September 2007

LDF

WIGAN LOCAL DEVELOPMENT FRAMEWORK

Development and Air Quality

Supplementary Planning Document

Environmental Services Department
www.wigan.gov.uk

Wigan Council

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To assist people with particular needs this document can be made available on request in larger print, braille and in a number of alternative languages.

Arabic

بالإمكان توفير هذه المعلومات في اللغة العربية.

Cantonese

這些資料可提供中文譯本。

Farsi

این اطلاعات به زبان فارسی هم میتواند در دسترس شما قرار گیرد.

French

Disponible en francais sur demande

Gujurati

Urdu

یہ معلومات اُردو میں بھی دستیاب ہو سکتی ہیں۔

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ONE

Introduction

Overview

1.1 Air quality is one of the most important issues in managing our environment and has a direct impact on our health and well-being. Compared to around 50 years ago environmental air quality nationally is generally very good. However, despite our progress there are still unacceptably high levels of pollution in some areas.

1.2 Nationally up to 24,000 people die prematurely every year in Britain and many thousands more require hospital treatment due to short term exposure to air pollution.

1.3 Air pollutants are often man-made, from traffic, heating, power generation, construction activity, manufacturing, quarrying and waste disposal. The key aim is to limit the negative impact as much as possible in order to get the best air quality achievable.

1.4 In Wigan road traffic pollution is of particular concern as around 10% of the population live close to main roads. In a Citizen Panel Survey conducted in 2006 almost half reported that they had been bothered to some degree by air pollution from traffic.

Example of Vehicle Polluting

1.5 The management of air quality is a complicated science and despite continuing research, the effects on health are still not fully understood. It is however accepted that better air quality does lead to better health.

1.6 Wigan Council is responsible for tackling poor local air quality in a cost effective way. The planning system can be a key method for providing improvement or minimising impacts. As a result air quality is an important material consideration in many planning decisions.

1.7 The aim of this document is to safeguard the environment by encouraging sustainable development that balances and integrates economic, social and environmental benefits.

1.8 It sets out a progressive approach to achieve this. Significant adverse impacts on air quality should be avoided if possible. Where they are unavoidable measures to lessen and compensate for the impacts should be applied.

1.9 In line with the national sustainable development strategy it follows the principle that environmental costs should fall on those who impose them. This is known as the "polluter pays principle". Therefore developers will need to consider air quality where:

- it may have an adverse effect on the proposed use, for example, the development of housing or a school adjacent to busy roads or significant industrial sources, or
- emissions from a proposed development may have adverse effects on existing local air quality, for example, a proposed development will lead to significant emissions to air or will generate a significant increase in emissions from road traffic.

1.10 This supplementary planning document provides detailed guidance on how to assess the impacts your development may have on air quality and how these should be addressed.

The local context

1.11 There is a National Air Quality Strategy to tackle air pollution (see Appendix A 'Useful documents and links'). Under this strategy local councils have to assess air quality from time to time and identify locations where national air quality targets may be exceeded. There are currently seven key pollutants of local concern. If the public may be exposed to poor air quality in respect of any of these pollutants, the council must declare the location as an Air Quality Management Area.

1.12 There are two key air pollutants (nitrogen dioxide and particulates) that currently approach or exceed the targets in Wigan and Air Quality Management Areas have been identified, all of which lie along principal roads. Clearly, therefore, emissions from motor vehicle traffic are a significant factor in poor air quality for Wigan.

1.13 The Air Quality Management Areas in Wigan are shown on the Replacement Unitary Development Plan Proposal Map.

Example of Air Quality Area (grey hatched area) as shown in the Replacement Unitary Development Plan Proposal Map

1.14 As a result of identifying Air Quality Management Areas, an Air Quality Action Plan has been developed. This plan sets out a programme of actions towards achieving the national air quality objectives and includes

the use of local planning policies and guidance.

1.15 This document supports and supplements the council's main planning policy on pollution, EV1B included in the Replacement Unitary Development Plan. The policy states:

The Council will reduce pollution and the effects of pollution by:

Not permitting development which would result in unacceptable levels of air pollution or which would have an unacceptable effect on air quality, particularly in or adjacent to the Air Quality Management Areas declared by the Council. Sensitive development will not be allowed in areas of unacceptably poor air quality.

1.16 The document also supports other policies included in the Replacement Unitary Development Plan that relate to wider sustainability issues. Additional guidance is also contained within other planning documents, for example the Travel Plan Supplementary Planning Document.

1.17 Greenhouse gas emissions are not controlled under the Local Air Quality Management regime. However, the aims of reducing emissions to improve air quality and reducing the release of greenhouse gases are often complementary. The aim of policy and suggested practice is to promote this link wherever possible.

1.18 The preparation of supplementary guidance on development and air quality will benefit the borough's communities and improve their well being. These benefits are diverse and include:

- Reducing energy costs in homes and other buildings
- Protecting areas from increase in pollution
- Improving access to services for non car users
- Improving the physical environment
- Potential to reduce carbon emissions

TWO

The Likely Impact on Air Quality

2.1 In order to determine acceptable and unacceptable levels of pollution, development proposals are categorised into one of four bands depending on the likely impact on air quality.

2.2 **Band 1** is for developments with a very small potential impact, by definition, falling below the threshold criteria set out for Bands 2, 3 and 4. No specific measures will be required other than the general guide that due regard should be had to air quality considerations (see recommendations for small scale developments in Appendix B 'Recommended mitigation measures and standards for developments of varying scale').

2.3 **Band 2** is for medium scale developments that, together with other developments, would have a contributory impact. This is particularly important when considering emissions from road transport, creeping background levels of pollutants and levels of non-threshold pollutants such as particulate matter. An air quality assessment will not be required for these developments but measures will be sought to mitigate or compensate for the air quality (see recommended measures for medium scale developments in Appendix B 'Recommended mitigation measures and standards for developments of varying scale') impact of these developments. The types of development likely to fall within this category are:

1. Developments with 30 or more vehicle parking spaces.
2. Developments with 10 or more trips to and from the site each day by heavy goods vehicles, buses or coaches.
3. Industrial / commercial developments with floor space >1000m2

2.4 **Band 3** is development that individually is likely to have a significant impact and, for which, an air quality assessment (see 3 'Air Quality Assessments') and mitigating and compensating measures will be required (see recommended measures for larger scale developments in Appendix B 'Recommended mitigation measures and standards for developments of varying scale'). The types of development likely to fall within this category are:

1. Proposals that will result in a change in traffic volumes (for example, a 5% increase in annual average daily traffic or peak flows) on a new or existing road with greater than 10,000 vehicles per day (annual average daily traffic).
2. Proposals that will result in a change in vehicle speed (±10 kph) on a road with greater than 10,000 vehicles per day (annual average daily traffic).
3. Proposals that will significantly increase the flow of vehicles on roads lying within an Air Quality Management Area.

4. Proposals that would significantly alter the traffic composition in an area, for example, a bus station, a heavy goods vehicle park or increased delivery traffic.
5. Proposals that include more than 80 new car parking spaces or a coach/lorry park (also considering how often each space would be used on a daily basis).
6. Industrial activities with significant emissions to the atmosphere (generally those regulated under the pollution prevention and control regimes).
7. Developments located in, or which may affect, sensitive areas such as ecological sites or areas of poor air quality (including Air Quality Management Areas), where either direct emissions to air occur, or where any of the preceding criteria are met.
8. The introduction of new exposure close to existing sources of air pollution, meaning residential uses, a school, hospital, public buildings or similar development lying within an air quality management area.
9. Construction generated impacts (large scale projects) that would affect local residents.

2.5 Band 4 is for those developments with a substantial potential impact for which adequate mitigation or compensating measures cannot be achieved. In order for this to be assessed properly it will often be necessary for an air quality assessment to be undertaken. Planning permission would be refused for such developments under Policy EV1B, unless other material considerations indicate otherwise. Clearly, if other material considerations do indicate otherwise, the maximum mitigation and use of compensating measures will be sought.

THREE

Air Quality Assessments

3.1 An air quality assessment should:

1. cover an agreed study area.
2. show the change in air pollution levels as a result of the proposed development.
3. contain qualitative / quantitative assessments of changes and provide enough information for a planning decision to be made.
4. be transparent, detailing all data used, the assumptions made and the methods applied.
5. assess air quality impacts during the construction phase.
6. assess any measures proposed to mitigate air quality impacts.
7. address the cumulative impact of the development with other potentially significant developments in the area, where relevant.

3.2 Where air quality modelling is used in an assessment the change in air pollution levels should be shown by comparisons of predictions of air quality with the development up and running (for the year the development comes into use, for a future year(s), usually five years after, and for any future air quality objective / Limit or Target value years) with predictions of the air quality in the area without the development. More details on the requirements of an air quality assessment and associated modelling requirements can be viewed in Appendices C & D.

3.3 It is best practice to submit an air quality assessment alongside the planning application. As such, early contact should be with the Council's Environmental Protection Team (see Appendix E 'List of useful contacts and specialist advice') to agree the type and scope of assessment and the key data to be used (for example, traffic data, receptor locations, point source data, background pollutant concentration data, local monitoring data, meteorological data) before undertaking any detailed work. Detailed assessments (using computer based dispersion modelling) will not be required in all cases. In some cases a more limited 'screening' or even a qualitative type of assessment may suffice.

3.4 Where a planning application for a development with a potential 'significant' impact on local air quality is submitted without such an assessment, we will either:

1. require an assessment as a condition of planning permission, which we could only do if we know that the assessed impacts can be mitigated or compensated to an appropriate degree; or
2. request such an assessment to help inform our decision, pending which we may refuse or seek the withdrawal of the application for later resubmission.

3.5 For larger industrial developments an air quality assessment may also be required as part of the permitting process under the pollution prevention and control or waste management licensing regimes. It is likely to be beneficial to submit applications in parallel.

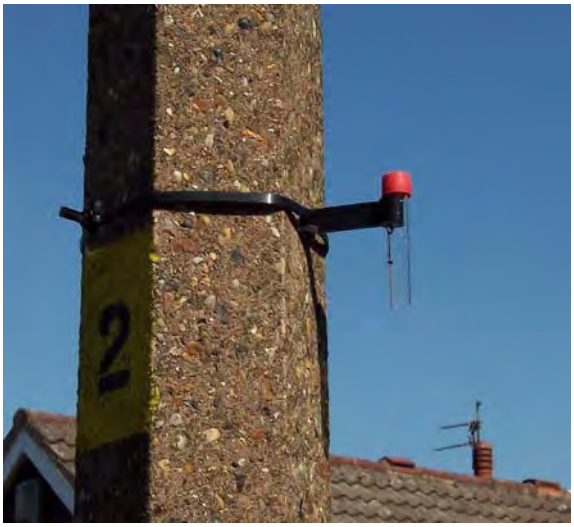
FOUR

Assessing the need for mitigation and compensating measures

4.1 The need and extent of mitigation and / or compensating measures required for a development will relate mainly to the significance of the air quality impact. In all cases the aim should be to minimise the air quality impact. Further guidance on this is contained in 'Development Control: Planning for Air Quality', NSCA - listed in Appendix A 'Useful documents and links'.

4.2 In summary the significance of the impact will depend primarily upon:

1. The extent of the increase in pollution associated with a development.
2. Whether the development is in, or affects, an Air Quality Management Area or other area with poor air quality.
3. Whether the development affects the implementation of measures under the Air Quality Strategy and Action Plan.
4. Whether the development will cause air quality Objectives / Limit or Target Value standard(s) to be approached, exceeded or worsened.
5. The exposure of people in the locality or wider area.



Photograph of nitrogen dioxide diffusion tube used to monitor air quality

4.3 In certain instances, where mitigation and/or compensating measures are included in the initial development proposal, it may be possible to avoid the need for a detailed modelled air quality assessment. In such cases the Council will need to be satisfied that the measures proposed provide the best practicable method(s) for minimising the impact and that the remaining impact (with proposed improving measures) would not be sufficient to warrant refusal. Developers wishing to pursue this option would therefore be required to submit these details with their application. This information should include:

1. Details of the proposed development and all sources of air pollution associated with the site, using an air quality screening tool.
2. Details of existing air quality in the locality of the site, using available monitoring and modelling data.

3. Consideration of all practical measures that may be used to mitigate or compensate for air quality impacts and the reasons for selecting the measures proposed.
4. An assessment of the effect of mitigation and / or compensating measures at reducing or balancing the air quality impact.

4.4 Where a financial contribution is sought for air quality action plan measures through a legal agreement, the level of contribution will be based on the scale and kind of development and the extent of any mitigation or compensation measures applied at the site.

4.5 Where the impacts are traffic related the details in Appendix F 'Methods used to guide the level of a Section 106 contribution' will be used to estimate levels of contributions expected.

4.6 Where air quality objectives / Limit or Target value standard(s) are predicted to be exceeded, monitoring may also be required at or near the development, for an appropriate period of time.

4.7 The developer may also need to make a contribution to cover the Council's legal costs incurred in making the agreement.

FIVE

Methods for mitigating or compensating for air quality impacts

5.1 There are a number of ways in which the air quality impacts of a development can be reduced, including:

1. The use of, or promoting the use of, cleaner fuels for fleets of vehicles associated with the new development, for example, electric, hybrid, liquid petroleum gas, compressed natural gas, bio-fuels or diesel fuelled vehicles fitted with particulate traps and catalytic reduction technologies.
2. Vehicle maintenance, driver training and emissions testing regimes for fleets of cars, lorries or buses associated with a development.
3. Minimising the need to travel.
4. Use of lower emission vehicles, for example, vehicles meeting specified Euro-class emission standards.
5. Traffic management.
6. Implementation of travel plans, car sharing schemes and other similar measures – see the Council's Travel Pans Supplementary Planning Document.
7. Improvements in public transport, walking and cycling in the local area.
8. Limiting the number of parking spaces associated with a development.
9. Managing the use of parking spaces.
10. Provision of secure cycle parking and associated changing facilities.
11. Use of Environmental Management Systems and Air Quality Strategies.
12. Use of pollution abatement technologies.
13. Controlling air quality during the construction phase.
14. Use of energy efficiency and renewable energy measures.
15. Choice of ventilation provision / design.
16. Contribution to wider air quality measures included in the Air Quality Action Plan.
17. Tree planting.
18. Monitoring of air quality (to inform appropriate actions).

5.2 The location, layout and design of a development may also be key to addressing an associated air quality impact. The proximity to public transport or local facilities can be significant factors in reducing polluting emissions, and the site and building layouts and design can be particularly important in reducing exposure to them.

SIX

Mitigating air quality impacts during construction

6.1 In most instances the primary concerns during construction concern emissions of dust and particulate matter that arise from the movement and storage of materials and other construction activities. The emissions from vehicles and plant machinery should also be considered.

6.2 For all developments, best practicable means should be adopted to control and reduce emissions. Therefore, where an air quality assessment is undertaken it should detail the mitigation measures proposed. Some examples that may be used are as follows:

6.3 Control of Dust

1. Use of enclosures – use of screens and sheeting to contain dust.
2. Use of paved / surfaced and cleaned haul routes and hard-standings.
3. Use of water suppression and wheel washing.
4. Choice of location and facilities for site storage where required (aggregates, sand, soil, cement etc.).
5. Location of dust generating activities e.g. stone / flag cutting.
6. Transport route selection and location.
7. No burning on site (it is an offence to dispose of waste material by burning on a construction site).

6.4 Construction Plant Emissions

1. Age and type of plant.
2. Plant maintenance.
3. Plant abatement (e.g. use of particulate traps).
4. Plant fuel.

6.5 Monitoring

1. Monitoring prior to and during development.
2. Consideration of sensitive receptors in the vicinity of the site.
3. Liaison with local residents.
4. Use of 'Considerate Contractor Schemes' or equivalent.
5. Competent staff being on site during all operations.

6.6 When necessary, planning conditions will be used to specify specific control and monitoring measures. This will generally apply only to larger development sites where the potential impact is likely to be greater.

6.7 When mobile crushing plant is to be used, it should also be permitted under the Pollution Prevention and Control Act 1999 and associated Regulations.

Appendix A

Useful documents and links

Documents

A.1 Local Air Quality Management Technical Guidance (TG03), DEFRA, 2003 (note: soon to be revised)

A.2 The Air Quality Strategy for England Scotland Wales and Northern Ireland, DEFRA 2007

A.3 The Air Quality Strategy for England Scotland Wales and Northern Ireland, A consultation document on options for further improvements in air quality, DEFRA, 2006

A.4 The Air Quality (England) Regulations 2000

A.5 The Air Quality (Amendment) Regulations 2002

A.6 The Air Quality Standards Regulations 2007

A.7 The Clean Air Act 1993

A.8 Environmental Impact Assessment (England and Wales) Regulations 1999

A.9 NSCA, Development Control: Planning for Air Quality (2006 Update), 2006

A.10 Wigan Air Quality Second Round Review and Assessment, Wigan Council, 2004

A.11 Greater Manchester Air Quality Action Plan, Association of Greater Manchester Authorities, July 2004

A.12 Air Quality Action Plan Local Annex 10 (updated annually), Wigan Council

A.13 Greater Manchester Local Transport Plan 2: Air Quality Strategy and Action Plan, Association of Greater Manchester Authorities, 2007

A.14 ODPM, 2004, Planning Policy Statement (PPS 23), Planning and Pollution Control and Annex 1 Pollution Control, Air and Water Quality

A.15 Regional Planning Guidance for the North West (RPG13) and the Regional Spatial Strategy (RSS) (see www.nwra.gov.uk)

A.16 The Environmental Effects of Dust from Surface Minerals Workings (HMSO, 1995)

A.17 Controlling particles, vapour and noise pollution from construction sites, BRE 2003

A.18 Draft London Code of Practice Part 1 : The Control of Dust from Construction, APPLE, May 2005

Useful Links

A.19 DEFRA Air Quality web site: www.defra.gov.uk/environment/airquality/

A.20 Air Quality National Archive: www.airquality.co.uk/archive/index.php

A.21 UK Governments Air Quality Review & Assessment web site: www.uwe.ac.uk/aqm/review

A.22 AQM Resource Centre, University of West England, Bristol : www.uwe.ac.uk/aqm/centre

A.23 Association of London Government : www.londoncouncils.gov.uk

A.24 Highways Agency: www.highways.gov.uk

A.25 Environment Agency: www.environment-agency.gov.uk

A.26 National Society for Clean Air: www.nsca.org.uk

A.27 The Manchester Air Pollution Advisory Council

A.28 Wigan Council www.wigan.gov.uk

A.29 Building Research Establishment (BREEAM) www.breeam.org

Appendix B

Recommended mitigation measures and standards for developments of varying scale

Residential Developments

Small scale developments (developments of less than 30 units of accommodation)

B.1 Sustainable Design - application wherever possible of standards above that are required by buildings regulations, such as Code levels 1-6 specifications under the Code for Sustainable Homes Rating System (with emphasis on gaining credits from the Energy/ CO2, Pollution and Management categories of the rating system (see notes below).

B.2 Travel - provide information and promote the use of less polluting transport – see the Council's Supplementary Planning Document on Travel Plans.

B.3 Tree planting within the site boundary (minimum one medium / large tree per unit of accommodation).

B.4 Use of appropriate dust suppression during construction phase.

Medium scale developments (30 – 80 units of accommodation)

B.5 Sustainable Design - as B1 above but development should achieve Code level 2 compliance as a minimum.

B.6 As B2 above.

B.7 As B3 above.

B.8 Controlling emissions during the construction phase – such as through the use of European standard compliant plant and vehicles, dust suppression etc. (refer to ALG 'Apple' guidance – see Appendix D).

B.9 Contribution to wider infrastructure measures included in the local Air Quality Action Plan, such as off road cycle paths, footpaths, roadside tree planting, traffic management and public transport.

Larger Scale Developments (more than 80 units of accommodation)

B.10 Sustainable Design - as B1 above but development should achieve Code level 3 compliance as a minimum.

B.11 Travel - production and implementation of a Travel Plan in accordance with the Council's Supplementary Planning Document.

B.12 Renewable energy to provide at least 10% of energy requirements - incorporate one or more of combined heat and power, micro-combined heat and power, solar water heating, photovoltaic electricity, wind power, ground source heat pumps.

B.13 Promote home shopping delivery by provision of secure drop off boxes at individual homes.

B.14 High standard of emission control / reduction during the construction phase, as B8 above.

B.15 Tree planting (minimum two medium / large trees per unit of accommodation).

B.16 As B9 above.

Commercial and Industrial Developments (including retail, leisure and public buildings)

Small or medium sized developments (below 1000sq.m floorspace)

B.17 Implement energy efficiency/ecological measures. Application wherever possible to meet standards above that required by building regulation e.g. BREEAM ratings of pass, good, very good or excellent with a significant proportion of credits being obtained from Energy, Transport, Pollution and Management elements of rating system – see notes below.

B.18 As B2 above.

B.19 Consideration and use where feasible of works/site bus transport scheme.

B.20 Implementation of preferential 'buy local' policy (to minimise transportation impact).

Medium/Large sized developments (developments with floor space equal to or above 1000m2)

B.21 As B17 above but developments to achieve minimum 'good' standard .

B.22 As B11 above.

B.23 Where possible implementation of 'lower emission vehicle' policy e.g. fleet turnover age policy, restriction on Euro Class of vehicle, specifying use of cleaner fuel technologies.

B.24 As B19 above.

B.25 High standard of emission control / reduction during the construction phase, as B8 above.

B.26 As B20 above.

B.27 As B9 above.

B.28 Tree planting where feasible on development site

Note :

B.29 For all developments the priority in terms of reducing transport emissions should be based on reducing the need to travel. For commercial developments this will involve reducing transportation requirements (through selection of local suppliers, and delivery methods), and considering the travel arrangements for the workforce. For residential developments, ease of accessibility to public transport, footpaths and cycle paths and to local shops, services and employment is key. Accessibility to such resources will obviously relate to the location of the development site itself. Sites in locations where such access is more limited will require higher mitigation specifications. Layout and design of development will also affect the air quality impact.

B.30 Building Research Establishment Environmental Assessment Method (BREEAM) for offices, retail, industrial and residential etc. is the world's most widely used means of reviewing and improving the environmental performance of such buildings

B.31 The Code for Sustainable Homes has been developed by the government to provide a system to assess the environmental sustainability of new homes in England. It provides an authoritative rating and certifying method for developments. The issues assessed are grouped into nine categories: Energy/ CO2; Water; Materials; Surface Water Run-off; Waste; Pollution; Health and Well-being; Management and Ecology. Many of the issues are optional (although minimum requirements are specified for some categories), ensuring the Code is flexible enough to be tailored to a particular development (e.g. considering air pollution issues) or market. The Ecohomes version of BREEAM may be used for residential refurbishments and conversions. For further information see website : www.breeam.org

B.32 The Council would encourage developers in all categories detailed above to use BREEAM/ Code for Sustainable Homes to demonstrate the environmental sustainability performance of

their designs; achieving a design and post construction rating of 'very good' (for BREEAM) or code level 3 or higher (for Sustainable Homes) wherever possible, with an emphasis on credits from Energy/ CO2, Transport (for BREEAM), Pollution and Management elements of the rating systems. It is recommended that a BREEAM/ Sustainable Homes design stage assessment is submitted with a planning application.

B.33 BREEAM/ Sustainable Homes rating requirements and Travel Plan requirements may overlap with other requirements included in each of the categories detailed above.

Appendix C

Detailed content of an Air Quality Assessment

C.1 An air quality assessment should contain:

C.2 A description of the proposed development and location maps containing information relevant to the air quality assessment. These should identify:

1. Any sources of pollutants associated with the development including, as appropriate, an overview of the expected traffic changes or changes in emissions from plant at the site, and
2. Any local receptors including residential properties, schools, hospitals, public buildings and other locations where people are likely to be exposed, as well as ecologically sensitive areas or sites.
3. A description of the relevant air quality standards and objectives, including UK and European air quality objective standards/ Limit or Target values and other standards if appropriate such as the Environmental Assessment Levels produced by the Environment Agency. The air quality assessments should be carried out to show compliance or otherwise with these standards/ levels.
4. Details of the assessment methods (including modelling methods where appropriate) used and the reasons for this choice. These should reflect the anticipated significance of the impact on air quality of a development and potentially the cumulative impact of other developments. In some instances assessment may need to include pollution source apportionment and changes in the population exposed. The methods selected will need to have been agreed with the Council
5. Details of any assumptions, limitations or omissions that may affect the assessment.
6. Details of source information including, as appropriate, data on:
    - traffic
    - emissions and emission factors
    - background pollutant concentrations
    - meteorological data
    - the relationship used for NOx: NO2,

- Air Quality Management Areas or sensitive areas that may be affected by the development
- receptor locations and reasons they have been chosen to assess exposure, and
- emissions from the construction process

7. The results of any modelling assessment, compared to local monitoring data where available (to validate the findings) and/or the results from validated modelling undertaken by the Council as part of the most recent local air quality management review and assessment process. More detailed guidance on model verification is contained in DEFRA technical guidance (Appendix A 'Useful documents and links').
8. A summary of the assessment results, which includes the information required to allow the Council to assess the significance of the impacts of the development (Appendix D 'Descriptors for impact magnitude and impact significance in air quality assessments').
9. Details of mitigation, compensating/ off-setting methods as appropriate, both during the construction phase and when the development is completed and operational, incorporating best practice wherever practicable. Measures proposed should also be assessed either quantitatively, or where this is not possible, qualitatively to determine or describe their likely effectiveness. Appendix B 'Recommended mitigation measures and standards for developments of varying scale' contains a list of recommended measures. A high degree of mitigation should be the priority for developments where possible.

Modelling Methods for an Air Quality Assessment

C.3 The following modelling methods can be used in an air quality assessment:

1. Screening methods, whereby a basic assessment is undertaken to establish whether an air quality problem exists and indicates whether a more detailed assessment is required. The Design Manual for Roads and Bridges screening method is usually applied for road related impacts. Screening models such as SCREEN3 and ADMS are also available for industrial sources.
2. Local scale dispersion models, which include the local road network or specific industrial sources. Typical examples are the ADMS-Roads, ADMS-Urban, AAQuIRE and AERMOD models.
3. Regional scale dispersion models, which include pollution sources over a wide area and usually only take background pollutant concentrations from rural areas outside the model domain. Some examples are ADMS–Urban and AIRVIRO.

Appendix D

Descriptors for impact magnitude and impact significance in air quality assessments

D.1 When air quality assessments are prepared for planning applications it is often appropriate to use a set of descriptors to describe the significance of the impacts predicted. There are essentially three aspects of the impact that need to be taken into account:

- the magnitude of the change;
- the absolute concentrations in relation to air quality objectives; and
- the number of people exposed to the changes.

D.2 The following tables set out descriptors for magnitude of change and significance. They derive from national guidance by the NSCA (Development Control: Planning for Air Quality, 2006 Update), but are adapted to address local requirements, as suggested)

D.3 They tables do not encompass everything. For example they do not incorporate an allowance for the number of people exposed to the changes (positive or negative) or for impacts during the construction phase.

D.4 In using the descriptors it is important not to mix up terminology that is judgemental with terminology that is describing a magnitude. For example, a change in concentration below 1% may often be described as very slight or slight. Very slight or slight are judgemental terms that apply to the significance, not the magnitude. The magnitude needs to be described using a descriptor such as small or large.

D.5 Clearly the magnitude descriptors could be ascribed to different numerical changes to those shown in Table D1, but the adoption and use of these suggested terms aids a consistent approach so that when the term 'small' is used, it is better understood. Similarly, this is the case for the 'significance descriptors' in Table D2.

D.6 The impact significance descriptors in Table D2 take account of the magnitude of the change (both positive and negative, as this is a requirement of an environmental assessments) and the absolute concentration in relation to the air quality objectives. The descriptors allow for a small

change in concentration being more significant when the concentration is above or close to the objective than when it is well below the objective.

Descriptors for Changes in Ambient Concentrations of Nitrogen Dioxide and PM10.

Magnitude of Change	**Annual Mean NO2 / PM10**	**Days PM10 >50 µg/m³**
Very Large	Increase / decrease > 25%	Increase / decrease > 25 days
Large	Increase / decrease 15-25%	Increase / decrease 15-25 days
Medium / Large	Increase / decrease 10-15%	Increase / decrease 10-15 days
Medium	Increase / decrease 5-10%	Increase / decrease 5-10 days
Small / Medium	Increase / decrease 1-5%	Increase / decrease 1-5 days
Small	Increase / decrease <1%	Increase / decrease <1 days

Descriptors for Impact Significance for Nitrogen Dioxide and PM10 Air Quality Impact Significance Criteria

Absolute Concentration in relation to Standard	Magnitude of Change					
	Small	Small / Medium	Medium	Medium/ Large	Large	Very Large
Decrease with Scheme						
Above Standard with Scheme	slight beneficial	moderate beneficial	substantial beneficial	substantial beneficial	very substantial beneficial	very substantial beneficial
Above Standard in Do - min Below with Scheme	slight beneficial	moderate beneficial	substantial beneficial	substantial beneficial	very substantial beneficial	very substantial beneficial
Below Standard in Do - min, but not Well Below	slight beneficial	slight / moderate beneficial	moderate beneficial	substantial beneficial	substantial beneficial	substantial beneficial
Well Below Standard in Do -min	very slight beneficial	slight beneficial	slight / moderate beneficial	moderate beneficial	substantial beneficial	substantial beneficial
Increase with Scheme						
Above Standard in Do - min	slight adverse	moderate adverse	substantial adverse	substantial adverse	very substantial adverse	very substantial adverse
Below Standard in Do - min Above with Scheme	slight adverse	moderate adverse	substantial adverse	substantial adverse	very substantial adverse	very substantial adverse
Below Standard with Scheme, but not Well Below	slight adverse	slight / moderate adverse	moderate adverse	moderate adverse	substantial adverse	substantial adverse
Well below Standard with Scheme	very slight adverse	slight / moderate adverse	moderate adverse	moderate adverse	substantial adverse	substantial adverse

D.7 Notes to Table D2

- The term 'Well Below Standard' means less than 75% of the 'Standard' level.
- 'Standard' in the context of this table relates to specific air quality objective or Limit value in question.
- In assigning these specific descriptors consideration has been made of the potential for the development to contribute to a 'creeping background' level inside and outside the assessment area and that particulates (PM10) particularly are considered a non-threshold pollutant and therefore changes in concentrations below the standard are still of particular significance.
- Where a development has mixed effects e.g. some residences with better air quality and some with worse, a balancing approach will be used in determining significance. Where such developments are permitted, considerable emphasis will be placed on mitigating/ compensating measures, particularly for those experiencing an air quality deterioration.

Appendix E

List of useful contacts and specialist advice

E.1 If you have any questions or need further advice or information about the issue of air quality in the planning process or other matters, or you wish to arrange a pre-application discussion, please contact:

For air quality matters / local air quality management:		
Environmental Protection Team	01942 827073	ep@wigan.gov.uk
For Planning / Development Control – West of the Borough		
Wigan	01942 488045	devconwest@wigan.gov.uk
Orrell, Billinge, Winstanley, Bryn, Ashton-in-Makerfield	01942 404275	devconwest@wigan.gov.uk
Shevington, Standish, Aspull	01942 404274	devconwest@wigan.gov.uk
For Planning / Development Control – East of the Borough		
Hindley, Abram, Platt Bridge, Atherton, Tyldesley, Astley	01942 404260	devconeast@wigan.gov.uk
Leigh, Golborne, Lowton	01942 404263	devconeast@wigan.gov.uk
For matters concerning the Wigan Local Development Framework		
Planning Policy Team	01942 404235	planningpolicy@wigan.gov.uk
For matters concerning traffic management, traffic flow and composition data		
Engineering Services Team	01942 404315	traffic@wiganmbc.gov.uk

Appendix F

Methods used to guide the level of a Section 106 contribution

Method 1 – Design Manual for Roads and Bridges (DMRB) Method

1. Using the Highways Agency 'Design Manual for Roads and Bridges' air quality screening tool (see link in Appendix A) to obtain a factor to assist in the assessment of potential Section 106 agreement contribution for a proposed development involving traffic sources.

2. This is done by using the screening assessment spreadsheet to calculate a factor by obtaining the change (µg / m3) in the annual average nitrogen dioxide (NO2) figure. **The calculated change figure obtained using this method is to be used only as a factor and is not intended to represent the actual estimated change in NO2 levels for a development.**

Step 1

1. First input the standard parameters listed below for all but the Annual Average Daily Traffic and percentages of vehicle class (light duty vehicles and heavy duty vehicles) fields.

2. The standard input parameters are:

    a. A distance of 10 metres between receptor and centre of road (using 1 link only).
    b. Background levels (annual mean value) of NO2 and NOx obtained from local automatic urban background monitoring station for most recent year available.
    c. Assessment for year when application is made.
    d. Average speed of 43 km/h
    e. Road type 'A'.

Step 2

1. Then input the variable parameters (this data is generally obtained from planning application submission or transport assessment:

a. Input total number of vehicle movements both to and from the proposed development site in Annual Average Daily Traffic field.

b. Input the estimated / predicted percentage of light duty vehicles and heavy duty vehicles associated with the proposed development.

2. Contribution in pounds sterling will be based on the factor 'N' generated by the difference between the NO2 background level used in the assessment and the level predicted i.e. the road traffic component calculated by the Design Manual for Roads and Bridges screening model.

3. Guide Contribution = £(factor 'N' X 75,000)

Method 2 – Car Trip Method (for residential development only)

1. Where possible the Design Manual for Roads and Bridges method stated above should be applied in preference to the car trip method. However, using the number of car parking spaces provided and estimated trip rates (to obtain trip rate factor) a guide contribution can also be obtained as follows:

2. Guide Contribution = £ (number of car parking spaces X trip rate factor X 100)

3. Suggested typical trip rate factors would be:

- 1.0 for residential development e.g. estate style development located more than easy walking distance from facilities and good public transport links (bus and rail) (based on an average trip rate of 7 movements per day).
- 0.5 for accommodation located close to facilities and within easy walking distance of good public transport services (both bus and rail) (i.e. 3.5 trips per day).
- 0.3 for sheltered accommodation (i.e. 2.1. movements per day)

4. Using either of these methods examples of calculated guide contributions are shown in Tables F1 and F2.

Examples of Industrial and Commercial Development (including retail, leisure and public buildings)

Number of trips to and from the development site	% cars or light goods vehicles	% heavy goods vehicles, buses or coaches	Approximate contribution (£s)
10	0	100	3750
20	50	50	3750
20	0	100	7500
50	0	100	18000
50	50	50	9750
50	70	30	6000
100	0	100	36000
100	90	10	5250
100	70	30	12000
100	50	50	18750
200	0	100	70500
200	90	10	9750
200	70	30	24000
200	50	50	37500
500	90	10	24750
500	70	30	59250
500	50	50	93000
1000	90	10	49500

Examples for residential development

Number of car parking spaces	Trip rate factor	Number of trips to and from the development site	% cars or light goods vehicles	% heavy goods vehicles, buses or coaches	Approximate contribution (£s)
30	0.3	63	100	0	750
30	0.5	105	100	0	1500
30	1	210	100	0	3000
100	0.3	210	100	0	3000
100	0.5	350	100	0	5250
100	1	700	100	0	10500
200	0.3	420	100	0	6000
200	0.5	700	100	0	10500
200	1	1400	100	0	21000
500	0.3	1050	100	0	15750
500	0.5	1750	100	0	26250
500	1	3500	100	0	51750

Appendix G

Glossary

G.1 Air Quality Objectives – The government has set a number of air quality objectives through the Air Quality Strategy and Regulations. These are periodically revised in response to European directive requirements and new scientific evidence.

G.2 Air Quality Limit and Target values – These are air quality standards set through European Commission directives

G.3 Air Quality Management Areas (AQMA) - These are designated areas of potentially poor air quality (where air quality objectives may be exceeded).

G.4 Building Research Establishment Environmental Assessment Method (BREEAM) – The method allows various environmental factors to be considered and points awarded for good performance allowing a development to be graded as a pass, good, very good or excellent standard.

G.5 Code for Sustainable Homes – This code is based on the residential version of BREEAM which for new homes in England replaces the Ecohomes as the recommended method for assessment. This has a code or star level rating system ranging from 1 to 6.

G.6 Greenhouse gases - emissions of gases such as carbon dioxide and methane which are generally considered to be responsible for climate change/ global warming. They are not classed as air quality pollutants for the purposes of Local Air Quality Management.

G.7 Local Air Quality Management – Through the Environment Act 1995 and the government's Air Quality Strategy there is a requirement placed on local authorities to assess local air quality for certain pollutants and to put in place action plans where exceedances of air quality objectives may take place.

G.8 NO2 – Nitrogen Dioxide – Pollutant generally arising directly or indirectly from combustion.

G.9 NOx – Nitrogen Oxides – The term is used to refer to the collective of various oxides of nitrogen including nitrogen dioxide and nitrogen monoxide (NO).

G.10 PM10 and PM2.5 – These are the terms used to describe small particulate pollution of a size that can be easily breathed into the lungs. Particulate is not a single chemical pollutant, but may be composed of a wide variety of substances that may have an affect on health.

G.11 Unitary Development Plan – this is the sole development plan for all of the Wigan borough.