

## Supplementary Planning Guidance (SPG) Greener Resources

### **SPG 8i Air Quality**

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#### **1. INTRODUCTION**

1.1 In assessing schemes that may affect air quality the Council will have particular regard to the following: adopted Haringey Unitary Development Plan (1998) Policies RIM 3.1 and 3.2, Haringey UDP First Deposit Consultation (2003) Policies UD1, UD2 and ENV 5, SPG 9 and this supplementary guidance<sup>1</sup>.

1.2 Supplementary guidance is provided below regarding the following:

- Causes and effects of air pollution
- Air Quality Management Area declaration and implications for Haringey
- When is an Air Quality Impact Assessment (AQIA) required?
- Scope of an AQIA
- Modelling
- Input data
- Time varying emissions
- Meteorological data
- Pollutant - specific concerns: NO<sub>2</sub> and PM<sub>10</sub>
- Output data
- Exposure
- Validation of modelling work
- Reporting the assessment
- Evaluating the significance of the assessment's results
- The use of planning conditions and planning obligations to improve air quality in Haringey
- Contact details

#### **2 CAUSES AND EFFECTS OF AIR POLLUTION**

2.1 Air pollution is the result of emissions, such as carbon monoxide, nitrogen oxides and sulphur dioxide being released into the atmosphere. The main sources of

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<sup>1</sup> The information in this SPG has been largely adapted from the ALG Transport and Environment Committee: "Air Quality Assessments for Planning applications - Technical Guidance Note 20<sup>th</sup> March 2001" Haringey would like to thank them for allowing us to reproduce material which appears on their website [www.alg.gov.uk](http://www.alg.gov.uk)

emissions are transport, energy production/consumption, combustion and industrial processes. Air pollution has been linked to health problems such as asthma and respiratory problems, and damage to the surrounding environment.

2.2 Table 1: shows the occurrences of asthma in Haringey.

**Table 1: Asthma and Bronchial Admissions in Haringey 2000 – 2001 by Age (per 1000 practice population)**

	0-14		15-34		35-54		55-74		75+	
	M	F	M	F	M	F	M	F	M	F
<b>West Haringey</b>	3.3	3.1	0.3	0.6	0.3	0.7	1.5	1.2	0.8	1.7
<b>East Haringey</b>	3.5	2.5	0.6	0.6	0.5	1.1	2.8	2.5	4.8	4.6
<b>Total</b>	3.4	2.8	0.45	0.6	0.4	0.9	2.15	1.85	2.8	3.15

Source: Enfield and Haringey Health Authority  
[http://www.beh.nhs.uk/online/ph\\_online](http://www.beh.nhs.uk/online/ph_online)

2.3 The figures in the table above show a marked difference in the occurrence of asthma between the East and the West of the borough.

### 3. AIR QUALITY MANAGEMENT AREA AND IMPLICATIONS FOR HARINGEY

3.1 The Government's National Air Quality Strategy for the UK sets out air quality standards for seven key pollutants. The Council has carried out a three-stage review and assessment of air quality in the borough based on the Governments standards for the key pollutants. The results show that in Haringey the Governments standards for PM<sub>10</sub> (dust particles) and oxides of nitrogen (NOx) will not be met by the required date (PM<sub>10</sub> – 2004 and NOx – 2005), mainly due to traffic emissions. Therefore action needs to be taken to improve air quality in Haringey, especially in relation to PM<sub>10</sub> and NOx.

3.2 Haringey has declared the whole borough as an Air Quality Management Area (AQMA) and a draft action plan<sup>2</sup> has been prepared which sets out actions to improve air quality. Actions covered in the draft action plan relate to four main areas:

- Action to reduce emissions from vehicles
- Action to reduce traffic volumes
- Action to reduce emissions from non-road traffic sources
- Awareness raising, education and public information.

<sup>2</sup> A copy of the draft action plan can be obtain from the Council's Environmental Health office or downloaded from the Council's website [www.haringey.gov.uk](http://www.haringey.gov.uk)

- 3.3 Actions that relate specifically to planning applications are reproduced at the end of this guidance.
- 3.4 The effect a development may have on the local air quality, in terms of the energy use of a building, polluting emissions from a development or the increase in traffic generated by a development, is a material planning consideration. To ensure that air quality is taken into account at the planning stage air quality impact assessments should be undertaken and submitted with a planning application where appropriate.
- 3.5 This guidance note is intended to assist developer in following the Council's preferred approach to undertaking air quality assessments for new developments, which will help ensure that any planning application is processed more efficiently. It is strongly recommended that proposals for an air quality assessment are agreed in advance with the Environmental Health department of the Council. The Environmental Health department can be contacted to assist wherever possible with any queries.

#### **4. WHEN IS AN AIR QUALITY IMPACT ASSESSMENTS (AQIA) REQUIRED?**

- 4.1 An air quality impact assessment should normally be undertaken in the following circumstances:
- Proposals that will result in an increase in vehicle trip generation in the local area, and which result in increases in traffic volumes (AADT)<sup>3</sup> of 5% or more on individual road links with more than 10,000 vehicles per day<sup>4</sup>.
  - Proposals which may result in increased congestion and lower vehicle speeds than is present on the existing local road network.
  - Proposals which significantly alter the composition of traffic such that adverse air quality impacts arise.
  - Proposals for new developments with 300 parking spaces or more or an increase in existing parking provision of 300 spaces to more.
  - Proposals for coach and lorry parks.
  - Any developments likely to have an adverse impact on air quality, particularly in sensitive areas (e.g. where predicted air pollution levels already exceed air quality objective levels by 10% or more).
  - Proposals for industrial development / commercial development with a floor space of more than 2,500 m<sup>2</sup>.
  - As part of an EIA where there will be an impact on air quality and as part of any traffic assessment (see SPG 8h: Environmental Impact Assessments and SPG7c: Transport Assessments).

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<sup>3</sup> Annual average daily traffic

<sup>4</sup> roads with lower flows but higher percentage increases in flows may still require an assessment.

## 5. SCOPE OF AN AIR QUALITY IMPACT ASSESSMENT

5.1 An air quality impact assessment needs to:

- Assess the current air quality situation in the locality
- Predict statistics relevant to the air quality objectives without the development in place (2005 for NO<sub>2</sub>, 2004 for PM<sub>10</sub>) i.e. the baseline scenario.
- Predict statistics relevant to the air quality objectives with the development in place.

5.2 An air quality impact assessment should clearly indicate the likely change in pollutant concentrations relevant to the objectives arising from the proposed development.

## 6. MODELLING

6.1 There is no definitive method for carrying out a detailed AQIA. For large development dispersion modelling will normally be necessary. Models that could be used include:

- AAQuIRE
- ADMS-Urban
- CALINE
- INDIC AirViro
- PAL

### A. Input Data

A.1 The GLA has updated their emissions inventory (this includes emissions predictions to 2005) and this inventory is the best basis currently available on which to prepare an air quality assessment within London. The GLA has indicated that this pre-prepared dataset will be available to developers required to undertake an AQIA. It is strongly recommended that this inventory be used for any AQIA within Haringey.

A.2 Further information on emissions and atmospheric emissions inventories can be found in the “late” DETR’s (now Office of the Deputy Prime Minister’s) guidance document LAQM.TG2 (00)<sup>5</sup>.

i. Time-varying emissions

Emissions from vehicles should vary within the model, by time of day and by day of week, if appropriate.

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<sup>5</sup> Review and Assessment: Estimating Emissions, LAQM.TG2 (00), DETR London 2000

ii. Meteorological Data

Meteorological data should be taken from an appropriate site (within a reasonable distance of the area to be modelled, and within similar topography)

At least one year of hourly-sequential data should be used.

The developer should agree in advance with the Council's Environmental Health department whether "typical" or "worst case" meteorological data are to be used.

iii. Pollutant-Specific Concerns: NO<sub>2</sub> and PM<sub>10</sub>

So derived from NO<sub>x</sub> via a series of complex chemical reactions. An empirical method or chemistry scheme may be used to derive NO<sub>2</sub> from NO<sub>x</sub>.

- All inputs relevant to the chosen chemistry scheme or a NO<sub>x</sub>:NO<sub>2</sub> conversion scheme should be used
- The models NO<sub>x</sub> outputs should be shown.

Any PM<sub>10</sub> modelling study should present results as a gravimetric estimate.

- PM<sub>10</sub> should be calculated as a gravimetric equivalent
- Secondary and coarse PM<sub>10</sub> components should be included.

**B. Output Data**

B.1. The output results should cover the area likely to be affected by the proposed development.

- The area affected by the development should be adequately covered by the model output.
- The output should be on an Ordnance Survey map or similar.

**C. Exposure**

C.1 The key concern with regard to assessing the air quality impact of a development in London is its impact on human health. The assessment should consider whether the development will create new areas of exposure.

**D. Validation of Modelling Work**

D.1 The developer and the Council should agree the evidence of model performance to be provided (e.g. previous studies or new site specific validation exercise).

D.2 The developer must demonstrate the model's effectiveness at predicting statistics relevant to the air quality objectives.

## **7. REPORTING THE ASSESSMENT**

- 7.1 A report on the AQIA should include the following:
- A description of the methodology used
  - Evidence of model performance or validation results
  - Details of any extra emissions calculations
  - Input data: sources included, input parameters specific to the model and site, meteorology
  - Model output data, on maps where appropriate
  - Discussion of results
  - Conclusion
  - Audit trail – the assessment should provide a transparent account of the modelling undertaken and all assumptions made. Should an audit of the assessment be required the Council may request extra data.

## **8. EVALUATING THE SIGNIFICANCE OF THE ASSESSMENT'S RESULTS**

- 8.1 The following criteria may be useful in considering whether the impact on air quality is significant:
- 8.2 Would the development cause a breach of an objective in an area where the public is likely to be exposed over the relevant period?
- 8.3 Is there a conflict with measures contained in the Air Quality Management Area: Action Plan?
- 8.4 Where air quality objectives are predicted to be breached would the development increase concentration of a pollutant by the amount given in table 2 below?

**Table 2 Predicted Increases in Pollution<sup>6</sup> Above Air Quality Objective Levels That Could Be Considered Significant**

<u>Pollutant/Objective</u>	<b>Predicted increase in pollutant concentration</b> <i>(baseline v. with development scenario)</i>
<b>Carbon monoxide (CO)</b>  11.6 mg/m <sup>3</sup> (10 ppm) or less, as running 8 hour mean	<b>≥0.3 mg/m<sup>3</sup> (0.25 ppm)</b>
<b>nitrogen dioxide (NO<sub>2</sub>)</b>  200 µg/m <sup>3</sup> (105ppb) or less as hourly mean (≤ 18 exceedances per year) <sup>7</sup>  40 µg/m <sup>3</sup> (21ppb) or less, as annual mean	<b>≥5 µg/m<sup>3</sup> (2.5 ppb)</b>  <b>≥1 µg/m<sup>3</sup> (0.5 ppb)</b>
<b>Fine particles (PM<sub>10</sub>)</b>  50 µg/m <sup>3</sup> or less, as 24 hour mean, (≤ 35 exceedances per year)  40 µg/m <sup>3</sup> or less, as annual mean	<b>≥1.25 µg/m<sup>3</sup></b>  <b>≥ 1 µg/m<sup>3</sup></b>
<b>Sulphur dioxide (SO<sub>2</sub>)</b>  266 µg/m <sup>3</sup> (100 ppb) or less, as 15 minute mean (≤ 35 exceedances)	<b>≥6.7 µg/m<sup>3</sup> (2.5 ppb)</b>

8.5 The criteria suggested in Table 2 are simply a guide to determining whether or not the contribution which a proposed development is predicted to make towards air pollution levels could be considered significant. The levels suggested should certainly not be regarded as thresholds above which development should be refused.

<sup>6</sup> Concentrations are suggested here only for carbon monoxide, nitrogen dioxide, PM<sub>10</sub> and sulphur dioxide as these are the only pollutants for which London boroughs are likely to have declared AQMAs.

<sup>7</sup> Due to the current difficulty in accurately predicting the hourly NO<sub>2</sub> air quality objective, local authorities should exercise extreme caution in interpreting as significant proposals which predict impacts only as a result of exceedances of the hourly NO<sub>2</sub> objective.

## 9. THE USE OF PLANNING CONDITIONS OR PLANNING OBLIGATIONS TO IMPROVE AIR QUALITY IN HARINGEY

9.1 There may be cases where a proposed development meets the aims and objectives contain in the UDP but there are concerns regarding its implications on air quality. In such cases the Council will normally grant permission subject to conditions or a planning obligation which could include:

- Restrictions of certain types of vehicles
- Setting of emission standards for vehicles to be used at the site
- Measures to minimise emissions
- Car parking restrictions
- Implementation of travel plans
- Provision of transport facilities (including car clubs)
- Achievement of transport mode changes
- Use of cleaner fuels for energy and heating
- Use of combined heat and power (CHP) or community heating schemes where appropriate
- The submission of a full emissions inventory
- Schemes for air quality monitoring.

9.2 For further guidance on Travel Plans see SPG 7b: Travel Plans. For other information on how to reducing incremental adverse impacts on air quality by incorporating such sustainable design elements such as passive solar design and renewable energy methods, see SPG9: Sustainability Statement – Including Checklist.

## 10 CONTACT DETAILS

10.1 For further information contact the following Council sections:

Environmental Health, 639 High Road, Tottenham, N17 8BD, Tel: 020 8489 5183

Planning Policy, 639 High Road, Tottenham, N17 8BD, Tel: 020 8489 5223

*This SPG has been consulted on as part of the Haringey UDP First Deposit Consultation. As such, it is a material consideration in determining planning applications.*