specific site characteristics, which relate both to the nature and also the scale of associated impacts and risk.

1.16 The guidance explains:
   (i) How to classify a development site in order to streamline its passage through the system.
   (ii) What assessment and mitigation needs to be considered for a given type of site.
   (iii) What submissions a developer needs to make and how these will be considered by the LPA.

1.17 **Worked examples for a range of typical sites are presented in an accompanying report.**
(Ref: Site Appraisal Pilots, LEP May 2016)

*Interim Interpretation*
Policy DM37 is undergoing revision. In the meantime, the following interpretation differentiates aspects of this guidance note, which reflect existing requirements under DM37 from more general good practice.

**Policy Requirements**
- Type 3/3X sites should undertake concentration assessment and demonstrate no severe effect.
- Type 1X, 2X and 3X sites should undertake exposure assessment and demonstrate no severe effect.

**Good Practice**
- All sites should deliver standard air quality provisions (i.e. EV infrastructure and construction practice).
- Type 2/2X, 3/3X should undertake emissions assessment and propose associated further mitigation.

**Related Requirements**

1.18 Sites falling under other regulatory regimes, including IPPC, LAPPC, waste management licensing and EIA regulations may require alternative or additional assessments relating to air quality. Requirements for such should be discussed with the LPA.

1.19 **Stationary sources of air pollution include gas and biomass boilers.**
2 Site Classification

Site Classification

2.1 Classification is used to simplify passage of a development through the appraisal process. It is based on the general characteristics of the site and results in assignment to one of six possible types: Type 1, Type 2, Type 3, Type 1X, Type 2X or Type 3X.

2.2 Once assigned, the site type is used to establish requirements for impact assessment. It also has bearing on the likely scope of mitigation, which will be necessary to meet planning objectives in relation to air quality. These differences are summarised in the table below:

<table>
<thead>
<tr>
<th>Type 1</th>
<th>Smaller sites requiring standard safeguards to minimise emissions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 2</td>
<td>Larger sites with potential to generate higher levels of traffic and pollution. Likely to require further emissions mitigation beyond standard safeguards</td>
</tr>
<tr>
<td>Type 3</td>
<td>As type 2 but generating even higher levels of traffic, which pose a specific risk of more directly impacting existing areas of particularly poor air quality</td>
</tr>
<tr>
<td>X Suffix</td>
<td>Any site with potential to introduce significant new public exposure to existing levels of poor air quality (ie. Types 1X, 2X, 3X accordingly)</td>
</tr>
</tbody>
</table>

How to Classify a Site

2.3 Classification is initiated by the developer, who establishes a provisional type based on the guidelines laid out below (steps 1-5). The developer then confirms this assignment with the planning authority at the earliest opportunity (step 6).

2.4 If determined correctly according to the guidelines, the authority is likely to simply confirm the provisional classification as proposed. However, due to the site specific nature of air quality problems, it may, in some cases, be necessary for them to adjust this assignment. In such an event, a clear explanation would be provided.

2.5 Sites are classified through the following steps, further information on each is provided in the corresponding paragraphs, indicated in brackets:

Step 1   Establish the size of the development as ‘small’ or ‘large’ [para 2.6]

Step 2   Identify within which colour coded area the development sits [para 2.7]

Step 3*  Estimate the trip rate for the development site and determine whether the specified thresholds are exceeded [para 2.8]

Step 4*  Consider whether the development has potential to introduce significant new exposure to poor air pollution [para 2.9]

Step 5   Determine the provisional classification as Type 1, Type 2, Type 3, Type 1X, Type 2X or Type 3X [para 2.10]

Step 6   Confirm the final classification through discussion with the Local Planning Authority at the earliest opportunity [para 2.11]
Step 1: Size

2.6 All sites are categorised as large or small according to the threshold for large sizes listed in the table below:

<table>
<thead>
<tr>
<th></th>
<th>Land Use</th>
<th>Unit</th>
<th>Large Sites</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>A1 Food retail</td>
<td>GFA*</td>
<td>&gt;800</td>
</tr>
<tr>
<td>2</td>
<td>A1 Non-food retail</td>
<td>GFA</td>
<td>&gt;1500</td>
</tr>
<tr>
<td>3</td>
<td>A2 Financial and professional services</td>
<td>GFA</td>
<td>&gt;2500</td>
</tr>
<tr>
<td>4</td>
<td>A3 Restaurants and cafes</td>
<td>GFA</td>
<td>&gt;2500</td>
</tr>
<tr>
<td>5</td>
<td>A4 Drinking establishments</td>
<td>GFA</td>
<td>&gt;600</td>
</tr>
<tr>
<td>6</td>
<td>A5 Hot food takeaway</td>
<td>GFA</td>
<td>&gt;500</td>
</tr>
<tr>
<td>7</td>
<td>B1 Business</td>
<td>GFA</td>
<td>&gt;2500</td>
</tr>
<tr>
<td>8</td>
<td>B2 General industry</td>
<td>GFA</td>
<td>All Sites</td>
</tr>
<tr>
<td>9</td>
<td>B8 Storage or distribution</td>
<td>GFA</td>
<td>All Sites</td>
</tr>
<tr>
<td>10</td>
<td>C1 Hotels</td>
<td>Bedroom</td>
<td>&gt;100</td>
</tr>
<tr>
<td>11</td>
<td>C2 Hospitals and nursing homes</td>
<td>Beds</td>
<td>&gt;50</td>
</tr>
<tr>
<td>12</td>
<td>C2 Residential education</td>
<td>Student</td>
<td>&gt;150</td>
</tr>
<tr>
<td>13</td>
<td>C2 Institutional hostels</td>
<td>Resident</td>
<td>&gt;400</td>
</tr>
<tr>
<td>14</td>
<td>C3 Dwelling houses</td>
<td>Unit</td>
<td>&gt;80</td>
</tr>
<tr>
<td>15</td>
<td>D1 Non residential institutions</td>
<td>GFA</td>
<td>&gt;1000</td>
</tr>
<tr>
<td>16</td>
<td>D2 Assembly and leisure</td>
<td>GFA</td>
<td>&gt;1500</td>
</tr>
<tr>
<td>17</td>
<td>- Others</td>
<td>Discuss LPA</td>
<td>Discuss LPA</td>
</tr>
</tbody>
</table>

*GFA – Gross Floor Area in square metres

Note: For mixed used developments, the entire site is considered large if any single use exceeds the limits indicated in the table above or if the total combined GFA > 1500

Review threshold for mixed use sites further as part of site pilots.
Lancaster to consider further alignment of table with existing transport assessment triggers.
2.7 Sites are categorised as located in the plain or hatched areas on the map below:

*Note:* The hatched area is derived from review and assessment under the LAQM regime. This area corresponds to locations where traffic generated by a new development has potential to impact most directly on one or more AQMAs or to contribute to the declaration of a new one.
Step 3: Traffic (performed by developer)

2.8 Large sites are categorised directly in relation to the traffic they are likely to generate. This requires an estimate of the associated traffic flows for all vehicles and also just for Heavy Goods.* These need to be expressed as annual average daily trips (AADT) and then assessed against the following thresholds:

<table>
<thead>
<tr>
<th>Estimated Increase in Traffic Flow</th>
</tr>
</thead>
<tbody>
<tr>
<td>AADT increase in Hatched Zone</td>
</tr>
<tr>
<td>All vehicles (&gt;1000)</td>
</tr>
<tr>
<td>and/or HGV (&gt;30)</td>
</tr>
</tbody>
</table>

*Note: estimation of increased traffic flow is likely to require specialist input, for example from a transport consultant, or potentially as advice from the planning authority. Relevant data may also be available from a transport assessment, where this is available.

Step 4: Exposure (performed by developer)

2.9 Step 4 considers whether use or occupation of the site introduces new* exposure to poorer air quality. This requires an opinion as to whether the site meets the ‘exposure sensitive site’ definition in the box below. Specialist knowledge is required to interpret this definition, which would normally be provided by the developer’s air quality consultant or potentially through discussion with the planning authority.

Exposure Sensitive Sites
Exposure sensitive sites comprise locations where members of the public are regularly present and are likely to be exposed for a period of time appropriate to the averaging time of the relevant AQ objective.

Averaging times for NO\(_2\) are annual (long term) and hourly (short term), so corresponding sites reflect:
- short and long term exposure (e.g. housing, apartments, flats, schools, care homes, hospitals) or
- short term only (e.g. eating areas in hotels, restaurants and cafes).

Notes
(1) Occupational exposure is covered by other legislation and so is not relevant here.
(2) Exposure sensitive sites include those, which would fall under the above criteria through exercising permitted development rights, for example - the permitted conversion of office space to residential.

*This step concerns protection those occupying and using the development site (i.e. new exposure). Potential worsening of existing exposure is managed via the consideration of emissions and concentrations.
Step 5: Provisional Classification

2.10 The chart below shows how to combine the results of steps 1 to 4, in order to determine the provisional site type:

```
<table>
<thead>
<tr>
<th>Size?</th>
<th>Small</th>
<th>Large</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location?</td>
<td>Plain</td>
<td>Hatched</td>
</tr>
<tr>
<td>Traffic?</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Exposure?</td>
<td>1</td>
<td>1X</td>
</tr>
</tbody>
</table>
```

Step 6: Final Classification

2.11 The provisional classification is confirmed through discussion with the planning authority. This should occur at the earliest opportunity. If determined correctly according to the preceding guidelines, the authority is likely to simply confirm the provisional classification as provided. *However, due to the site specific nature of air quality problems, it may be that in some cases, it is necessary for the assignment to be adjusted to reflect site specific factors or other concerns* (such cases are relatively rare, and a clear explanation would be provided for the adjustments).

2.12 Once finalised, the site type is used to establish requirements for impact assessment. It also has bearing on the likely scope of mitigation, which will be necessary to meet planning objectives. These aspects and implications are explained fully in section 3.
3 Mitigation and Assessment

Mitigation and Assessment

3.1 Most sites will generate some level of impacts and risk in relation to air quality. Consequently most sites will require some level of mitigation. Standard provisions apply to all sites, providing relatively simple widely applicable measures to help reduce emissions. Some sites will require further emissions mitigation on top of this, while some may need to make other specific provisions relating to concentration or exposure effects.

3.2 Depending on the nature of the development site, different types of impact assessment are required. These correspond to the three air quality concerns identified in para. 1.5:

- **Emissions Assessment** associated with overall level of pollutant emissions
- **Concentration Assessment** associated with direct impacts on pollutant concentrations
- **Exposure Assessment** associated with risk of human exposure to air pollution.

3.3 The site type, established in section 2, is used to set requirements for impact assessment. It also has bearing on the likely scope of subsequent mitigation, which will be necessary to meet planning objectives relating to air quality. These stipulations are summarised in the table below, with further explanation provided in the corresponding paragraphs (colour coded and indicated on the right hand side).

<table>
<thead>
<tr>
<th>Type 1 Site</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Provisions</td>
<td>No Assessment Required</td>
<td>M: para. 3.5</td>
<td></td>
</tr>
</tbody>
</table>

| Type 2 Site                          |                      |                      |                      |
|--------------------------------------|----------------------|----------------------|                      |
| Standard Provisions                  | Emissions Assessment  | para. 3.6-3.10       |                      |
| Further Emissions Mitigation         |                      |                      |                      |

| Type 3 Site                          |                      |                      |                      |
|--------------------------------------|----------------------|----------------------|                      |
| Standard Provisions                  | Emissions Assessment  | para. 3.11-3.12      |                      |
| Further Emissions Mitigation         | Concentration Assessment|                      |                      |
| Taking concentrations into account   |                      |                      |                      |

| Type X Sites                         |                      |                      |                      |
|--------------------------------------|----------------------|----------------------|                      |
| Exposure Measures                    | Exposure Screen      | para. 3.13-3.14      |                      |

3.4 It is important that impact assessment and mitigation proposals are considered together, since the former needs to include evidence on the efficacy of the latter. Such close linkage is enabled through a requirement for combined reporting by the developer in the form of an ‘assessment and mitigation report’. This reporting requirement applies for large sites (i.e. 2, 2X, 3 and 3X). Section 4 covers the associated developer submissions and LPA decision making.
Standard Provision  

(applies to all sites)

3.5 Standard provisions apply to all sites, ensuring simple universal precautions:

(i) **Control of Construction Emissions**: Typically will require adoption of a ‘construction environmental management plan’ which covers issues such as construction vehicle emission standards, construction staff travel planning and delivery arrangements and control of fugitive dust emissions. (Further details: appendix A1)

(ii) **Electric Vehicle Infrastructure**: Aimed at encouraging the uptake of electric vehicles. Generally requires groundwork for and/or installation of recharging infrastructure for electric vehicles (inside/outside, single/multiple users). (Further details: Appendix A2).

Further Mitigation  

(applies to type 2, 2X, 3 and 3X sites)

3.6 In addition to standard provision, larger sites (Type 2, 2X, 3 and 3X) are required to design and implement a package of measures termed ‘Further Emissions Mitigation’. The broad scope of which is described in the figure and text below

(i) **Further Electric Vehicle Infrastructure**: Although a standard level of EV infrastructure is expected as part of standard provision, well targeted investment beyond this may be considered part of further mitigation.

(ii) **Trip reduction**: It is important that the sites minimise trips initially through sensible location and good design; and then through effective mitigation. Requirements are usually established via the separate transport assessment process and packaged in the form of a site travel plan.

(iii) **On-Site Technology Measures**: are aimed at reducing emissions from individual vehicle trips that remain following trip reduction. Measures typically encourage fitting of emission reduction technologies for existing vehicles or by enabling and promoting the uptake of newer or alternatively fuelled ones.

(iv) **Off-Site Contribution**: Where the emission impact can’t be fully mitigated by measures on, or in close proximity to a development, a financial contribution may be requested towards wider compensatory measures, typically including investment in local fleets, road networks or low emission infrastructure (via the Lancaster Transport Masterplan).
3.7 The selection and design of further mitigation measures is informed by the use of an Emissions Assessment to quantify associated bulk emissions. This is used to determine whether the mitigation proposals represent a balanced and proportionate level of mitigation compared to the harm that would otherwise be caused by site emissions.

3.8 Appendix B2 provides technical detail on how to undertake an emissions assessment and present the findings (specialist knowledge is required to understand and respond effectively to these requirements, which would normally be provided by the developer’s air quality and transport consultant(s)).

3.9 The box below identifies the headline indices, which the LPA will use to review and interpret the results, by forming a view as to the balance and proportionality of the proposed mitigation. It should be noted however, that these indices while important, do not limit the authorities freedom to take other aspects or weights of the evidence base into account.

<table>
<thead>
<tr>
<th>Review and Interpretation of Emission Assessment Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>The authority will consider whether:</td>
</tr>
<tr>
<td>- the assurance requirements are met</td>
</tr>
<tr>
<td>- the balance and extent of mitigation is commensurate to emissions harm</td>
</tr>
</tbody>
</table>

In considering the balance and extent of mitigation, the authority will give weight to the following indices (expressed in absolute terms and also as a % of base harm):

- **Design Credit**: Credit awarded in recognition of design features, which go beyond standard practice and contribute to air quality and emission goals, but the benefits of which are not adequately reflected by the emissions assessment calculations.

- **On-Site Mitigation**: Benefit-based valuation of proposed on-site mitigation, calculated as emissions damage costs avoided over the benefits period (usually 5 years).

- **Contribution**: Monetary value of any proposed supplementary contribution for off-site compensatory measures.

- **Total Mitigation Credit**: The simple sum of design credit, on-site mitigation credit and contribution.

3.10 For the present time, the LPA will consider the merit of mitigation proposals on a site by site basis, while seeking to maintain a balanced and consistent approach overall. At the same time, quantitative performance benchmarking will be undertaken, with a view to establishing associated performance thresholds, which subsequently form part of the appraisal process.
3.11 Type 3 sites require a concentration assessment to estimate changes in ambient pollutant levels arising from the development and to consider implications for meeting air quality objectives. Concentration assessment complements emissions assessment, by providing a safeguard to ensure that a single development does not cause unacceptable localised impacts to ambient concentrations of air pollutants.

3.12 Appendix B3 provides technical detail on how to undertake a concentrations assessment and report on the findings. The box below explains how the authority will review and interpret these results. Specialist knowledge is required to understand and respond effectively to these requirements, which would normally be provided by the developer’s air quality consultant.

**Review and Interpretation of Concentration Results**

The test metric is percentage increase in pollutant concentration (usually NO₂), arising from construction, occupation and use of the site. An increase of 5% or more of the corresponding limit value is cause for concern.

The level of concern is influenced by the location where impacts occur. If the impact occurs within an AQMA, or would of itself lead to the potential creation of a new or extended AQMA, this indicates a severe impact on local concentrations. Where impacts are unlikely to lead to the worsening, creation or extension of an AQMA, they are none the less a significant concern and so trigger a ‘warning light’.

Severe impacts are likely to lead to refusal. It is therefore important for the developer to identify potential for such impacts at the earliest opportunity and to consider associated design and mitigation options. A warning light remains a major concern and should be avoided if at all possible, including by giving particular emphasis to the design and optimisation of on-site mitigation.

Attributing concentration changes to individual development sites, is a challenging task and requires a careful approach. It is the developer’s responsibility to ensure that assessment is made using reasonable and transparent assumptions. Failure to do so is likely to incur delays or additional cost.

The authority reserves the right both to form an independent view as to the uncertainty associated with inputs or outputs, presented by the developer; and also to adopt a precautionary approach when taking these uncertainties into account.

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3.13 Type 1X, 2X and 3X sites require an exposure assessment to determine if future occupants of a development are likely to be exposed to unacceptable levels of air pollution. This is usually a simple screening exercise undertaken by reviewing local monitoring data, considering location of AQMAs and discussion with a local air quality officer (further details appendix B1).

3.14 Where new exposure is introduced by the development, this triggers a warning light, indicating that suitable exposure measures are required (further details appendix B1). Failure to propose suitable measures will be considered as a severe impact and is likely to result in refusal.
4 Reports and Decisions

4.1 It is the developer’s responsibility to establish the air quality assessment and mitigation expectations for their site at an early stage in the planning process, using the guidelines laid out in this document. Early discussion with the local planning authority is necessary to confirm site classification (section 2) and is recommended in relation to any other aspect of the process, about which they are uncertain or unclear.

4.2 Small sites (Type 1 and Type 1X) do not require substantial submissions by the developer, providing that the relevant standard provisions and exposure screen/measures are appropriately addressed and documented. Larger sites (Type 2, 2X, 3 and 3X) require a formal ‘impact assessment and mitigation report.’

4.3 Developer submissions are reviewed by the Council’s Air Quality team, who form an opinion as to the acceptability of the proposal in relation to air quality. This opinion will be based, according to the type of site, on the following tests:

<table>
<thead>
<tr>
<th>Test</th>
<th>Detail</th>
<th>Applicable Sites</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Meets standard provisions for mitigating emissions</td>
<td>Para. 3.5 All Sites</td>
</tr>
<tr>
<td>2</td>
<td>Provides balanced and proportionate emissions mitigation</td>
<td>Para. 3.7 Type 2, 2X, 3, 3X</td>
</tr>
<tr>
<td>3</td>
<td>Avoids unacceptable direct impact on local concentrations</td>
<td>Para. 3.10 Type 3, 3X</td>
</tr>
<tr>
<td>4</td>
<td>Avoids the introduction of new unacceptable exposure</td>
<td>Para. 3.12 Type 1X, 2X, 3X</td>
</tr>
</tbody>
</table>

4.4 Developments meeting the relevant tests will be considered acceptable with regards air quality (transport). Those failing any single test will be considered unacceptable and the Air Quality team are likely to recommend their refusal.

4.5 These tests are applied first and foremost on the basis of outcomes, reflecting the net air quality impacts and risk associated with the site taking proposed mitigation into account. In situations, where outcomes are not clear cut, perhaps due to quality of the best available data, uncertainties in an assessment or limited mitigation options, the authority may also take into account the extent to which the developer has taken all reasonable steps to identify and address relevant impacts and risks [i.e. their endeavour]. Any such consideration however will not necessarily override the primary consideration of outcomes.

4.6 Final recommendations by the Air Quality team, are then considered as part of the wider planning balance through the determination process.
5 **Key Terms**

Terms here are those defined and used in a specific way within this document (the subsequent glossary includes wider technical and policy terms, useful for a broader understanding of the approach).

- **Site Classification**: Classification is used to simplify passage of a development through the appraisal process. It is based on the general characteristics of the site.

- **Standard Provisions**: Standard provisions apply to all sites, ensuring simple universal precautions.

- **Further Mitigation**: In addition to standard provision, larger sites should also provide a package of emissions measures termed ‘Further Mitigation’.

- **Balanced and Proportionate Mitigation**: The intended level of emissions mitigation for all sites.

- **Emissions Assessment**: Assessment of overall impact of pollutant emissions (EMA).

- **Concentration Assessment**: Assessment of direct impacts on pollutant concentrations (CNA).

- **Exposure Assessment**: Assessment of site occupant’s exposure to air pollution (XPA).

- **Impact Assessment and Mitigation Report**: A single report prepared by the developer which lays out site impacts and proposed mitigation.

- **Warning Light**: A level of impact that is a cause for concern though, if managed appropriately, is unlikely to lead to planning refusal.

- **Severe Impact**: A level of impact that is likely to lead to planning refusal.
**Glossary**

Technical and policy terms, which are generally useful for a full understanding of the approach.

- **Air Quality Action Plan (AQAP)**
  An air quality action is drawn up by a local authority in order to lay out the action to be undertaken in relation to a designated Air Quality Management Area (AQMA) in order to meet Air Quality Objectives (AQOs).

- **Air Quality Management Area (AQMA)**
  If an authority identifies a location where Air Quality Objectives are not met or are unlikely to be met, they have a duty to declare an Air Quality Management Area and take action to improve the situation.

- **Air Quality Objective (AQO)**
  Air Quality Objectives are targets set by national government, which local authorities have a duty to work towards. *Compliance with AQ objectives is important to protect health, however it does not represent safe levels of pollution, since considerable harm occurs below these levels.*

- **Annual Average Daily Traffic (AADT)**
  Total volume of vehicle traffic on a highway or road for a year divided by 365 days.

- **Local Air Quality Management (LAQM)**
  Duties assigned under Part IV of the Environment Act 1995, which require local authorities to monitor and assess air quality and take action to protect it.

- **Local Planning Authority (LPA)**
  The local authority or council that is empowered by law to exercise statutory town planning functions for a particular area of the United Kingdom.

- **Nitrogen Dioxide (NO₂)**
  Nitrogen dioxide (NO₂) is a gaseous air pollutant produced from combustion processes. In urban outdoor air, its presence is mainly due to traffic.

- **Particles (PM)**
  A mixture of solid particles and liquid droplets found in the air. Some particles, such as dust, dirt, soot, or smoke, are large or dark enough to be seen. Others are very small, making them invisible to the naked eye.

- **Review and Assessment (R&A)**
  Local authorities have a duty under Local Air Quality Management to review and assess the air quality across their area.
References


[2] Air Quality and Pollution (Lancaster City Council, Air Quality Web Site pages)
http://www.lancaster.gov.uk/environmental-health/environmental-protection/air-quality/

[3] Local Air Quality Management and Objectives (Defra website pages)
web: laqm.defra.gov.uk
web: uk-air.defra.gov.uk/assets/documents/National_air_quality_objectives.pdf

web: www.phoutcomes.info


[6] Low Emission Strategies – Using the planning system to reduce transport emissions (Defra/LEP, 2010)
web: laqm.defra.gov.uk/action-planning/aqap-supporting-guidance.html#LESguide

Appendix 2 - Development Control Air Quality Policy


Appendices

A1  Construction Practice

General Approach

A1.1 Where required, a construction environmental management plan (CEMP) must be submitted to and approved by the planning authority. The plan should include appropriate measures, which will be implemented, to minimise emissions to air and restrict them to within the site boundary during the construction (or demolition) phase.

A1.2 Measures, may include:
- On site wheel washing
- Restrictions on use of unmade roads
- Agreement on the routes to be used by construction traffic with the Council (larger schemes).
- Restriction of stockpile size, also covering or spraying them to reduce possible dust.
- Targeted sweeping of roads subject to high traffic levels and silt loading
- Minimisation of evaporative emissions and prompt clean-up of liquid spills.
- Prohibition of intentional on-site fires and avoidance of accidental ones
- Control of construction equipment emissions (incl. use of low emission fuels and technology)

A1.3 In presenting these measures, the plan should also provide detail on the management and control processes, which will ensure that they will be implemented effectively and adhered to.

Typical Wording

A1.4 Prior to any works commencing on site, a CEMP shall be submitted to and approved in writing by the Local Planning Authority. The CEMP shall identify the steps and procedures that will be implemented to minimise the creation and impact of noise, vibration and dust resulting from the site preparation, demolition, groundwork and construction phases of the development. It is recommended that routing of construction traffic is also agreed within this plan, to prevent increased emissions and noise from construction vehicles affecting the wider urban area.

Sources of Guidance

A1.5 Guidance to assist developers with the assessment of dust from construction and demolition activities has been produced by the Institute of Air Quality Management (IAMQ) and should be followed for major developments. Guidance notes are available for download from http://iaqm.co.uk/guidance/

A1.6 Further guidance on the control of dust and emissions from construction and demolition has been produced in partnership by London Councils and the Greater London Authority (with assistance from the Building Research Establishment and the PRECIS Working Group). Available for download: https://www.london.gov.uk/file/18750/download?token=zV3ZKtpP
A2 EV Charging Requirements

A2.1 The table below sets out standard provision levels.

<table>
<thead>
<tr>
<th>Provision of parking bays and charging points for Electric Vehicles in new developments (including conversions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Houses(^1)</td>
</tr>
<tr>
<td>Flats (&lt;50 units)(^2)</td>
</tr>
<tr>
<td>Flats (&gt;50 units)(^2)</td>
</tr>
<tr>
<td>Other Development (&lt;50 bays)(^2)</td>
</tr>
<tr>
<td>Other Development (&gt;50 bays)(^2)</td>
</tr>
</tbody>
</table>

(1) Recommended installation of 16A or higher Type 2 charger (minimum requirement standard 3 pin 13A charger)
(2) dedicated freestanding weatherproof chargers

Note: Where charging facilities are shared e.g. flats, developer provision should also include arrangements for future operation/maintenance.

A2.2 Investment beyond the standard provision may be considered as part of further mitigation, though this must be well targeted and in balance with overall mitigation for the site.
A3 On-Site Technology Measures

A3.1 A package of measures, which help to reduce emissions over and above design features and other aspects of mitigation already incorporated into the scheme proposal. The package sets out to encourage and incentivise the use of low emission fuels and transport technology.

A3.2 The package may tackle one or a combination of the following site sub-fleets:
- **Private cars** (residential and/or visiting the site)
- **Captive fleet(s)** (site based – light and/or heavy)
- **Service vehicles (goods)** (visiting site: light/heavy for collection/delivery of goods)
- **Service Vehicles (people)** (visiting site: light/heavy for personal transport, e.g. school buses/taxis)

A3.3 Non exhaustive examples¹ of individual measures include:
- **Travel plan** measures discouraging high emission vehicles.
- Travel plan measures encouraging low and ultra-low emission vehicles.
- Travel plan measures including the introduction of a car club (particularly one using ultra low emission vehicles).
- Designation of *parking* spaces for low emissions vehicles.
- Differential parking charges depending on vehicle emissions.
- **Commercial vehicles** Euro based standard
- **On-site fleet low emission operations plan**²
- Use of **ultra-low emission service vehicles**

A3.4 The developer should consider the full raft of possible measures and select an appropriate mix, which delivers mitigation commensurate to the scale and impact of the development.³

A3.5 Selected measures should be presented in the form of an *on-site mitigation plan* comprising:
- a *list of measures*, indicating for each measure: target fleet(s), nature and scale of mitigation
- an estimate of *total mitigation* expressed as mass of pollutant and also %TBD⁴
- an estimate of *additional cost* to the developer for each measure and overall
- a *timed plan* for when and how each measure will be implemented and monitored

Notes

[1] Examples of other actions that could be included in an LES can be found on the Low Emissions Partnership website and on the Low Emissions Hub at [http://lowemissionstrategies.org/les_planning_guidance.html](http://lowemissionstrategies.org/les_planning_guidance.html)

[2] Example wording: ‘Fleet operations should provide a plan for reducing emissions and encouraging the take up of low emissions technologies and alternative fuels.’

[3] Early and ongoing liaison with the planning authority on the nature, scale and intensity of proposed mitigation and also the methodology, assumptions, format and presentation of associated data is recommended.

A4 Off-Site Contribution

A4.1 Where required, the financial contribution will usually be agreed at a level which reflects residual site emissions\(^1\) cumulated over a 5 year period\(^2\) from first operation, expressed as monetised harm to society.

A4.2 On payment of the agreed contribution, the responsibility for achieving and demonstrating associated good value emission reduction passes to the local authority.

A4.3 A non-exhaustive example of possible uses of secured funds include:
- Low emissions refuelling infrastructure.
- On street EV charging posts.
- Low emissions bus service provision.
- Low emissions waste collection services.
- Cycle hire schemes and cycling infrastructure.
- Incentivising for the take up of low emissions fuels and technologies.
- Public transport improvements.
- Contributions to renewable energy generation projects.
- Supporting low emission car clubs.
- Network improvements (e.g. signal improvements and traffic management).
- AQMA relief road(s).
- Air quality monitoring.

Notes
[1] i.e. after taking all on-site mitigation into account
[2] or the anticipated lifetime of the site occupation/operation if < 5 years.
B1 Exposure Assessment & Measures

Assessment
Assessment will usually comprise a simple screen involving review of local monitoring data, AQMA designations and, potentially, discussion with the local air quality officer.

The screen should identify, in broad terms:
- approximate number of people at an increased risk of exposure to poor air quality;
- the location, age and relative health of these individuals;
- broad conclusions regarding the exposure risk presented by the development.

Mitigation
Any increase in exposure to poor air quality is a concern and relevant provisions must be taken to prevent it, or to reduce its extent as far as practicably possible. The best approach is indicated by the design hierarchy laid out below:

- Separation by distance
  (e.g. setting buildings back from the roadside)
- External Layout
  (e.g. position of window openings, balconies)
- Internal Layout
  (e.g. position of habitable rooms - bedrooms/living areas etc)
- Ventilation Strategy
  (e.g. mechanical ventilation with non-opening windows)

Tune diagram and acceptance tests (pend Lancaster wording on ventilation strategy)

Acceptance
Suitable measures will ensure that:
(i) Pollution levels at facades with openings to habitable rooms do not exceed the AQO*
(ii) Effective room ventilation is maintained within habitable rooms

*Where the proposed design leaves uncertainty regarding the pollution levels at facades with openings to habitable rooms, the developer is likely to be required to demonstrate via appropriate monitoring/modelling that the acceptance criteria will be achieved.
B2 Emissions Assessment

Aims
To assess the transport emission impacts of the development, propose corresponding mitigation and demonstrate that the latter is both balanced and proportionate.

Work
The study comprises the following tasks (although presented as a linear sequence, they actually best approached as an iterative process of optimisation):
- Identify and describe relevant characteristics and features of the development and its design
- Estimate the type and levels of traffic generated by the site through its occupation and use
- Estimate the associated emissions and health damage caused by this traffic
- Select and specify on-site mitigation and estimate associated cost and emission benefits
- Consider and, if justified, propose a financial contribution for further compensatory measures
- Present findings in a summary report, supplemented by detailed tables and technical notes (results should include the headline indices, identified in para. 3.9 of the main text)

Assurance
The report should contain a statement to the effect that in undertaking the work, efforts have been made to ensure that:
- The work reflects relevant guidance and reporting is concise, transparent and of good quality.
- Base design is well described and reflects good environmental design principles
- Estimated fleet activity and impacts are based on reasonable and realistic assumptions
- Appropriate effort has been made to identify, assess and propose mitigation
- Balance of mitigation reflects the mitigation hierarchy and also local site characteristics
- Scale of mitigation is commensurate to the emissions harm

Further Guidance
Detailed Guidelines for undertaking emission assessment are provided by the Low Emission Partnership. The most recent update should be followed [In Jan-17, this was EMA-TG-2.0].
Suggest simply reference the LEP method, but also need to indicate preferred method options, which apply, including: (i) method variants AC/AB/RC/RB (ii) protocols for current use, (iii) protocols for linked/diverted trips.
B3 Concentration Assessment

The purpose of concentration assessment is to examine likely changes in local pollutant concentrations as a result of a proposed development. The following provides a checklist for undertaking such an assessment.

This checklist is intended as a guide. It is not exhaustive and other elements may be required. Before an assessment is undertaken the methodology, datasets and assumptions; and also the reporting/evaluation requirements should be agreed with the Local Authority.

Aims
- Assess the existing air quality in the study area
- Predict the future air quality without the development
- Predict the future air quality with the development (without mitigation)
- Predict the future air quality with the development (with mitigation)

Methodology
This will include:
- Pollutants to be modelled and the standards which apply.
- Data: meteorological, background, traffic and emissions
- Also, inclusion of the effects of local committed developments (cumulative effects)
- Output parameters
  - The model to be used, including:
    + whether screening or local scale dispersion
    + use of individual receptors or contour modelling
    + location of receptors (or area for contour modelling)
    + model validation

Report
Should present all relevant detail on the following:
- The development
- The study area (including receptors or the area for contour modelling and any sensitive sites)
- Air quality standards and objectives
- Methodology (see above)
- Modelling results (presented with a clear summary alongside all supporting data).
- Model validation
- Evaluation of results (see below)

Evaluation
Should include, as a minimum:
- Changes in emissions to air as a result of the development, by source, pollutant and time.
- The impact that these emissions will have on ambient air quality (pollutant concentrations).
- The likely changes in population exposure over time.
- Any exceedances of the NAQS air quality objectives, or EU limit values brought about by the development, or any worsening of a current breach, including the geographical area affected.
- If the development will compromise any aspects of the local authority’s Air Quality Strategy, Corporate Plan, Transport plans or Air Quality Action plans.

Further Guidance
EPUK guidance on Planning for Air Quality provides useful technical context particularly in relation to concentration assessment. However, it must be emphasised that guidance contained within the Lancaster District guidance takes precedence.