Selby District Council

Air Quality

Planning Guidance Note

April 2014

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1 Introduction

1.1 Local Air Quality Management

Local authorities in the UK have a statutory duty to manage local air quality under Part IV of the Environment Act 1995. They are required to carry out routine reviews and assessments of air quality in their area against standards and objectives prescribed in regulations[1] for the purpose of local air quality management (LAQM).

Where exceedences of Air Quality Objectives are considered likely, the local authority must declare Air Quality Management Areas (AQMAs) and prepare Air Quality Action Plans (AQAPs) setting out the measures it intends to put in place in pursuit of the objectives.

The fact that poor air quality leads to poor human health is widely accepted and documented and forms the basis for the existence of the EU Air Quality Directives and the LAQM system in the UK. Air pollution has been linked to asthma, chronic bronchitis, heart and circulatory disease, and cancer. It is known to have both acute short-term and chronic long term impacts.

1.2 Local Context

The district of Selby occupies approximately 600km^2 of predominantly rural land in the southernmost part of North Yorkshire and includes the main towns of Selby, Tadcaster and Sherburn-in-Elmet. The population is approximately 83,000.

Major industrial sources in the area include two large coal fired power stations (Eggborough and Drax), and a third (Ferrybridge) located on its western boundary in Wakefield, outside the authority area. The M62 motorway runs through the southern part of the district, and the A1(M) runs along the western boundary. Other major roads in the district include the A19 which runs from the south through Selby to York, the A63 which runs west to east past Selby and the A64 which runs across the north of the district linking Leeds to Tadcaster and York. Selby town itself is also served by a bypass taking through traffic to the south of the town centre linking the A63 in the west to the A19 in the north.

The rail network consists of the East Coast Main Line running from the south of the district to York in the north and district lines linking the cities of York, Leeds and Hull, to Selby and the smaller stations within the district. There are also two smaller lines which link Knottingley to Goole and Doncaster in the south of the district. Other potential major contributors to the air quality include the breweries in Tadcaster, glass works at Eggborough, block manufacturing in the south of the district, limestone quarries along the A1(M) corridor, various waste transfer stations and a coal colliery.

[1] England: The Air Quality (England) Regulations 2000 (SI 928), The Air Quality (England) (Amendment) Regulations 2002 (SI 3043),

Since 1997, Selby District has been carrying out Review and Assessment of air quality in their area. SDC have not, to date, been required to declare any Air Quality Management Areas (AQMAs), although the authority has been undertaking additional monitoring in New Street, Selby and Bridge Street, Tadcaster[2] for Nitrogen oxides. Currently a detailed assessment of New Street, Selby is being carried out[2].

1.3 Legislative Framework

The air quality objectives applicable to LAQM in England are set out in the Air Quality (England) Regulations 2000 (SI 928), The Air Quality (England) (Amendment) Regulations 2002 (SI 3043). This table shows the objectives in units of microgrammes per cubic metre µg/m^3 (milligrammes per cubic metre, mg/m^3 for carbon monoxide) with the number of exceedences in each year that are permitted (where applicable).

Table 1.1 Air Quality Objectives included in Regulations for the purpose of LAQM in England

Pollutant	Air Quality Objective		Date to be achieved by
	Concentration	Measured as	
Benzene	16.25 µg/m^3	Running annual mean	31.12.2003
	5.00 µg/m^3	Annual mean	31.12.2010
1,3-Butadiene	2.25 µg/m^3	Running annual mean	31.12.2003
Carbon monoxide	10 mg/m^3	Running 8-hour mean	31.12.2003
Lead	0.50 µg/m^3	Annual mean	31.12.2004
	0.25 µg/m^3	Annual mean	31.12.2008
Nitrogen dioxide	200 µg/m^3 not to be exceeded more than 18 times a year	1-hour mean	31.12.2005
	40 µg/m^3	Annual mean	31.12.2005
Particulate Matter (PM_{10}) (gravimetric)	50 µg/m^3, not to be exceeded more than 35 times a year	24-hour mean	31.12.2004
	40 µg/m^3	Annual mean	31.12.2004
Sulphur dioxide	350 µg/m^3, not to be exceeded more than 24 times a year	1-hour mean	31.12.2004
	125 µg/m^3, not to be exceeded more than 3 times a year	24-hour mean	31.12.2004
	266 µg/m^3, not to be exceeded more than 35 times a year	15-minute mean	31.12.2005

EU Limit Values

The Environment Act 1995, and the subsequent National Air Quality Strategy (NAQS) (1997), were pre-cursors to the European Union Air Quality Directives that emerged in the late 1990s, and were consolidated into a single Ambient Air Quality Directive in 2008. The 2008 ambient air quality directive (2008/50/EC) sets legally binding limits for concentrations in outdoor air of major air pollutants that impact public health such as particulate matter (PM_{10} and $PM_{2.5}$) and nitrogen dioxide (NO_2). As well as having direct effects, these pollutants can combine in the atmosphere to form ozone, a harmful air pollutant (and potent greenhouse gas).

The UK Air Quality Objectives take account of EU limit values and are either identical or more stringent. Air Quality assessments are therefore commonly focussed on the UK objectives. In some circumstances (e.g. formal Environmental Impact Assessments) developers will need to take account of EU limit values. In such cases, there may also be a requirement to assess the impact of certain pollutants on ecosystems and vegetation.

Developers are strongly encouraged to discuss the scope of any air quality assessment (including the appropriateness of assessing against EU limit values where there is public exposure) with Environmental Health and Housing (see contact details below). A summary of EU Limit Values and how these relate to AQ objectives are provided in Appendix B.

1.4 Planning Guidance Note Objectives

The objectives of this Planning Guidance Note are to:

- Highlight the existing policy framework (local and national) relating to air quality;
- Highlight the potential importance of air quality as a material planning consideration;
- Identify those circumstances where an Air Quality Assessment is required by SDC to accompany a development proposal;
- Provide help and guidance for developers required to provide an Air Quality Assessment; and
- Highlight the need for planning conditions and section 106 agreements in the planning process in relation to air quality.

Any questions related to this guidance note should be directed to:

Environmental Health and Housing
Selby District Council,
Civic Centre,
Doncaster Road,
Selby,
YO8 9FT.

e-mail: info@selby.gov.uk
telephone: (01757) 705101

2 The Policy Framework

2.1 National Planning Policy Framework (NPPF)

The National Planning Policy Framework (NPPF) was published on 27 March 2012. This is a key part of Government reforms to make the planning system less complex and more accessible, to protect the environment and to promote sustainable growth.

The Framework sets out planning policies for England and how they are expected to be applied. It provides guidance for local planning authorities and decision-takers, both in drawing up plans and making decisions about planning applications.

With regard to air quality, the Framework states that:

- *the planning system should contribute to and enhance the natural and local environment by: preventing both new and existing developments from contributing to or being put at unacceptable risk from soil, air, water or noise pollution or land instability; and remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate (Paragraph 109);*

- *to prevent unacceptable risks from pollution and land instability, planning policies and decisions should ensure that new development is appropriate for its location. The effects (including cumulative effects) of pollution on health, the natural environment or general amenity, and the potential sensitivity of the area or proposed development to adverse effects from pollution, should be taken into account (Paragraph 120);*

- *planning policies should sustain compliance with and contribute towards EU limit values or national objectives for pollutants, taking into account the presence of Air Quality Management Areas and the cumulative impacts on air quality from individual sites in local areas. Planning decisions should ensure that any new development in Air Quality Management Areas is consistent with the local air quality action plan (Paragraph 124);*

- *developments should be located and designed where practical to incorporate facilities for charging plug in and other ultra low emission vehicles (Paragraph 35);*

The NPPF does not specify what is required in terms of air quality assessment, or indeed what is considered significant in terms of impacts. Assessments are carried out in line with guidance issued by DEFRA and other non-governmental organisations (EPUK, IAQM), and are made against air quality objectives set out in Regulations. The requirement for air quality assessments and significance of impacts are discussed in sections 4 and 5 of this guidance note.

2.2 Local Planning Policy

Selby District Core Strategy Local Plan was adopted on 22 October 2013. The policies within it replace a number of policies in the 2005 Local Plan.

> *'Promoting a healthy environment and lifestyle is also an issue which permeates a number of policy areas. Healthier Communities is one of the Council's Corporate Strategic Themes and wherever possible Core Strategy policies aim to encourage good health and well bein as well as improved access to health care and other facilities. The environment policies aim to create a green and healthy environment and aim to facilitate sustainable access modes, including walking and cycling. In addition the spatial strategy as a whole aims to reduce the need to travel and minimise pollution.'*

One of the key environmental objectives of the Core Strategy (Objective No.16) is:

> *'Protecting against pollution, improving the quality of air, land and water resources, and avoiding over-exploitation of water resources, and preventing noise/light/soil pollution and protecting development from noise/light/soil pollution.'*

Policy SP18 Protecting and Enhancing the Environment replaces ENV7, 8 and 10 of the Local Plan. The supporting text states that:

> *'The high quality and local distinctiveness of the natural and man-made environment will be sustained by … Ensuring that new development protects soil, air and water quality from all types of pollution … [and] minimise[s] energy and water consumption, the use of non-renewable resources, and the amount of waste material.'*

3 Planning and Air Quality

The planning system has an important role to play in improving local air quality and minimising exposure to harmful air pollution. Where air quality impacts are expected as a result of development, the planning process requires comprehensive assessment of such impacts and appropriate mitigation.

Air Quality Assessments examine the likely significance of the air quality impact of a proposed development, and ensures that such impacts are fully understood and taken into account before development is allowed to proceed. This requires close cooperation between Planners and Environmental Health Officers at SDC.

3.1 Air Quality as a Material Planning Consideration

Any air quality issue that relates to land use and its development is capable of being a material planning consideration. However, the weight given to air quality in making a planning application decision will depend on such factors as the severity of the impacts on air quality, the air quality in the area surrounding the proposed development and the sensitivity of the likely use of the development. The length of time people are likely to be exposed at a location and the positive benefits provided through other material considerations are also important issues that need to be taken into account.

3.2 Pre-application advice at SDC

The land-use planning system is recognised to play an integral part in improving air quality. The pre-application phase of development management is part of the positive and proactive planning service provided by SDC. We welcome and encourage early discussions with those considering development, particularly in relation to environmental planning issues. Pre-application discussions in relation to air quality enable a clear understanding of information requirements, including likely mitigation, and enable a shared understanding of constraints and opportunities.

Further information about the Planning Process at SDC can be found online at: http://www.selby.gov.uk/template.asp?pageid=187&menuid=2

3.3 Potential for new Air Quality Management Areas (AQMAs)

Applications brought forward in areas of poor air quality that may give rise to the need for new AQMAs are of particular concern. Such applications could have cost implications for SDC in terms of declaring a new Air Quality Management Areas and preparing and consulting on Air Quality Action Plans. Review of SDC's Air Quality Review and Assessment documents will ensure that such areas are highlighted at an early stage in the planning process.

3.4 Air quality, climate change and the planning process

Improving local air quality and reducing CO_2 emissions are essential to the future well-being of the district and its residents, but this has to be balanced against opportunities for economic growth, new development and the ability of residents and visitors to travel freely around the district.

Currently, local air quality improvement and climate change prevention are dealt with as separate issues within the local planning regime. Emissions from buildings are assessed and controlled mainly in relation to greenhouse gas emissions, whilst transport emissions are considered mainly in terms of their local air quality impact. Both of these sources have the potential to impact on local air quality and climate change, and in some cases (e.g. biomass boilers), the impact can result in a conflict of interest between the two.

Low emission strategies aim to reduce emissions of both 'global' and 'local' air pollutants; those that give rise to climate change and those that have an adverse impact on public health. We are all responsible for these emissions, mainly through the generation of power, industry, heating of our homes and use of transport.

A full understanding of all emissions arising from development in the district is essential to help adequately mitigate the air quality impacts, both in terms of local air pollutants but also in terms of carbon emissions. Further advice on planning based Low Emission Strategies and examples of low emission mitigation measures are provided in section 6.

4 Assessing Air Quality Impacts

4.1 Air Quality Assessment – General Principles

Where a development requires an air quality assessment it should be undertaken using an approach that is both robust and appropriate to the scale of the anticipated impacts. In considering the impact of a development on local air quality the following need to be considered:

- Existing air quality in the vicinity of the proposed development
- Likely impact on local air quality as a result of the proposed development (including the impact of additional traffic movements and/or the introduction of other new emissions sources)
- Available measures for mitigating the air quality impact associated with the development (traffic and other emission sources)
- Level of increased exposure to air pollutants by members of the public as a result of the development, taking into account all mitigation measures proposed.
- Design measures possible to limit public exposure to air pollutants such as distance of building facades from roads; orientation of habitable rooms and provision of mechanical ventilation where appropriate.

Further details on the scale and scope of air quality assessments can be found below. A checklist for air quality impact assessments can be found at Appendix A.

SDC has a legal obligation to 'pursue' the air quality objectives at all locations in the district. On this basis it may reject, or require amendments to, proposals which are considered likely to result in a significant deterioration in air quality and/or which are likely to introduce new opportunities for exposure in existing areas of poor air quality.

SDC will review the significance of air quality impacts in line with national guidance. The exercise of professional judgement by both the organisation preparing the air quality assessment and SDC officers, when they evaluate the findings, is an important part of the assessment of significance. Evaluation of air quality impacts will take into account factors such as the number of people affected, the absolute levels and the predicted magnitude of the changes in pollutant concentrations. The significance of air quality impacts will therefore be dependent on the context of individual developments, with resultant deteriorations in local air quality likely to be more acceptable in some locations than others. The evaluation will also take account of how the impacts relate to the requirements of local air quality policies (see section 2).

4.2 When to provide an Air Quality Assessment

Planning applications are required to assess the resultant impact on local air quality (in terms of change in ambient concentration of air pollutants), where:

- Proposals will **generate or increase traffic congestion**, where this manifests itself as an increase in periods with stop-start driving. This may be the case where new junctions or road layouts are proposed, or where it is thought that additional traffic may exacerbate congestion in problem areas.
- Proposals will give rise to a **significant change in either traffic volumes** (i.e. a change in AADT[3] or peak hour flows of +/- 5% within AQMAs and +/- 10% outside an AQMA) **or in vehicle speeds** (more than +/- 10kph) on a road with more than 10,000 AADT (or 5,000 AADT if 'narrow and congested')
- Proposals will **significantly alter the traffic composition** on local roads, for example, increase the number of heavy duty vehicles by 200 movements or more per day. This may be case where additional HGVs are used to service a site. Consideration should also be given to additional bus and coach movements
- Proposals will **include significant new car parking**, which may be taken to be more than 100 spaces outside an AQMA or 50 spaces inside an AQMA. This also includes proposals for new coach or lorry parks.
- Proposals will **introduce new exposure** close to existing sources of air pollutants, including road traffic, industrial and agricultural operations. New, relevant exposure, would be classed as locations where members of the public are likely to be regularly present and are likely to be exposed for a period of time appropriate to the averaging period of the air quality objective.
- Proposals will **include biomass boilers or biomass fuelled CHP plant** (considerations should also be given to the impacts of centralised boilers or CHP plant burning other fuels within or close to an AQMA)
- Proposals will **give rise to potentially significant impacts during construction** for nearby sensitive locations (e.g. residential areas, areas with parked cars and commercial operations that may be sensitive to dust).

[3] AADT – Annual Average Daily Traffic Flow

- Proposals **will require large, long-term construction sites** that would generate large HGV flows (>200 movements per day) over a period of a year or more.

- Proposals will require an Environmental Impact Assessment (EIA).(See Section 4.2.1)

Planning applications should be supported by such information as is necessary to allow a full consideration of the impact of the proposal on the air quality of the area. The assessment should present sufficient information such that SDC can easily establish the methodology used to assess the impact and the assumptions made.

4.2.1 Environmental Impact Assessment

Some types of planning application will need to consider air quality automatically under the requirements of the Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999. A screening opinion on whether this is the case can be requested from SDC.

Where the scheme is subject to an Environmental Assessment under EIA Regulations, a detailed assessment of the effects of the development on air quality will normally be required.

4.3 Types of Air Quality Assessment

The approach to assessing the air quality impact of a development will depend on a number of factors, including scale, location, existing air quality and anticipated impacts, including the nature of the pollutants emitted to air. Examples of approaches to air quality assessment include:

Qualitative Air Quality Assessments

- The first step of any air quality assessment is to undertake a qualitative assessment of likely impacts. This preliminary assessment will identify key issues at an early stage in the process. This assessment will help to scope further work required for the planning application.

Air Quality Screening Assessments

- For relatively small scale developments where traffic increases are likely to be around 5% (AADT), an air quality screening assessment would be appropriate in the first instance (e.g. DMRB[4]). Screening Assessments may also be suitable for small scale static point sources, such as biomass boilers (see section 4.7).

[4] Design Manual for Roads and Bridges (DMRB)

Air Quality Dispersion Modelling

- If an air quality screening assessment indicates potential for a significant deterioration in air quality[5], the need for further more detailed work should be explored with SDC. In such cases, the use of a detailed air pollution model (e.g. ADMS-Urban) may be required. Detailed dispersion modelling may sometimes be appropriate from the outset for large scale developments, where air quality impacts are anticipated.

Monitoring Assessments

- Monitoring assessments will often be appropriate where existing pollutant concentrations in the vicinity of the site are unknown. Monitoring may also be required during construction/demolition phases of development. Further advice on undertaking monitoring to support your planning application is provided in section 4.6.3. Monitoring may be required to supplement, or validate the results of, a screening or dispersion modelling study.

Air quality assessments will need to be carried out by a suitably qualified air quality professional.

Every air quality assessment is likely to be different and developers are strongly encouraged to agree the scope of any air quality assessment with SDC upfront, ideally as part of pre-application discussions. This will enable assessment to be targeted at the appropriate level from the outset and prevent unnecessary expense and delay with your planning application.

4.4 Relevant Exposure

Consideration of the potential impacts of development proposals on local air quality should be focused on those locations where members of the public are likely to be regularly present and are likely to be exposed over the averaging period of the relevant objective. The Local Air Quality Management regime refers to these locations as 'relevant locations'. Table 1 provides examples of where the air quality objectives should apply.

[5] Significance in this context will usually be defined by the specific screening tool being used.

Table 1: Examples of where air quality objectives should apply (modified from NSCA Planning for air quality guidance document).

Averaging Period	Objectives should apply at	Objectives should generally not apply at:
Annual Mean	All locations where members of the public might be regularly exposed Building facades of residential properties, schools, hospitals, libraries etc	Building facades of offices or other places of work where the public do not have regular access Gardens of residential properties Kerbside sites (as opposed to locations at the building façade) or any other location where public exposure is expected to be short term
24-hour mean and 8-hour mean objectives	All locations where the annual mean would apply Gardens of residential properties Hotels, hostels	Kerbside sites (as opposed to locations at the building façade) or any other location where public exposure is expected to be short term
1-hour mean	All locations where the annual mean and 24 and 8-hour mean objectives would apply Kerbside sites (e.g. pavements of busy streets) Parts of car parks, bus or railway stations etc which are not fully enclosed, where the public might reasonably be expected to spend one hour or more Any outdoor locations at which the public may be expected to spend one hour or longer.	Kerbside sites where the public would not be expected to have regular access
15-minute mean	All locations where members of the public might reasonably be expected to spend a period of 15 minutes or longer (e.g. bus stops, smoking shelters)	

When considering the air quality impacts from developments, it is important that full account is taken of impacts on recreational areas such as parks, gardens, play areas and open spaces. In addition, when considering future locations for such facilities it is important that full account is taken of the existing air quality. Monitoring may be required to establish existing levels of pollution in an area.

4.5 Cumulative Air Quality Impacts

Cumulative impact can be regarded as the worsening of air quality caused by a cluster of small scale developments, which individually may have relatively low polluting potential, but together have a significant impact on air quality.

To account for cumulative air quality impacts, Air Quality Assessments must take account of all committed development in the local area (i.e. planning proposals that have been granted planning consent). Developers are asked to ensure that all necessary developments are accounted for in any air quality impact assessment submitted in support of an application. Failure to account for all committed development will require a resubmission of the air quality assessment.

Developments included as part of a cumulative assessment will normally have been agreed as part of a Traffic Impact Assessment (TIA) accompanying the development proposal. Any traffic data used as a basis for an Air Quality Impact Assessment must first be approved by SDC in consultation with North Yorkshire County Council. Work undertaken without such approval is done entirely at the developers own risk, and is done on the understanding that the work may need to be resubmitted at a later date if the traffic figures associated with the development are shown to be invalid.

Where your application coincides with other large developments in the area, SDC may commission its own air quality assessments. Where this is the case, the developer will be given the opportunity of contributing towards the cost of the cumulative study or undertaking their own independent study.

4.6 Data sets and methodologies

The following sub-sections provide advice on data sets that may be used for air quality assessment.

4.6.1 Traffic impacts

Where a Traffic Impact Assessment (TIA) has been undertaken for a development proposal, it is recommended that this data is used as the basis for any air quality assessment carried out. It is strongly advised to check that the data in the TIA, upon which the air quality assessment is being based, has been approved by North Yorkshire County Councils Transport & Development Team. The team can be contacted by email on Development.Control@northyorks.gov.uk.

Air Quality impact from traffic should, under normal circumstances, be based on Annual Average Daily Traffic Flows (AADTs). Information on AADT's is available from North Yorkshire County Councils Highway Asset Management Team, email requests should be made to HighwayAssetManagement@northyorks.gov.uk.

Where possible, time varying traffic flows (and thus emissions) should be based upon local traffic profiles. Where dispersion modelling work includes point sources (such as industrial processes) these should also be configured to reflect any local operational profiles if appropriate (for example, if the process only operates 6 months of the year).

4.6.2 Modelled Scenarios

Any detailed air quality assessment should clearly indicate the change in pollutant concentrations likely as a result of the development proposal at a number of specified receptor points. Likely future pollutant concentrations, both with and without the development in place, should be compared with relevant air quality objective levels as appropriate.

As a minimum requirement, where a detailed air quality impact assessment is required, it should contain information to determine the air quality implications for the following scenarios:

- Base year
- Base + other committed development for scheme completion year (do-nothing)
- Base + committed development + proposed scheme for scheme completion year (do-something)

The above scenarios will enable SDC to establish what will happen to air quality if the development proceeds, compared with a situation where the development does not proceed.

4.6.3 Air Quality monitoring data

(A) Background monitoring data

Background pollution data should be representative of levels found in SDC. It is recommended that local monitoring figures are used in preference to nationally estimated background figures. The council should be approached for the latest information on background pollutant concentrations in the district.

Where local monitoring data is not available, the use of DEFRA's background maps[6] will be acceptable. Applicants should always explain and justify the use of background concentrations assumed as part of an air quality assessment.

(B) Baseline monitoring data

Monitoring can be used to identify existing concentrations of pollutants in an area. Monitoring data can be used to provide information as to where the air quality objectives are being exceeded in an area. Monitoring data is also routinely used to demonstrate the performance of dispersion models (as part of a model verification exercise).

[6] http://laqm.defra.gov.uk/review-and-assessment/tools/background-maps.html

SDC operates a number of nitrogen dioxide diffusion tubes across the district and should be approached to see if there is any local monitoring in the vicinity of your planning application.

Where no local monitoring data exists, developers will be required to estimate baseline air quality as part of an air quality assessment. The developer may be required to provide air quality monitoring at their own cost and the issues outlined below need to be considered. It is recommended that baseline monitoring is discussed at an early stage with SDC as part of pre-application discussions. Further, detailed information about air quality monitoring can be found in DEFRA's technical guidance note LAQM.TG(09) (Chapter 3).

- **Monitoring locations** – monitoring should normally be carried out in relevant locations which reflect concentrations in the vicinity of the site in question. Locations should reflect points of maximum relevant public exposure.

- **Type of monitoring** – monitoring of nitrogen dioxide should normally be carried out using a continuous analyser (e.g. chemilumnescence analyser) or passive diffusion tubes.

- **Duration** – whilst the air quality objectives are based upon concentrations monitored over a full calendar year, it will usually be necessary to use monitoring data collected over shorter periods of time. A minimum of 3 months continuous monitoring data (ideally 6 months) should always be used. Such data should be factored to provide estimates of calendar year concentrations. Guidance on the use of short term monitoring studies (including the issue of seasonality) is provided in LAQM.TG(09).

- **Correction** – diffusion tubes should be bias corrected. An explanation of how this has been carried out, together with the bias correction factors assumed, should be provided. A suitable quality assurance and quality control programme should be in place for continuous monitoring.

4.6.4 Meteorological data

Meteorological data will be required where an air quality assessment is being undertaken using a dispersion model. The precise format of the meteorological data set will depend on the dispersion model being used for the study. Developers should ensure that the data has been taken from an appropriate site (i.e. a site representative of SDC). At least one full year's worth of hourly-sequential meteorological data should be used for any dispersion modelling study.

Meteorological datasets for low pollution years should be generally be avoided. It is 'unlikely' that such favourable conditions will prevail in future years, and this approach would tend to under-predict pollutant concentrations.

Meteorological datasets for more polluted years may be used as a precautionary approach. If concentrations fall below the objective, then SDC will have additional confidence in their conclusions. However, if exceedences are predicted, particularly by a narrow margin, then the authority will need to consider whether they have been overly conservative.

Meteorological datasets for 'average' years are preferred, particularly if other conservative assumptions are used. Ideally, predictions using a 'polluted' year and an 'average' year would allow the authority to gauge the effect of changes in meteorological data.

It should also be noted that, for the purpose of model verification the modelling predictions should be carried out for the same year for which monitoring data are available. For example if monitoring data is available only for 2012, then predictions should also be carried out for this year so that a direct comparison can be made.

4.6.5 Pollutants

If a development proposal is likely to affect traffic flows, and such changes in traffic flows are likely to be responsible for any air quality impacts associated with the development, nitrogen dioxide (NO_2) and particulate (PM_{10}) should be modelled. NO_x[7] concentrations should always be modelled whenever concentrations of NO_2 are predicted.

Other transport sources may also require consideration, for example stationary locomotives, both diesel and coal fired, can give rise to high levels of sulphur dioxide close to the point of emission. Evidence suggests that moving diesel locomotives, in sufficient numbers, can also give rise to high nitrogen dioxide concentrations close to the track.

If changes in traffic flows associated with the development are not the principal reason for air quality concern, and it is the development itself that is a significant emitter, other pollutants relevant to the type of development should be considered (for example, it may be appropriate to model sulphur dioxide (SO_2) for an iron or steel process, benzene for a petrol station and PM_{10} for a poultry farm). Other pollution sources may include industrial processes, commercial and domestic sources, and fugitive or uncontrolled sources.

Industrial sources are unlikely to make a significant local contribution to annual mean concentrations, but could be significant in terms of short term objectives. Generally for these sources, assessment should consider all regulated pollutants, although those most at risk of requiring further work are SO_2, NO_2, PM_{10} and benzene.

[7] NOx (Nitric Oxides) – Collective term for NO and NO_2

4.6.6 Emissions factors

Concentrations of NO_x/NO_2 have not been declining in line with national estimates. To address this issue, DEFRA and the Devolved Administrations have provided an updated Emission Factors Toolkit (Version 5.2)[8] which incorporates updated NO_x emission factors and vehicle fleet information. Justification of the use of emission factors should always be provided in an air quality assessment.

4.7 Heating and Energy Supply, Biomass Boilers and other industrial sources

Opportunities to generate heat and energy from renewable and/or energy efficient sources, in the interests of reducing emissions to air, should be explored on all new developments. Developers should ensure that the energy choices for heating and powering new developments are the right ones for both carbon/CO_2 and local air quality emissions (NO_x/Particulate).

An early discussion with SDC is recommended to determine the best method for assessing the air quality impact of the proposal. Examples include:

- **Environment Agencies H1 Annex F (Air Emissions)[9]** – this note can be used for estimating process contributions and can be used for screening purposes. Whilst this approach does not take account of all parameters that may influence dispersion of emission to air, the approach assumes worst case conditions to deliberately overestimate actual contributions.

- **Dispersion modelling** – it will sometimes be necessary to undertake detailed dispersion modelling, following a screening assessment, such as the one outlined above (where emissions cannot be screened out as insignificant). Where planning applications for industrial processes are being proposed for sensitive areas (e.g. close to relevant locations), or where higher environmental risks are anticipated, applicants may wish to progress directly to more detailed dispersion modelling to derive less precautionary and more accurate process contribution estimates.

Combined Heat and Power (CHP) is considered a more energy efficient technology than the boilers (on-site) and electricity from the National Grid that is used to heat and power most buildings. As with other combustion technologies, CHP solutions can have an impact on local air quality.

All but the smallest CHP installations will require planning approval. Guidance on assessing and mitigating potential CHP impacts is available from:

[8] http://laqm.defra.gov.uk/review-and-assessment/tools/emissions.html#eft
[9] http://www.environment-agency.gov.uk/business/topics/permitting/36414.aspx

http://www.iaqm.co.uk/text/guidance/epuk/chp_guidance.pdf. This note should be read in conjunction with the more general Environmental Protection UK planning guidance *'Development Control: Planning for Air Quality'.*

This guidance highlights that CHP systems are subject to a range of regulatory regimes. The regime that a system will fall into will depend on its size (based on its rated thermal input), and sometimes the type of fuel it burns. Special regulatory conditions may apply if a CHP plant is running on fuel classified as waste (e.g. waste wood). Applicants should be aware that granting of planning permission is not necessarily a licence to operate; additional approval may be required from SDC or the Environment Agency as appropriate under the Pollution Prevention Control Act 1999.

4.7.1 Biomass Installations

In common with conventional combustion systems, biomass boilers can emit a number of pollutants including nitrogen dioxide (NO_2), particulate matter (PM_{10}) and sulphur dioxide (SO_2). These pollution emissions can have an impact on local air quality and affect human health.

The amount of these pollutants produced will depend on the size and design of the boiler, the quality of the fuel used and the presence of emission abatement equipment. Generally a well maintained biomass boiler will produce more pollution than a similar gas system, but less than an equivalent coal or oil fired boiler. The maintenance of the boiler and its associated equipment will also affect pollutant emissions (i.e. poor maintenance will lead to higher emissions) *(Biomass and Air Quality Information for Developers, EPUK June 2009).* Road transport emissions associated with delivering biomass to the boiler may also need to be considered.

How are biomass boilers regulated?

The regulatory regime applicable to a biomass boiler depends upon its size, its location and the type of fuel it burns.

- **Large biomass boilers** (heat input greater than 20MW) are regulated under the Integrated Pollution Prevention and Control (IPPC) system. In England and Wales, the regulating body is the Environment Agency for large boilers (>50MW), or the relevant local authority for smaller ones (20-50MW). To install and operate a biomass boiler > 20MW, a permit will be required, and emission control must be provided by 'Best Available Techniques' (BAT).

- **Medium sized boilers** (45 – 20,000 kW) fall under the Clean Air Act 1993 and are regulated by the appropriate local authority. This legislation ensures that newly installed plant has adequate arrestment equipment and that where emissions from plant appear excessive measurements of emission to the atmosphere can be required.

- **Small boilers** (heat input less than 45kW) are also regulated under the Clean Air Act 1993.

Where an appliance is designed to burn fuel at a rate greater than 45.4kg per hour, SDC will be required to approve the chimney height. Each application for chimney height approval must contain adequate information to enable the necessary calculations to be carried out. For an application form please contact the SDC or see Selby District Council website at www.selby.gov.uk. We will consider each application for approval for chimney height for a furnace and give a written decision within 28 days of receipt, unless we agree in writing with you that a longer period is allowed. If we fail to deal with the application within this time period, then approval without qualification or condition is automatically given.

What information must be submitted with a planning application where a biomass installation is proposed?

SDC will require:

- A description of the biomass boiler to include the make, model, manufacturer, thermal capacity (kW/MW), efficiency, maximum rate of fuel consumption (kg/hr or m^3/hr), the combustion and fuel feed systems, any emissions abatement equipment fitted and whether the system is fitted with an accumulation tank

- A description of the boiler stack (flue) to include the height and internal diameter of the stack, its grid location and exhaust gas efflux velocity (m/s). We may require stack height to be calculated using 'dispersion modelling', a computer modelling technique that looks at how pollutants disperse.

- A description of the fuel intended to be used, its composition, compatibility with the boiler, any standards it meets and arrangements to ensure the quality of the fuel, arrangements for delivering and storing the fuel. We will also want to know where the fuel is being sourced from. We would expect fuel for biomass boilers to be sourced locally and ideally within 20 miles of the installation.

- Building details to include the height of the building that the stack is attached to and the height and distance away from the stack of neighbouring buildings.

- Maintenance arrangements for the system to include details of the schedule for maintaining, cleaning and de-ashing the system, along with procedures for identifying and rectifying faults with the system.

Selby District Council have a Biomass Information Request Pro-forma which is available on request by using the contact details in Section 4.1.

Other issues relating to biomass installations, which may require further investigation include:

- **Noise** – the operation of biomass boilers and associated activities such as fuel deliveries may cause noise. Such noise can cause annoyance to occupants of neighbouring buildings and affect residential amenity. Careful design of the site and consideration of delivery schedules can help minimise any potential noise issues. SDC can offer advice on ways to minimise noise, please contact us for further information.

- **Odour and dust** – the operation of biomass boilers also have the potential to cause odour and dust problems which could affect residential amenity. Again, potential problems can be minimised through careful site design and consideration of maintenance and delivery schedules. SDC can also offer advice on ways to minimise odour and dust.

SDC has developed a Biomass Information Request form to assist developers in collating information relating to biomass installations. Please contact us at info@selby.gov.uk to request a copy.

4.7.2 Assessment of emissions from biomass boiler installations

In the first instance, all biomass installations should be screened using an appropriate screening technique. One example is AEA's Technical Guidance Note: Screening assessment for biomass boilers[10], which uses nomographs to assess the potential impact on air quality of proposed developments involving biomass combustion appliances. Using this approach, if the "background-adjusted" emission rate is greater than or equal to the threshold emission rate, more detailed assessment of the biomass boiler will be required. This is likely to involve modelling of the stack using a dispersion model such as ADMS-Urban. Such modelling should take account of variable emission rates (when operated at full and partial load).

In general, where cumulative air quality impact assessments are being undertaken looking at emissions from vehicles, alongside those from biomass furnaces, biomass installations should be modelled as point sources within a suitable dispersion model.

Any biomass installations above the 500kWth threshold will need to be fitted with the best available emission reduction equipment. The planning application will need to be able to demonstrate the impacts on local air quality, when compared against that of a conventional gas boiler. Any applications for biomass installations below this threshold should demonstrate no adverse impacts on air quality, in the first instance using the screening approach described above.

It is essential that any new biomass boilers installed in SDC's area meet certain emission control requirements in order to protect local air quality. As such,

[10] http://uk-air.defra.gov.uk/reports/cat18/0806261519_methods.pdf

planning conditions may be used to specify maximum rates of emission from biomass boilers, or to ensure the use of technology to adequately control emissions. Emission release height may also be conditioned to minimise local air quality impact.

4.8 Construction and Demolition Impacts

Construction and demolition activities can have a substantial, temporary impact on local air quality. Increased particulate matter (PM) concentrations and dust soiling are typically associated with these types of activity.

Monitoring may need to be carried out during both demolition and construction activities to ensure that the applied mitigation measures are effective in controlling dust emissions, and that there are no significant impacts in neighbouring areas.

4.8.1 Construction Environmental Management Plans (CEMP)

For larger developments, prior to any works commencing on site, a construction environmental management plan (CEMP) will need to be submitted and approved in writing by the SDC. The CEMP should identify the steps and procedures that will be implemented to minimise the creation and impact of noise, vibration and emissions resulting from the site preparation, demolition, groundwork and construction phases of the development. Once approved, the CEMP shall be adhered to at all times, unless otherwise first agreed in writing with the SDC.

Additional measures to reduce emissions during demolition and construction phases may be appropriate, and SDC may use planning conditions to ensure such measures are implemented.

Developers are strongly advised to adopt the Considerate Constructors Scheme (CCS) as a way of reducing pollution and nuisance from development.

4.8.2 Fugitive Dust Emissions

Fugitive dust emissions associated with construction and/or demolition phases of a development can have a significant impact on local air quality and must be reduced as far as possible. Where fugitive dust emissions are likely during demolition or construction phases of development, a written statement should be provided detailing how such emissions will be minimised / restricted to within the site boundary. The following types of options should be explored:

- On site wheel washing facilities for construction vehicles
- Unmade road access should be restricted. It is also desirable, particularly for larger developments, to agree the routes to be used by construction traffic with SDC.
- Restricting the size of stockpiles / covering / spraying stockpiles to prevent cross perimeter movement of air dispersed stocks.

- Site perimeter screening for fugitive dust emissions (particularly important where buildings are to be demolished).

- Adopt incentives, regulations, and/or procedures to reduce paved road dust emissions through targeted street sweeping of roads subject to high traffic levels and silt loadings.

- Evaporative emissions and fires should be minimised. Fires should not be permitted on site; spills should be dealt with promptly.

- Reference should be made to construction equipment emissions. The use of 'clean' construction equipment should be explored and discussed during the tendering process.

- All skips removed from site should be covered prior to removal.

- Sand-blasting, stone-cutting and grinding should be kept to a minimum, and where necessary control techniques such as dust extraction or damping used.

- Drop heights from any tipping activities are kept to a minimum.

To check that the above steps are effective, regular monitoring of dust levels on the boundary of the site should be carried out. Results of such monitoring and corrective measures taken, if necessary, should be recorded in a site log book kept on site. Dust from building and construction sites can cause a statutory nuisance to neighbours if not adequately controlled.

Effects of weather on dust emissions may be useful to consider (e.g. dry and/or windy conditions).

If you are proposing to crush any materials on site, plant should only be operated under a Permit from a Local Authority issued under the Environmental Permitting Regulations 2010. In such circumstances the process operator should notify SDC prior to commencement of works.

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/

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). This is available for download from:
http://static.london.gov.uk/mayor/environment/air_quality/docs/construction-dust-bpg.pdf

4.8.3 Smoke

Open burning on commercial sites is generally prohibited by the Waste Management Licensing Regulations 1994, enforced by the Environment Agency. However, the burning of clean wood on demolition sites is exempt from licensing, providing the wood is produced as a result of demolition work and is burned on the land where it is produced. There is a similar exemption for tree waste from landscape maintenance etc. However, if burning causes excessive smoke and a statutory nuisance to local residents, SDC can serve an abatement notice to ensure the smoke nuisance is abated.

In addition under the Clean Air Act 1993 it is an offence to cause emissions of dark smoke from industrial or trade premises, this includes building & demolition sites. If dark smoke is seen coming from your site, or evidence of burning materials which are likely to give rise to dark smoke, such as plastics, rubbers, paints, etc, is found, then you could receive a fine of up to £5,000. Cable burning is also a specific offence unless authorised.

4.9 Describing impacts

Applicants submitting an air quality assessment in support of a planning application are required to describe air quality impacts using the terminology highlighted in Appendix 3 of the national guidance note ‘Development Control: Planning for Air Quality’ (2010 update).

5 Assessing Significance

Whether a development proposal will have a significant impact on air quality is a matter for consideration by the local planning authority. When considering the air quality impact of the development proposal, SDC will pay consideration to the following factors:

- predicted changes in concentration of pollutants as a direct result of the development.
- whether the emissions caused by the development proposal will interfere with SDC's duty to improve air quality anywhere in the district
- the level to which members of the public will be exposed to pollutants with the development in place.

Where uncertainty exists on the likely air quality impact of the development proposal, SDC will take a precautionary approach. It is therefore essential that the developer provides adequate information to enable SDC to make an informed decision.

SDC does not wish to prescribe exact levels above which development proposals will be refused, since each case will be assessed on its own merits.

5.1 How will SDC assess the significance of the air quality impact?

The relative weight given to air quality in the planning application process will depend on the significance of the air quality impacts.

The national guidance note *'Development Control: Planning for Air Quality'* highlights that air quality has the potential to be a 'material consideration' in all planning applications. Whether air quality is a material consideration for any individual application will depend on the nature of the proposed development and the location. Furthermore, the significance of the impacts will depend on the context of the development.

In order to reduce emissions to air and improve air quality the impact of development on air quality must be acceptable.

Air quality is likely to be a high priority consideration where the development leads to a breach, or significant worsening of a breach of an Air Quality Objective, or indeed where the development introduces new exposure into an area already exceeding Air Quality Objective levels.

Applicants submitting an air quality assessment in support of a planning application are encouraged to describe air quality impacts using the terminology highlighted in the national guidance note *'Development Control: Planning for Air Quality' (2010 update) (see Appendix 3 of this document) or any update version of this document.*

Figure 1 (page 23) of the same guidance note presents a flowchart which should be used to assess the significance of any impact. The flow chart uses textual descriptors of significance, and air quality impacts are assessed through a series of questions. Each question should be addressed in descending order, until the answer 'yes' is obtained. This gives the relative priority which air quality considerations should be afforded in consideration of the development proposal, and the degree of re-design or mitigation which is needed.

5.2 Exercise of Professional Judgement

SDC will review the significance of the air quality impacts in line with national guidance. The exercise of professional judgement by both the organisation preparing the air quality assessment and SDC officers when they evaluate the findings is an important part of the assessment of significance of air quality impacts.

Evaluation of air quality impacts will take into account factors such as the number of people affected, the absolute levels and the predicted magnitude of the changes in pollutant concentrations. The evaluation will also take account of how the impacts relate to the requirements of local air quality policies.

6 Mitigating Impacts

Mitigation measures will normally be required for any proposal for which the impact significance is *medium*[11] or above. SDC and the developer will agree measures that are appropriate and in scale and kind to the development. Such measures will be addressed via planning condition, Section 106 Agreement or Community Infrastructure Levy as appropriate and will seek to ensure that any development is air quality neutral as far as practically possible.

6.1 Design issues

Scheme design can often be used to reduce air quality impact and/or minimise potential exposure. The following list describes some design principles which may be appropriate for certain developments within SDC's area.

- Avoid features which encourage residents to spend time in polluted outdoor environments (e.g. balconies, roof terraces). Where balconies are proposed as part of a scheme, they should ideally be placed away from busy carriageway facades where elevated concentrations of pollution are likely.

- Avoid developments which have the potential to give rise to further canyonisation (i.e. tall buildings on either side of the road) in areas of suspected poor air quality.

- The internal arrangement of proposed residential schemes in areas of poor air quality should present non-habitable rooms to polluted façades (i.e. kitchens and bathrooms at the carriageway facade, with bedrooms and living rooms positioned away from the road). Developers should also avoid providing external doors communicating directly with habitable rooms on polluted facades.

- In taller buildings, it may be appropriate to position residential uses on upper floors to reduce potential exposure to poor air quality[12]. Lower floors may be suitable for other uses such as office space, commercial or retail development.

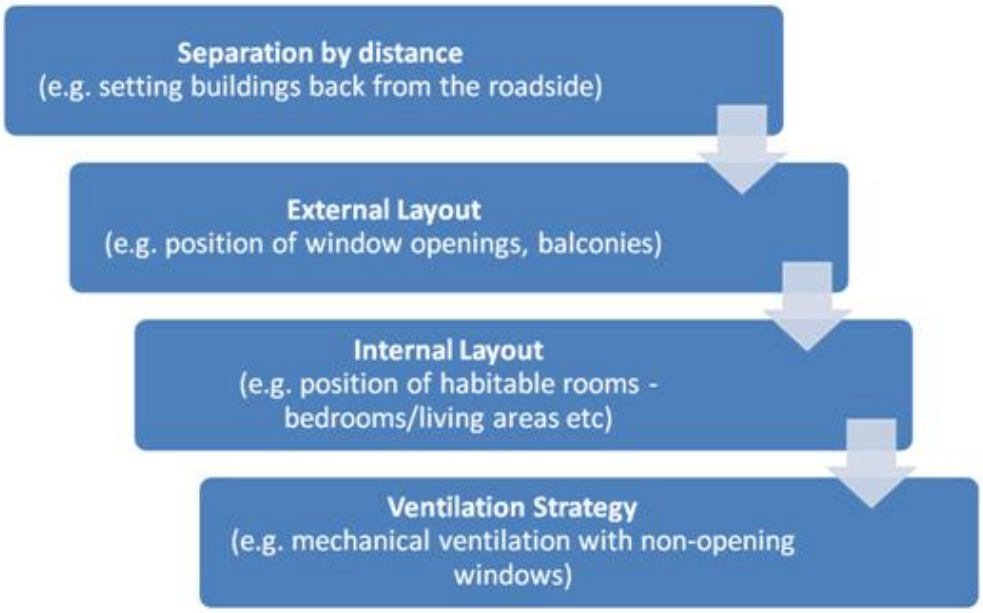
- Non-opening windows may sometimes be appropriate in areas of very poor air quality. This should take the form of fixed glazing with mechanical ventilation from an area of the site away from the carriageway façade. Ventilation should be provided through continuous mechanical supply and extract (with heat recovery). The applicant should provide a maintenance schedule for such ventilation systems, and clarify responsibility for running costs and maintenance works. Such ventilation systems may also need to satisfy Building Regulations.

[11] As defined in EPUK's 'Development Control: Planning For Air Quality (2010 Update)'
[12] This may also help to address concerns regarding noise pollution

- Increasing the distance between the pollution source and the development façade. This can be achieved by setting buildings back from the carriageway, ideally by 10 metres or more[13].

- Avoid parking in enclosed courtyards

Development which includes 'relevant locations'[14] in areas where air quality is thought to be above or approaching air quality objective values must seek to reduce exposure according to the design mitigation hierarchy set out below:



Developers should demonstrate how the above mitigation hierarchy has considered as part of the air quality assessment. Applications should seek to 'design-out' opportunities for exposure to poor air quality as far as practically possible.

6.2 Planning Conditions

Planning conditions may be suitable for reducing the severity of air quality impacts that arise as a result of a development proposal. Planning conditions may be imposed if it is considered that without the permission, planning permission would have to be otherwise refused. Example conditions, relating to local air quality may include:

- Specifying minimum stack heights for industrial stacks to ensure adequate dispersion of pollutants.

[13] DEFRA's *'nitrogen dioxide fall off with distance calculator'* may be useful for determining the optimal distance of development from polluted carriageways

[14] Relevant Locations can be defined as any outdoor, non-occupational location where members of the public may be regularly exposed to pollution over the averaging period of the objective. Local judgement should always be applied.

- Requiring the developer to put measures in place to control air quality impacts during the construction phases of development. This may include measures to control dust pollution (see section on demolition and construction) or provision of a Construction Environmental Management Plan (CEMP)

- Requiring the developer to submit a ventilation strategy (where residential accommodation is proposed next to a busy road in an area of suspected poor air quality).

- Restricting hours of operation as a means of controlling emissions.

- Requiring the developer to submit a low emission strategy for the site, to include details of how site emissions will be minimized (see section 6.3 below)

- Requiring the developer to submit a travel plan that provides details of incentives for staff to walk or cycle or use public transport or other sustainable transport means. This may include such initiatives as providing free bikes for staff members, or providing free bus or rail travel to allow staff to get to work using modes other than private cars.

6.3 Low Emission Strategies

Developers will be required to demonstrate how they are making all reasonable efforts to minimise total emissions from development sites. This will include requirements to promote and incentivise the use of low emission vehicles and in some cases the provision of, or financial contribution towards, the cost of low emission vehicles and associated infrastructure.

The actual measures required will be site specific depending on the scale and location of the development. Some examples of measures that may be included in a low emission strategy for a site are provided below:

- Incentives for the take-up of low emission vehicle technologies and fuels, including contributions to alternative fuel infrastructure. This can include the provision of on-site electric vehicle recharging infrastructure to promote the uptake of electric vehicles across the district.

- Specification of minimum standards and/or fuel type for vehicle fleets serving an industrial, business or retail development.

- Financial support for the provision low emission public services such as public transport and waste collection.

- The provision of car clubs utilising low emission vehicles

- Bike / e-Bike hire schemes

- Low emission travel and vehicle ownership incentives such as free or reduced parking charges, improved loyalty card terms, discounted entry to local attractions etc.

- Adoption of low emission vehicle procurement policies

- Contribution to renewable fuel and energy generation projects

- Specification of minimum standards for heating/cooling appliances on site

- Specification of minimum emission standards for construction equipment and machinery

Planning based Low Emission Strategies are designed to complement other planning design and mitigation options, such as the location and layout of development, travel planning and the provision of public transport infrastructure. The strategies can be secured through a combination of planning conditions and planning obligations and may incorporate policy measures and/or require financial investments and contributions to the delivery of low emission transport projects and plans, including strategic monitoring and assessment activities.

6.4 Developer contributions to development

Where mitigation measures are required as a direct result of new development, applicants may be required to enter a section 106 agreement to implement measures to offset any increases in local pollutant emissions, and/or make an appropriate financial contribution towards improvement measures or air quality monitoring.

Arrangements for payment of developer contributions should be made through SDC's Planning Department. Contributions will not be regarded as abnormal site costs and will not, therefore, affect affordable housing levels through assessments of site viability.

Financial contributions may also be appropriate for cumulative developments, particularly where further study is required to assess potential cumulative air quality impacts arising from a number of developments in close vicinity. Such payments will be discussed with developers/applicants on a case by case basis at the time of application.

Contributions towards the cost of an ongoing air quality monitoring programme with the district may be appropriate for some developments, particularly where there is uncertainty over existing quality or anticipated air quality impacts.

In some circumstances, SDC may be able to undertake air quality monitoring (using diffusion tubes) on your behalf. Indicative costs for this service can be provided on request.

Glossary of Terms

Air Quality Action Plan (AQAP)
A plan of action drawn up by a local authority for improving air quality in an Air Quality Management Area.

Air Quality Impact Assessment (AQIA)
A detailed study related to the air quality impact of a development proposal

Air Quality Management Area (AQMA)
An area formally designated by a local authority where one or more of the air quality objectives are unlikely to be met.

Air Quality Objectives (AQO)
Targets set by the Government for air quality which are considered to be achievable in terms of cost, benefit and technical feasibility.

Annual Average Daily Traffic Flow (AADT)
AADT, or the Annual Average Daily Traffic Flow, refers to the average number of vehicles passing along a link during a 24h period. The AADT will typically comprise a percentage of Heavy Goods Vehicles (HGVs) and Light Goods Vehicles (LGVs).

Assessment
The consideration of whether or not the air quality objectives will be met by the relevant compliance dates.

Community Infrastructure Levy (CIL)
The Community Infrastructure Levy (CIL) is a planning charge that Local Authorities can set on new development to help pay for community infrastructure. It is intended to offer transparency, consistency and fairness for all developers and local authorities, whilst keeping a balance between the cost of funding infrastructure and the viability of development.

Considerate Constructors Scheme (CCS)
The Considerate Constructors Scheme is the national initiative set up by the construction industry to improve its image. Construction sites and companies that register with the Scheme are monitored against a Code of Considerate Practice, designed to encourage best practice beyond statutory requirements.

Design Manual for Roads and Bridges (DMRB)
DMRB, or the 'Design Manual for Roads and Bridges', is a screening tool used, amongst other things, to look at the polluting potential of a development. The results of a DMRB assessment may trigger a more detailed air quality assessment in some instances.

Local Planning Authority (LPA)
The local authority or council that is empowered by law to exercise planning functions

Low Emission Strategy (LES)
A Low Emission Strategy is a package of measures for mitigating air pollution and carbon dioxide emissions. Planning based low emissions strategies are usually concerned with mitigating the impacts of transport emissions from new (or significantly altered) developments.

Planning Obligation (s106 Agreements)
Planning obligations (also known as s106 agreements – of the 1990 Town & Country Planning Act) are private agreements made between local authorities and developers and can be attached to a planning permission to make acceptable development which would otherwise be unacceptable in planning terms.

Relevant Location
An outdoor, non-occupational, location where members of the public are likely to be regularly exposed to pollutants over the averaging time of the air quality objective under consideration.

Review
The consideration of current and future concentrations of air pollutants for which air quality objectives have been set.

Section 106 Agreement (s106)
A legally binding obligation made under Section 106 of the Town and Country Planning Act 1990, to secure matters necessary to render a planning applications acceptable.

Appendix A: Checklist for Detailed Air Quality Impact Assessments

The following checklist has been provided to ensure that you include all relevant information in your detailed air quality impact assessment report.

No.	Action	Check
1	Overview of the scheme to which the study relates? What is the development? Where is the development? How much parking is proposed?	
2	A description of the assessment methodology? What tools / models have been used?	
3	Appropriate modelling scenarios and projection to future years?	
4	Have traffic flows been approved by SDC? Have traffic flows, speeds and assumed modal splits been clearly documented? Has an explanation of how traffic flows have been derived been provided?	
5	Details of other emission sources considered (e.g. point sources, area sources etc)	
6	Appropriate use of emission factors?	
7	Details of background concentrations and met data discussed?	
8	Map of modelled receptor points? Have these been agreed with SDC? Do they reflect areas of maximum relevant exposure?	
9	Do contour maps (if used) show sufficient detail to show impacts at receptors? Are keys consistent between all contour maps?	
10	Verification of modelled results against local monitoring data? Does the model behave well?	
11	Description of relevant standard and comparison of modelled results with the relevant air quality objectives?	
12	Details and proposals for mitigation required? (including a Low Emission Strategy if required).	
13	Conclusions drawn and clearly stated?	

Appendix B: National Air Quality Objectives (UK) and European Directive Limit and Target Values

Pollutant	Applies	Objective	Concentration measured as	Date to be achieved by and maintained thereafter	European Obligations	Date to be achieved and maintained thereafter
Particles (PM_{10})	UK	50µg/m3 not to be exceeded more than 35 times a year	24 hour mean	31 December 2004	50µg/m3 not to be exceeded more than 35 times a year	1 January 2005
	UK	40µg/m^3	Annual mean	31 December 2004	40µg/m^3	1 January 2005
Particles ($PM_{2.5}$)	UK (except Scotland)	25µg/m^3	Annual mean	2020	Target value 25 µg/m^3	2010
Exposure Reduction	UK urban areas	Target of 15% reduction in concentrations at urban background		Between 2010 and 2020	Target of 20% reduction in concentrations at urban background	Between 2010 and 2
Nitrogen dioxide	UK	200µg/m^3 not to be exceeded more than 18 times a year	1 hour mean	31 December 2005	200µg/m^3 not to be exceeded more than 18 times a year	1 January 2010
	UK	40µg/m^3	Annual mean	31 December 2005	40µg/m^3	1 January 2010
Ozone	UK	100µg/m^3 not to be exceeded more than 10 times a year	8 hour mean	31 December 2005	Target of 120µg/m^3 not to be exceeded more than 25 times a year averaged over 3 years.	31 December 2010
Sulphur dioxide	UK	266µg/m^3 not to be exceeded more than 35 times a year	15 minute mean	31 December 2005		
	UK	350µg/m^3 not to be exceeded more than 24 times a year	1 hour mean	31 December 2004	350µg/m^3 not to be exceeded more than 24 times a year	1 January 2005
	UK	125µg/m^3 not to be exceeded more than 3 times a year	24 hour mean	31 December 2004	125µg/m^3 not to be exceeded more than 3 times a year	1 January 2005
Polycyclic aromatic	UK	0.25ng/m^3 B[a]P	As annual average	31 December 2010	Target of 1ng/m^3	31 December 2012

Pollutant	Applies	Objective	Concentration measured as	Date to be achieved by and maintained thereafter	European Obligations	Date to be achieved and maintained thereafter
hydrocarbons						
Benzene	UK	16.25µg/m^3	Running annual mean	31 December 2003		
	England and Wales	5µg/m^3	Annual mean	31 December 2010	5µg/m^3	1 January 2010
1,3- butadiene	UK	2.25µg/m^3	Running annual mean	31 December 2003		
Carbon monoxide	UK	10mg/m^3	Maximum daily running 8 hour mean	31 December 2003	10mg/m^3	1 January 2005
Lead	UK	0.5µg/m^3	Annual mean	31 December 2004	0.5µg/m^3	1 January 2005
		0.25µg/m^3	Annual mean	31 December 2008		
Protection of vegetation and ecosystems						
Nitrogen oxides	UK	30µg/m^3	Annual mean	31 December 2000	30µg/m^3	19 July 2001
Sulphur dioxide	UK	20µg/m^3	Annual mean	31 December 2000	20 µg/m^3	19 July 2001
	UK	20µg/m^3	Winter average	31 December 2000	20 µg/m^3	19 July 2001
Ozone: protection of vegetation and ecosystems	UK	Target value of 18,000µg/m^3 based on AOT40 to be calculated from 1 hour values from May to July, and to be achieved, so far as possible, 2010.	Average over 5 years	1 January 2010	Target value of 18,000µg/m^3 based on AOT40 to be calculated from 1 hour values from May to July, and to be achieved, so far as possible, 2010.	1 January 2010