Air Quality Technical Planning Guidance

Guidance for developers
Foreword

Local Planning Authorities have to weigh up the 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 a material consideration that Planners are required to take into account when making their plans and when taking planning decisions. Planners will be guided by specialist advice from air quality officers and consultants when making their decisions, however, in the past, this specialist advice has focussed on the “significance of impact” leading to adversarial debates on the level of impacts that a development may, or may not have on air quality. This can be baffling to the lay-person and allows air quality to steadily deteriorate because, although a development when taken in isolation may not have a significant impact on air quality, when taken in the wider context of existing levels of pollution, traffic growth and other development it can contribute to a very steady decline in air quality.

This technical guidance aims to reverse the direction of travel from an approach which allows air quality to steadily deteriorate, to a more proactive approach which recognises that most development, however large or small, can have an impact on air quality and provides for a proportionate level of mitigation to be put in place to achieve sustainable development.

In addition, this guide simplifies the assessment model which means that, for the vast majority of small and medium development, developers can simply select from a suite of mitigation options rather than pay for consultancy services. This approach also provides greater certainty to the development management process, so that developers, planners and the public can have greater confidence in the scale and kind of mitigation that will be required to make a development sustainable in air quality terms.

This technical guide will allow the Local Planning Authority to support its Local Polices and Plans and to achieve and maintain air quality objectives, which ultimately protect public health.

Acknowledgements

This Guide has arisen from the West Yorkshire Low Emissions Strategy Group (WYLES) with specific input from the Air Quality Officer at Wakefield Council. We are grateful for this work and the permissions granted to use this Guide in Doncaster.
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Summary

This technical guidance aims to help the planning authority deliver national air quality objectives through cost effective service planning brought about by the joint working across those sections of the authority that can influence air quality. The spatial planning system has an important role to play in improving air quality and reducing exposure to air pollution. Whilst planning policy cannot solve immediate air quality issues, suitably employed it can ensure that any likely scheme impacts are reasonably mitigated and future scheme users are able to make green vehicle choices.

This technical guidance deals primarily with those pollutants regulated under the Local Air Quality Management (LAQM) regime and the impacts of traffic emissions, although the increasing use of biomass boilers is becoming an important local planning issue, in terms of air quality. The assessment and control of dust impacts during demolition and construction is also considered, as dusts contribute to airborne particulate matter, as well as dust soiling which is considered under nuisance regulation. Greenhouse gas emissions are not addressed explicitly, as they are covered by other initiatives, but synergies exist between measures to minimise climate change and local air quality impacts.

The guidance provides a template for integrating air quality considerations into land-use planning and development management policies that can influence the reduction of road transport emissions and to be used to update air quality action plans.

The air quality assessment process follows a three stage process:

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

The assessment process is summarised in the flow chart overleaf.

Pre-Planning Discussions

In order to avoid unnecessary delays in the planning process and ensure optimum scheme design and sustainability, it is vital for communication at an early stage in any significant proposal. It is therefore essential that pre-application discussions with the relevant air quality personnel are undertaken to confirm the classification of the development and the assessment requirements.
Figure 1: The Air Quality Assessment and Mitigation Flow Chart

Is an Air Quality Assessment (AQA) required?

<table>
<thead>
<tr>
<th>Minor</th>
<th>Medium</th>
<th>Major</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does not meet any criteria on Table 1</td>
<td>Meets any criteria in Table 1 but not Table 2</td>
<td>Meets criteria in Table 1 &amp; 2</td>
</tr>
</tbody>
</table>

Step 2 – Assessment Stage

<table>
<thead>
<tr>
<th>Minor</th>
<th>Medium</th>
<th>Major</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is additional exposure likely as per the criteria on page 9?</td>
<td>Is additional exposure likely as per the criteria on page 10?</td>
<td>AQA and Damage costs calculation required.</td>
</tr>
</tbody>
</table>

No AQA is required. Developer to refer to SPD parking standards.

Exposure statement required.

Exposure statement and damage costs calculation required.

Step 3 – Mitigation

<table>
<thead>
<tr>
<th>Minor</th>
<th>Medium</th>
<th>Major</th>
</tr>
</thead>
</table>

*There is no safe level of exposure to particulate pollution, however all applications must ensure as a minimum a proposal does not expose existing or future residents to levels of pollutants above the Air Quality Objectives.
Introduction

New developments have the potential to affect air quality. Local planning policy will play a significant role in ensuring that development schemes are designed to be sustainable. This guidance has been developed to:

- Introduce an air quality assessment scheme which includes the quantification of impacts, formulation of damage costs and identification of mitigation measures to offset increased emissions from development.
- Tackle cumulative impact.
- Provide a clear and consistent process to developers, planners and local communities.

Planning Policy Framework

National Policy

National planning policy is now set by the National Planning Policy Framework (NPPF). The NPPF places a general presumption in favour of sustainable development, stressing the importance of local development plans. One of its objectives states;

“Contribute to protecting and enhancing our natural, built and historic environment; including making effective use of land, helping to improve biodiversity, use natural resources prudently, minimise waste and pollution, and mitigate and adapt to climate change, including moving to a low carbon economy”.

It goes on to state (paragraphs 170 and 181) that:

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

And;

“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
Local Planning Policy

The Planning and Compulsory Purchase Act 2004, amended by the Localism Act 2011 requires planning authorities to prepare Local Plans (previously known as Local Development Frameworks), which may be made up of a single or number of documents such as:

- Core Strategy;
- Development Plan Policies;
- Site Specific Proposals;
- Area Action Plans;
- Other documents including supplementary planning documents.

The Local Plan will identify land areas for future development and include a number of strategic and development policies relating to local air quality management that fulfil the National Planning Policy Framework sustainable development criteria. This Technical Guide supports the implementation of the strategic and development policy framework. An example of current/emerging policy context is included in Appendix 1.

Local Air Quality Management

The Environment Act 1995 established a local air quality management regime. It requires local authorities to review and assess ambient air quality in their areas against health based standards for a number of specific pollutants prescribed in the Air Quality Regulations 2000 (as amended 2002). If there is a risk that levels of air pollution in any part of the authority’s area will be higher than the prescribed objectives, the authority is required to designate an Air Quality Management Area (AQMA). It is then required to produce an Action Plan which sets out the measures it intends to take in pursuit of the objectives.

It is not necessarily the case that a proposed development in an area of poor air quality will have a negative impact. However, it is important to recognise when such a development might introduce additional people into an area of poor air quality.

The declaration of an AQMA does not mean that there should be no new development within that area. Rather it means that greater weight must be given to the consideration of air quality impacts and their mitigation.

In addition, the boundary of an AQMA does not necessarily define the limit of poor air quality. The only constraint on the boundary definition is that it should be at least as large as the area of exceedence, where there is relevant exposure.

The fact that a development is within or close to an AQMA does not mean that it is necessarily affecting an area of exceedence of the objective, or that it is being affected by air pollution that exceeds the objective. On the other hand, a development could
introduce new exposure into an area of poor air quality, which has not been identified and declared as an AQMA, as previously there was no relevant exposure.

Air Quality and Emissions Mitigation Assessment Process

The process shown in Figure 1 involves a staged process:

**Stage 1: Development Classification**

Three levels of development classification are determined using criteria adapted from the Department for Transport\(^1\).

The three classes are Minor, Medium and Major.

The criteria applies as follows:

- Minor – falls below the criteria in Table 1
- Medium – meets any one of the criteria in Table 1
- Major – meets any one of the criteria in Table 1 and any one of the criteria in Table 2

Table 1 Air Quality Impact Classification Criteria
<table>
<thead>
<tr>
<th>Land Use</th>
<th>Description</th>
<th>Air Quality Assessment Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food Retail (A1)</td>
<td>Retail sale of food goods to the public – supermarkets, superstore, convenience food store</td>
<td>&gt;800 m² (GFA)</td>
</tr>
<tr>
<td>Non-Food Retail (A1)</td>
<td>Retail sale of non-food goods to the public; but includes sandwich bars or other cold food purchased and consumed off site</td>
<td>&gt;1500 m² (GFA)</td>
</tr>
<tr>
<td>Financial and professional services (A2)</td>
<td>Banks, building societies and bureaux de change, professional services, state agents, employment agencies, betting shops.</td>
<td>&gt;2500 m² (GFA)</td>
</tr>
<tr>
<td>Restaurants and cafes (A3)</td>
<td>Use for the sale of food for consumption on the premises.</td>
<td>&gt;2500 m² (GFA)</td>
</tr>
<tr>
<td>Drinking establishments (A4)</td>
<td>Use a public house, wine-bar for consumption on or off the premises.</td>
<td>&gt;600 m² (GFA)</td>
</tr>
<tr>
<td>Hot Food Takeaway (A5)</td>
<td>Use for the sale of hot food for consumption on or off the premises.</td>
<td>&gt;500 m² (GFA)</td>
</tr>
<tr>
<td>Business (B1)</td>
<td>(a) Offices other than in use within Class A2</td>
<td>&gt;2500 m² (GFA)</td>
</tr>
<tr>
<td></td>
<td>(b) Research and development – laboratories, studios.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(c) Light industry</td>
<td></td>
</tr>
<tr>
<td>General industrial (B2)</td>
<td>General industry (other than B1)</td>
<td>&gt;4000 m² (GFA)</td>
</tr>
<tr>
<td>Storage or distribution (B8)</td>
<td>Storage or distribution centres – wholesale warehouse, distribution centres and repositories.</td>
<td>&gt;5000 m² (GFA)</td>
</tr>
<tr>
<td>Hotels (C1)</td>
<td>Hotels, boarding houses and guest houses.</td>
<td>&gt;100 bedrooms</td>
</tr>
<tr>
<td>Residential institutions (C2)</td>
<td>Hospitals, nursing homes used for residential accommodation and care.</td>
<td>&gt;50 beds</td>
</tr>
<tr>
<td>Residential Institutions (C2)</td>
<td>Boarding schools and training centres.</td>
<td>&gt;150 students</td>
</tr>
<tr>
<td>Residential Institutions (C2)</td>
<td>Institutional hostels, homeless centres.</td>
<td>&gt;400 residents</td>
</tr>
<tr>
<td>Dwelling Houses (C3)</td>
<td>Dwellings for individuals, families or not more than six people in a single household</td>
<td>&gt;50 units</td>
</tr>
<tr>
<td>Non-residential Institutions (D1)</td>
<td>Medical and health services, museums, public libraries, art galleries, non-residential education, places of worship and church halls.</td>
<td>&gt;1000 m² (GFA)</td>
</tr>
<tr>
<td>Assembly and Leisure (D2)</td>
<td>Cinemas, dance and concert halls, sports halls, swimming, skating, gym, bingo, and other facilities not involving motorised vehicles or firearms.</td>
<td>&gt;1500 m² (GFA)</td>
</tr>
</tbody>
</table>

Other

1. Where a Transport Statement or Assessment is provided.
2. Any development proposing 100 or more parking spaces
3. Increase in total Annual Average Daily Traffic (AADT) of >500 vehicles
4. Increase in Heavy Duty Vehicle AADT of >50 vehicles
Table 2 Major Development Additional Classification Criteria

- Where the proposed development falls within the Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 2011 and includes air quality and/or transport as a specific likely impact.
- Proposals located within an Air Quality Management Area (AQMA).
- Proposals that could introduce or significantly alter congestion (DfT Congestion) and includes the introduction of substantial road infrastructure changes.
- Proposals that include additional HGV movements by more than 10% total trips.
- Proposals located in an area of concern, typically where the nearest monitoring results from the current Annual Status Report show a level >90% of the relevant objective.
- Proposals requiring a Permit under the Environmental Permitting Regulations.
- Where Combined Heat and Power (CHP), biomass or biofuel boilers are proposed for heating or power.

Once the development has been classified it is necessary to go to the next stage, where possible impacts are screened and/or assessed.

Stage 2: Assessment of Impacts

Stage 2 Minor Proposals

Whilst smaller developments may not in themselves create an additional air quality problem they will add to local air pollution and, potentially, introduce more people to existing levels of poor air quality. An exposure assessment may be required.

Exposure Assessment

The requirement for an assessment of the likelihood of introducing additional exposure and/or receptors will be triggered using the following criteria:

- The proposal is adjacent to or within an AQMA;
- The proposal is in a location 20metres from roads at or above the relevant national objective highlighted on the DEFRA GIS modelled maps (http://uk-air.defra.gov.uk/data/gis-mapping).

- The proposal is within 20metres of roads with more than 10,000 AADT and is one of the following Land Use types;

  C1 to C3 in table 1
  C4 (Homes In Multiple Occupation)
  D1 in table 1.

The outcome of the exposure assessment will determine the levels of mitigation required to make the development acceptable. Should there be no acceptable mitigation the recommendation to the planning officer will be to consider refusing the proposal on air quality grounds.

If the proposal does not meet the criteria of Stage 2 default mitigation shall be applied.
Stage 2 Medium Proposals

These developments may not in themselves create an additional air quality problem but will add to local air pollution and potentially introduce more people to existing levels of poor air quality. The cumulative impact of such proposals on air quality must be recognised.

An assessment of the pollutant emissions costs arising due to the development will be required, as per the methodology described for Major proposals. An assessment of the likelihood of introducing additional exposure and/or new receptors will be required if the proposal also meets the criteria below:

- The proposal is adjacent to or within an AQMA;
- The proposal is in a location 20metres from roads at or above the relevant national objective highlighted on the DEFRA GIS modelled maps (http://uk-air.defra.gov.uk/data/gis-mapping).

- The proposal is within 20metres of roads with more than 10,000 AADT and is one of the following Land Use types:
  - C1 to C3 in table 1
  - C4 (Homes In Multiple Occupation)
  - D1 in table 1.

The outcome of the damage cost assessment will determine the levels of mitigation required to make the development acceptable. Should there be no suitable mitigation the recommendation to the planning officer will be to consider refusing the proposal on air quality grounds.

If the proposal does not meet the criteria in Stage 2 default mitigation shall be applied.

Stage 2 Major Proposals

The scale and nature of this type of proposal is such that a detailed air quality assessment will be required to determine the impact on public health and the local environment.

The assessment requires:

The change in pollutant concentrations, due to the proposal, to be identified. This shall include cumulative impacts arising, during both the demolition/construction and the operational phases of the development. Mitigation measures should be identified and modelled where practicable and;

A calculation of pollutant emissions costs from the development shall be determined.

- The methodology to be used for the determination of pollutant concentration change shall meet the requirements of the Department for the Environment, Food and Rural Affairs (DEFRA) Technical Guidance Note LAQM TG. (16)2. Further details of the air quality assessment requirements are shown in Appendix 2.
The pollutant emissions costs calculation will identify the environmental damage costs associated with the proposal and determine the amount (value) of mitigation that the LPA expect to be spent on the measures to mitigate the impacts. The calculation utilises the most recent DEFRA Emissions Factor Toolkit\(^3\) to estimate the additional pollutant emissions from a proposed development and the latest DEFRA IGCB Air Quality Damage Costs for the specific pollutant of interest, to calculate the resultant damage cost\(^4\).

The calculation process includes:
- Identifying the additional trip rates generated by the proposal (from the Transport Assessment);
- The emissions calculated for the pollutants of concern (NOx and PM10) [from the Emissions Factor Toolkit];
- The air quality damage costs calculation for the specific pollutant emissions (from DEFRA IGCB);
- The result is accumulated to cover a five year period.

The calculation is summarised below with further details of the process along with an example calculation shown in Appendix 3.

**Box 1: Road Transport Emission Calculation Summary**

\[
\text{Cost of Road Transport Emission Increase} = \sum \text{[Estimated trip rate for 5 years x Emission rate per 10km per vehicle type x Damage Costs]}
\]

Should there be no acceptable mitigation the recommendation to the planning officer will be to consider refusing the proposal on air quality grounds.

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4 - [https://www.gov.uk/guidance/air-quality-economic-analysis](https://www.gov.uk/guidance/air-quality-economic-analysis)
Stage 3: Mitigation

The outcome of Stage 2 (Assessment) identifies the level of air quality impact and is then used to determine the level of mitigation required to negate the potential effects upon health and the local environment, if the proposal does not consider this in the scheme design.

The scale of damage cost, where applicable, will determine the level of appropriate mitigation required for specific proposals. Measure identification will be assisted by:

- The outcomes from the Transport Statement/Assessment;
- Specific needs identified in site specific spatial policy allocations;
- Travel Awareness/Planning and/or Highway Development where these are required;
- Defra air quality guidance (Defra Measures Guidance)

Where mitigation is not integrated into a proposal, the Local Planning Authority will require this through planning conditions.

Default mitigation measures are presented for each type of proposal that demonstrate a minimum requirement. This is not an exhaustive list and will be adapted for particular locations and needs identified by relevant officers and by the scale of damage costs. The authority will consider innovative measures aimed at protecting and/or improving local air quality.

Type 1 (Minor) proposal Mitigation

If the proposal meets the exposure criteria in Stage 2, mitigation measures from the applicant will be required to reduce the level of exposure; otherwise default mitigation shall be applied by the LPA. This may be in the form of:

- Determining the extent of exposure either by short-term screening monitoring or utilising the distance calculation provided by Defra (DEFRA Distance) at the proposed location to identify the concentrations;
- Redesigning the proposal to reduce the ingress of pollution;
- Including a stand-off distance and/or vegetation boundary from the development.

Paragraph 101 of the NPPF requires a proposal to ‘be designed to enable charging of plug-in and other ultra-low emission vehicles in safe, accessible and convenient locations’.

Therefore, the default mitigation in Box 2 includes a standard level of provision to be provided by relevant development. This is expected as a minimum plus any other mitigation measures that arise from the exposure assessment.
Box 2: Type 1 (Minor) Proposal Default Mitigation

Residential:
1 charging point per unit (dwelling with dedicated parking) or 1 charging point per 10 spaces (unallocated parking).

Commercial/Retail:
10% of parking spaces which may be phased with 5% initial provision and the remainder at an agreed trigger level.

Industrial:
10% of parking spaces which may be phased with 5% initial provision and the remainder at an agreed trigger level.

Demolition/Construction:
Adherence to the London Best Practice Guidance for all demolition and construction works.

Details of the electric charging specification are shown in Appendix 4.

Type 2 (Medium) Proposals Mitigation

Proposals meeting the Type 2 criteria in table 1 are likely to require a detailed Travel Plan.

The NPPF requires a Travel Plan where “developments that will generate significant amounts of movement”.

Travel Plan guidance is available online as Planning Practice Guidance; the most current version should be used. Discussions should take place with the appropriate Transport Officers to ensure any Travel Plan meet the basic requirements.

Generally, in respect of the Travel Plan it is essential that:

- The travel plan should be approved by the LPA. Pre-application advice will therefore be essential.
- The agreed targets and objectives included in the travel plan are secured for implementation by the mutual agreement of the local authority and the developer/applicant (normally by means of a Section 106 agreement).
- The outputs of the travel plan (typically trip levels and mode split) are annually monitored against the agreed targets and objectives by the Transport section of Doncaster Council.
- Should the travel plan not deliver the anticipated outputs or meet the targets and objectives further mitigation/alternative/compensation measures need to be identified and implemented.
- A named co-ordinator is essential to the success of the travel plan. For larger schemes a commitment in terms of staff resource allocation will be expected.

Default mitigation measures that should be incorporated into the scheme design include those in Box 3. The list is not exhaustive and there may be additional issues that are site-specific and reflect local conditions.
Box 3 Type 2 (Medium) Proposal Default Mitigation

- Minor proposal mitigation
- Travel plan including agreed mechanisms for discouraging high emission vehicle use and encouraging modal shift (i.e. public transport, cycling and walking) as well as the uptake of low emission fuels and technologies.
- Improved pedestrian links to public transport stops.
- Provision of new bus stop infrastructure including shelters, raised kerbing, information displays.
- Provision of subsidised or free ticketing (Corporate and residential Metrocards, Student Metrocards).
- Site layout to include improved pedestrian pathways to encouraging walking.
- Improved convenient and segregated cycle paths to link to local cycle network.

Commercial Specific:
- All commercial vehicles should comply with current or the most recent European Emission Standards from scheme opening, to be progressively maintained for the lifetime of the development.
- Fleet operations should provide a strategy for reducing emissions, including the uptake of low emission fuels and technologies such as ultra-low emission service vehicles.

Type 3 (Major) Proposal Mitigation

The pollution damage costs attributed to the predicted emission changes will determine the level of mitigation compensation required to negate their impact.

A suite of default compensation measures beyond the proposal scheme design are listed below. This is not an exhaustive list and will be adapted for particular locations and needs as identified by relevant officers. The type, scale and the specifics of measures should be agreed with the planning authority.
Support measures to reduce the need to travel:
- Alternative working practices – flextime, teleworking, homeworking, videoconferencing, compressed work periods.
- Local sourcing of staff, products and raw materials.
- Development and use of hub distribution centres employing low emission deliveries.
- Provision of discounted on-site shopping, eating, child-care, banking facilities.

Support measures to reduce polluting motorised vehicle use:
- Development of car clubs and car sharing with financial incentives and promotion.
- Use of pooled low emission vehicles – cars, vans, taxis, bicycles.
- Support smart driving training schemes.
- Provision of dedicated low emission shuttle bus including managed pick-up and drop-off.
- Contribution to the emerging low emission vehicle refuelling infrastructure.
- Contribution to low emission waste collection services.
- Incentives for the take-up of low emission vehicle technologies and fuels.
- Sign-up to the South Yorkshire ECOstars or other accepted Environmental Fleet Recognition Scheme.

Measures to support improved public transport:
- Provision of new or enhanced public transport services to the site.
- Shuttle services to public transport interchange, rail station or park and ride facilities.
- Support improving information systems for public transport.
- Supporting free city bus expansion schemes.
- Promoting low emission bus service provision.
- Support air quality monitoring programmes.

Further measures to promote walking and cycling:
- Improvements to district walking and cycling networks including lighting, shelters, and information points and timetables.
- Support cycle training and awareness schemes.
- Bike/e-bike hiring schemes.
- Guaranteed ride home in emergencies.
- Support secure and safe cycle parking facilities.

Measures to promote sustainable travel plans:
- Support local travel to school and school travel plans initiatives.
- Marketing aimed at persuading a switch to sustainable modes with incentives.
- Promotion of subsidised/sponsored travel plan measures through social and other media.
- Supporting community/local organisation groups to promote sustainable travel.
The air quality mitigation measures and travel plan measures should not be duplicated. The air quality damage costs should provide for additional measures over and above those required to meet sustainable transport initiatives.

Such agreed measures will be taken forward by condition where possible, or through the use of Section 106 agreements.

**Proposal Mitigation Statement**

Each development will require a brief mitigation statement which must include:
- The calculated pollutant emission cost (Major Proposals).
- Proposed mitigation/compensation measures.
- Estimated mitigation cost (Major Proposals) that is equivalent to the value of the emissions calculation (appropriate to the type and size of development and local policy requirements).
- A proposed demolition/construction management plan that includes; a brief project description and likely sources of dust emissions, measures to be adopted to minimise dust emissions, emergency measures to be adopted in the event of an incident and incident logging and reporting procedures.

**Validation checklist**

A completed checklist is available for each of the proposals, completion of which will aid the developer and Council to ensure all elements of the assessment have been completed. This checklist should be included with the application and any AQA. Further details are provided in Appendix 5.

**Planning Recommendation**

The impact on air quality is a material consideration in the determination of a planning application. Each decision must be a balance of all material considerations depending on the individual merits and circumstances. The weight to be given to the impact on air quality in the consideration of a planning application and the acceptability of proposed mitigation measures lies with the relevant local planning authority. Any agreed measures will be taken forward by condition where possible, or through the use of Section 106 agreements.
Doncaster Council are developing the Local Plan, the current Core Strategy was adopted in 2012 and contains all the policies pertinent to Development in the Borough at this time.

Whilst the Core Strategy should be read as a whole, the policy for air quality should be read in conjunction with Policy CS14 (Design and Sustainable Construction). Policy CS2 (Growth and Regeneration Strategy) is also relevant as it supports developments within existing urban locations, where possible, which will maximise access to local services and public transport. Policy CS9 (Providing Travel Choice) also establishes an approach to supporting more sustainable transport modes, including public transport, walking and cycling.

Policy CS18 compliments these policies by highlighting the link to air quality, and also the role of low emission strategies/cleaner transport fuels. The latter could include making use of new technology and demand management measures to reduce energy consumption such as electric or hydrogen gas fuelled vehicles, refuelling stations at existing or proposed petrol stations and electric charging points within travel intensive developments. These measures should complement other plans and mitigation options such as green travel plans, monitoring and the provision of public transport infrastructure.

Consideration of air quality impacts will need to include any potential impacts on the borough’s natural environment (see Policy CS16: Valuing our Natural Environment).

Policy CS18 – Air, Water and Agricultural Land
Doncaster’s air, water and land resources will be conserved, protected and enhanced, both in terms of quantity and quality, based on the principles set out below:
A) Proposals will be supported which contribute to improvements in air quality, including by:
   1. being designed, managed and, as far as is consistent with the Growth and Regeneration Strategy (Policy CS2), located, to reduce congestion/air pollution and promote more sustainable transport options;
   2. within or adjoining Air Quality Management Areas (especially within Doncaster town centre and along the M180, A1 and M18 motorway corridors) and other areas experiencing air pollution, demonstrating how any effects on air quality will be mitigated, especially in relation to sensitive uses or areas (e.g. nature conservation sites) and having regard to the targets of the Doncaster Air Quality Action Plan; and;
   3. where relevant, incorporating low emission technologies and cleaner transport fuels to minimise the adverse effects of road and air travel.

The Development Guidance and Requirements SPD include standards relevant to Electric Vehicle Charging and as a minimum must be applied to new development across Doncaster.
Appendix 2 Detailed Air Quality Assessments

Air Quality Assessment Protocol to determine the Impact of Vehicle Emissions from Development Proposals

An air quality assessment should clearly establish the likely change in pollutant concentrations at relevant receptors resulting from the proposed development during both the construction and operational phases. It must take into account the cumulative air quality impacts of committed developments (i.e. those with planning permission).

Key Components of an Air Quality Assessment

The assessment will require dispersion modelling utilising agreed monitoring data, traffic data and meteorological data. The modelling should be undertaken using recognised, verified local scale models by technically competent personnel and in accordance with LAQM TG(16). The study will comprise of:

The assessment of the existing air quality in the study area for the baseline year with agreed receptor points and validation of any dispersion model;

The prediction of future air quality without the development in place (future baseline or do-nothing)

The prediction of future road transport emissions and air quality with the development in place (with development or do-something)

The prediction of future road transport emissions and air quality with the development (with development or do-something) and with the identified mitigation measures in place.

The assessment report should include the following details:

A detailed description of the proposed development including;

- Identify any on-site sources of pollutants;
- Overview of the expected traffic changes
- The sensitivity of the area in terms of objective concentrations
- Local receptors likely to be exposed
- Pollutants to be considered and those scoped out of the process

The relevant planning and other applicable policy context for the assessment.

A description of the relevant air quality standards and objectives.

The assessment method details including model, input data and assumptions;

For a traffic assessment:
- Traffic data used for the assessment;
- Emission data source;
- Meteorological data source and representation of area;
- Baseline pollutant concentration including any monitoring undertaken;
- Background pollutant concentration;
- Choice of base year
- Basis for NOx: NO2 calculations
- A modelling sensitivity test for future emissions with and without reductions.

For point source assessment:
- Type of plant;
- Source of emission data and emissions assumptions;
- Stack parameters – height, diameter, emission velocity and exit temperature;
- Meteorological data source and representation of area;
- Baseline pollutant concentrations;
- Background pollutant concentrations;
- Choice of baseline year;
- Basis for deriving NO2 from NOx.

Model verification for all traffic modelling following relevant Defra Technical Guidance.

Identification of sensitive locations.

Description of baseline conditions.

Description of demolition/construction phase impacts.

Summary of assessment results:
- Impacts during demolition/construction;
- Impacts during operational phase;
- The estimated emissions change of local air pollutants;
- Identified breach or worsening of exceedences of objectives (geographical extent)
- Whether Air Quality Action Plan is compromised;
- Apparent conflicts with planning policy and how they will be mitigated.

Mitigation measures and expected emissions reduction from such measures.

**Air Quality Monitoring**

In some cases it will be appropriate to carry out a short period of air quality monitoring as part of the assessment work. This will help where new exposure is proposed in a location with a complex road layout and/or topography, which will be difficult to model or where no data is available to verify the model. Monitoring should be undertaken for a minimum of six months using agreed techniques and locations with any adjustments made following Defra technical guidance.

**Assessing Demolition/Construction Impacts**

The demolition and construction phases of development proposals can lead to both nuisance dust and elevated fine particulate (PM10 and PM2.5) concentrations. Modelling is not appropriate for this type of assessment, as emissions rates vary depending on a combination of the construction activity and meteorological conditions,
which cannot be reliably predicted. The assessment should focus on the distance and duration over which there is a risk that impacts may occur. The Institute of Air Quality Management (IAQM)\(^5\) has produced a number of definitive guidance documents to which this guidance refers. The document ‘Guidance on the Assessment of Impacts of Construction on Air Quality and the Determination of their Significance’ should be the reference for reporting construction assessment.

Cumulative Impacts

The NPPF (paragraph 181) recognises that a number of individual development proposals within close proximity of each other require planning policies and decisions to consider the cumulative impact of them. Difficulties arise when developments are permitted sequentially, with each individually having only a relatively low polluting potential, but which cumulatively result in a significant worsening of air quality. This will occur where:

- A single large site is divided up into a series of units, such as an industrial estate or retail park;
- A major development is broken down into a series of smaller planning applications for administrative ease; and
- There are cumulative air quality impacts from a series of unrelated developments in the same area.

The first two cases the cumulative impact will be addressed by the likelihood that a single developer will bring forward an outline application for the whole site which should include an air quality assessment as part of an Environmental Assessment. For major developments that are broken down into a series of smaller planning applications, the use of a ‘Master or Parameter Plan’ that included an air quality assessment will address the cumulative impact.

The following template tables have been included for use by consultant’s completing an AQA. The tables contain a reference for all the information that should be contained in all assessments. These formats are optional but all information should be provided as indicated, any omissions will result the AQA being returned prior to review.

\(^5\) – IAQM [www.iaqm.co.uk](http://www.iaqm.co.uk)
### Table A: NO2 Concentrations for baseline, opening year do-minimum and do-something scenarios.

<table>
<thead>
<tr>
<th>Receptor Ref</th>
<th>Baseline (Current Year)</th>
<th>Opening DM</th>
<th>Opening DS</th>
<th>Change (%) between DS/DM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monitoring Point as Receptor (Verification Site)</td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>Monitoring point</td>
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<tr>
<td>Receptor x</td>
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<tr>
<td>Receptor y</td>
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<tr>
<td>New receptor</td>
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<td>Etc</td>
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<td></td>
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</tbody>
</table>

### Table B: Model Input Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Details</th>
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</thead>
<tbody>
<tr>
<td>Model Name and version</td>
<td></td>
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<tr>
<td>Met Data (Location &amp; Year)</td>
<td></td>
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<tr>
<td>Roughness</td>
<td></td>
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<tr>
<td>Monin-Obukhov Length</td>
<td></td>
</tr>
<tr>
<td>NOx to NO2 Conversion Method</td>
<td></td>
</tr>
<tr>
<td>Background Information (Grid Refs and dates)</td>
<td></td>
</tr>
<tr>
<td>Emission Factors Toolkit Version</td>
<td></td>
</tr>
<tr>
<td>Emissions Factor Years Used</td>
<td></td>
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<tr>
<td>Vehicle Split</td>
<td>Diesel Car Petrol Car M/cycle LGV Bus HGV (artic) HGV (rigid)</td>
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<tr>
<td>Euro Vehicle Split</td>
<td></td>
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</tbody>
</table>

### Table C: Traffic Flow Data used within screening and modelling exercise

<table>
<thead>
<tr>
<th>Link/Road Name</th>
<th>Grid Reference</th>
<th>Annual Average Daily Traffic and % HGV</th>
<th>Baseline</th>
<th>Opening Year DM</th>
<th>Opening Year DS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td>AADT %HGV AADT %HGV AADT %HGV</td>
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</tbody>
</table>

Please cite the reference for the traffic data.

### Table D: Verification Exercise

<table>
<thead>
<tr>
<th>Location</th>
<th>Monitored NO2 in µg/m3</th>
<th>Modelled NO2 in µg/m3</th>
<th>% Difference</th>
<th>Within 10%? Y/N</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>
Include an appropriate graph comparing modelled and monitored results. If not within 10% then an adjustment factor must be calculated. Please include additional tables and graphs as appropriate.
Appendix 3 Emissions and Damage Cost Calculator Example

The calculation utilises the current Emissions Factor Toolkit (EFT)* to determine the transport related emissions from a development proposal. If the proposal is to include alternative fuels or technology i.e. LPG, EV etc, then there are “advanced options” within the EFT to accommodate this.

*http://laqm.defra.gov.uk/review-and-assessment/tools/emissions.html#eft

A screen shot of the input and output pages are shown below:

Input

[Input Screen Image]

Output Screen

[Output Screen Image]
The output is in kg of specified pollutant per year and requires converting to tonnes per year. This is then multiplied by the IGCB damage costs for the specified pollutant. The following example demonstrates the calculation based on a development with 10 domestic properties.

**EFT Input:**

- 10 household (urban not London) (NOx and PM10)
- $X$ 27 (trip/traffic ratio for 10 houses)
- $X$ cars only (0% HGV)
- $X$ 50kph (avg. speed)
- $X$ 10km (NTS UK avg.)

**EFT Output = 32.55kg/annum (NOX) & 3.795kg/annum (PM10)**

\[ 0.0325 \text{tonnes/annum (NOx)} \times 955/\text{tonne (NOx)} + 0.003795 \text{tonnes/annum (PM10)} \times 48,517/\text{tonne (PM10)} \]

\[ = \ 31.08 \times £184.15 \]

\[ = \ 155.42 \times 5 \text{ (years)} \]

\[ = \ £155.42 \times £920.76 \]

**Total = £1,076**

**Notes:**

1. Trip Rates are sourced from the Transport Assessments and local authority where available.
2. Trip Length uses the National Travel Survey* - (UK average = 10km).
3. The IGCB damage costs are the central estimates (currently NOx = £955/tonne & PM10 transport average £48,517).

Appendix 4 EV Charging Specification

Electric Vehicle Charging Point Specification:

All installations should meet the latest relevant electrical safety requirements. Electrical safety rests with the developer at all times.

EV ready domestic installation

● Cable and circuitry rating should be of adequate size to ensure minimum continuous current demand for the vehicle of 16A and a maximum demand of 32A (which is recommended for Eco developments)

● A separate dedicated circuit protected by an RCBO should be provided from the main distribution board, to a suitably enclosed termination point within a garage, or an accessible enclosed termination point for future connection to an external charge point.


● If installed in a garage all conductive surfaces should be protected by supplementary protective equipotential bonding. For vehicle connecting points installed such that the vehicle can only be charged within the building, e.g. in a garage with a (non-extended_ tethered lead, the PME earth may be used. For external installations the risk assessment outlined in the IET code of practice must be adopted, and may require an additional earth stake or mat for the EV charging circuit. This should be installed as part of the EV ready installation to avoid significant cost later.

EV ready commercial installations

Commercial and industrial installations may have private 11,000/400 V substations where TN-S supply may be available, simplifying the vehicle charging installation design and risk analysis. It is therefore essential for developers to determine a building’s earthing arrangements before installation.

Commercial vehicles have a range of charge rates and it is appropriate to consider a 3-phase and neutral supply on a dedicated circuit emanating from a distribution board. More than one EV charging station can be derived from a source circuit, but each outlet should be rated for a continuous demand of 63Amps. No diversity should be applied throughout the EV circuitry. Three phase RCBO’s should be installed and the supply terminated in a switched lockable enclosure. If an external application (for example car park or goods yard) is selected, the supply should be terminated in a feeder pillar equipped with a multi-pole isolation switch, typically a 300mA RCD, and a sub-distribution board (if more than one outlet is fed from the pillar). If an additional earthing solution is required, the earth stake can be terminated within this pillar. See IET guideline risk assessment.
Appendix 5 Validation Checklist

Development Proposal: ............................................................................................................................

Pre-Planning Discussions: Yes/No (delete as applicable)

Classification: Minor/Medium/Major (delete as applicable)

Explain briefly the rationale for classification: (e.g. did not meet criteria laid down in table 1) ................................................................................................................................................................
................................................................................................................................................................
................................................................................................................................................................

Assessment type submitted: Exposure only / Exposure with Emission Cost Calculation / Detailed Air Quality Assessment with Emissions Cost Calculation (please circle)

Please make sure that the relevant methodology has been followed and all information has been provided.

Mitigation Statement: Yes/No (delete as applicable)

Please make sure that the relevant information has been provided including emissions costs assessment, mitigation measures and costing/predicted impact and Construction Management Plan.

Signature: ................................................................................................Print Name: .................................................................

Position Held: ................................................................................................Date: .................................................................
References


Department for Environment, Food & Rural Affairs, Local Air Quality Management: Technical Guidance (16), (February 2018)  
https://www.google.co.uk/search?q=laqm+technical+guidance&rlz=1C1GGRV_enGB751GB751&oq=LAQM&aqs=chrome.2.69i57j0j69i59j69i65j69i60l2.4279j0j7&sourceid=chrome&ie=UTF-8

Department for Environment, Food & Rural Affairs, Emissions Factors Toolkit,  

Department for Environment, Food & Rural Affairs, Air Quality Economic Analysis (2015)  

Department for Transport (2017) Guidance on Transport Assessment,  

Institute of Air Quality Management, Guidance on land-use planning and development control: Planning for air quality (January 2017) http://iaqm.co.uk/guidance/

Institute of Air Quality Management, Assessment of dust from demolition and construction, (2014) http://iaqm.co.uk/guidance/

Ministry of Housing, Communities & Local Government, National Planning Policy Framework, (July 2018)  

West Yorkshire Low Emissions Group, West Yorkshire Technical Planning Guidance (2016),  