

London Borough of Haringey

London Borough Of Haringey



Air Quality Updating and Screening Assessment 2011

Part IV of the Environment Act 1995

Local Air Quality Management

April 2012

London Borough of Haringey

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Executive Summary

This Updating and Screening Assessment is a requirement under the Environment Act 1995, Part IV, for local authorities to periodically review and assess current and future air quality. This report also serves to:

- Retain the profile of LAQM within the local authority
- Provide a means of communicating air quality information to members and the public
- Maximise the usefulness and interpretation of the monitoring carried out by the local authority
- Make the next stage of review and assessment easier, as the report provides a readily available up-to-date source of information
- Help local authorities respond to enquires for information on air quality
- Provide information to help other policy areas, such as transport and land use planning
- Provide a source of information for developers carrying out air quality assessments of new schemes

The review of monitoring data, detailed in the LAQM Technical Guidance (09), has shown that the conclusions and predictions from the first round of review and assessment are still valid and that the Council was correct in its decision to declare an Air Quality Management Area for the pollutants of nitrogen dioxide and PM₁₀.

There have been no significant sources or changes since the 2009 Review and Assessment that may lead to risk of an air quality objective being exceeded in a previously unidentified location. A borough wide air quality modelling study (August 2009) identified hotspots of air pollution concern for NO₂. These hotspots are representative of relevant exposure, locations at which there may be a risk of exceedence to the hourly objective. The diffusion tube network across the borough has been reorganised to monitor these hotspot locations. Early monitoring results indicate that at some locations there is likely to be exceedences of the hourly NO₂ objective. Whilst there has been no significant change in the source of emissions of NO₂ exceedences of the annual mean objective at roadside locations are attributed to

London Borough of Haringey

the increase in primary NO₂ from vehicle emissions and vehicle technology, a result of Central Government policy.

The London borough of Haringey will continue to monitor for the pollutants of NO₂ and PM₁₀ across the borough. This will enable a robust data set to be built up for the new NO₂ diffusion tube monitoring locations, with a view to declaring Air Quality Management Areas (AQMA) for the hourly NO₂ objective. The revoking of the PM₁₀ AQMA will also be considered.

The results of this latest data collation support the findings of the last round of review and assessment, that all pollutants except nitrogen dioxide and fine particles will meet the Governments air quality objectives and also that the council was correct in its decision to declare the entire borough an Air Quality Management Area for these two pollutants. The nitrogen dioxide annual mean objective of 40µg/m³ has not been achieved adjacent the borough's main road network. Sulphur dioxide objectives have been achieved.

In January 2010 the monitoring of PM_{2.5} began at the HGY1 site, via FDMS.

Table of contents

- 1 Introduction**
 - 1.1 Description of Local Authority Area
 - 1.2 Purpose of Report
 - 1.3 Air Quality Objectives
 - 1.4 Summary of Previous Review & Assessments

- 2 New Monitoring data**
 - 2.1 Summary of Monitoring Undertaken
 - 2.2 Comparison of Monitoring Results with AQ Objectives

- 3 Road Traffic Sources**
 - 3.1 Narrow congested streets with residential properties close to the kerb
 - 3.2 Busy streets where people may spend 1-hour or more close to traffic
 - 3.3 Roads with high flow of buses and/or HGVs.
 - 3.4 Junctions and Busy Roads
 - 3.5 New roads constructed or proposed since the last round of R & A
 - 3.6 All roads with significantly changed traffic flows.
 - 3.7 Bus and Coach stations.

- 4 Other Transport Sources**
 - 4.1 Airports
 - 4.2 Railways (diesel & Steam Trains)
 - 4.3 Ports (Shipping)

- 5 Industrial Sources**
 - 5.1 New or Proposed Industrial Installations
 - 5.2 Major Fuel (petrol) storage depots
 - 5.3 Petrol Stations
 - 5.4 Poultry farms

- 6 Commercial and Domestic Sources**
 - 6.1 Biomass combustion – Individual Installations
 - 6.2 Biomass combustion – Combined Impacts
 - 6.3 Domestic Solid-Fuel Burning

- 7 Fugitive or Uncontrolled Sources**

- 8 Conclusions and Proposed Actions**
 - 8.1 Conclusions from New Monitoring Data
 - 8.2 Conclusions from Assessment of Sources
 - 8.3 Proposed Actions

- 9 References**

1 Introduction

1.1 Description of Haringey Area

The London Borough of Haringey is one of the 33 London boroughs and made up of the town centres of Wood Green, Tottenham, Muswell Hill and Highgate. Geographically located to the North of London, Haringey is classified as an outer London Borough is more than 11 square miles in area. It consists of the former boroughs of Hornsey, Wood Green and Tottenham, which were amalgamated in 1965. It shares borders with six other London boroughs. Clockwise from the north, they are: Enfield, Waltham Forest, Hackney, Islington, Camden and Barnet. Along the Eastern side is the Lea Valley, historically the home to heavy industry.

Today the borough of Haringey is predominantly residential with some light industry, mostly located along the eastern edge of the borough. According to the Office for National Statistics (ONS) estimates, Haringey's population in 2006 was 225,700. The GLA projections estimate Haringey's population to grow by 10.6% that is 23,800 residents over the next 25 years. Haringey has a tradition of diversity and within the borough there are more than 100 languages spoken.

A combination of the shopping areas, housing and the main road, rail and tube transport networks have all contributed to the development of different identities of Haringey. The transport networks connect the borough to the rest of London but also serve as borders within the borough, especially the north / south road, the A105 (Green Lanes) which divides the East and the West in the middle of the borough. The eastern part of the borough is urban residential with the western side of the A105 being more affluent and having more green open spaces. Major roads that traverse the borough include the A1, A10, A105, A406, A503, A1010 & A1055. Tottenham is also home to Tottenham Hotspurs Football Club; other well known landmarks include Alexandra Palace and Alexandra Park, Bruce Castle and Finsbury Park. The river Lee (Lea) follows the eastern boundary from North to South. The river is navigable but is little used.

25% of Haringey's total area consists of parks, recreation grounds and open spaces. There are also 5 distinct ancient woodlands which are Highgate Wood, Queens Wood,

London Borough of Haringey

Coldfall Wood, Bluebell Wood and North Wood. Highgate Woods is one of the eight Green Heritage sites in London.

Much of Haringey, including some of its deprived neighbourhoods, has relatively good public transport. This means that employment opportunities in the City and West End are fairly easily accessible, as are the opportunities of the London-Cambridge corridor and Stansted Airport. In common with many London boroughs, Haringey suffers the effects of large amounts of through road traffic. The East Coast main line (London to Edinburgh) traverses the borough North to South. This line carries electric, diesel and occasionally coal fired engines on “special trips”. The East London line from Shoeburyness to London crosses the borough East-West. This line carries mainly electric trains with occasional diesel freight.

Whilst there are no Part A and A2 processes in the borough there are a limited number of Part B processes. There are some key regeneration projects within the borough including Tottenham and Haringey Heartlands, Tottenham High Road regeneration corridor, the Upper Lea Valley and Wood Green.

1.2 Purpose of Report

This report fulfils the requirements of the Local Air Quality Management process as set out in Part IV of the Environment Act (1995), the Air Quality Strategy for England, Scotland, Wales and Northern Ireland 2007 and the relevant Policy and Technical Guidance documents. The LAQM process places an obligation on all local authorities to regularly review and assess air quality in their areas, and to determine whether or not the air quality objectives are likely to be achieved. Where exceedences are considered likely, the local authority must then declare an Air Quality Management Area (AQMA) and prepare an Air Quality Action Plan (AQAP) setting out the measures it intends to put in place in pursuit of the objectives.

The objective of this Updating and Screening Assessment is to identify any matters that have changed which may lead to risk of an air quality objective being exceeded. A checklist approach and screening tools are used to identify significant new sources or changes and whether there is a need for a Detailed Assessment. The USA report should

provide an update of any outstanding information requested previously in Review and Assessment reports.

1.3 Air Quality Objectives

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), and are shown in Table 1.1. This table shows the objectives in units of microgrammes per cubic metre $\mu\text{g}/\text{m}^3$ (milligrammes per cubic metre, mg/m^3 for carbon monoxide) with the number of exceedences in each year that are permitted (where applicable).

London Borough of Haringey

Table 1.1 Air Quality Objectives included in Regulations for the purpose of Local Air Quality Management in England.

Pollutant	Air Quality Objective		Date to be achieved by
	Concentration	Measured as	
Benzene	16.25 $\mu\text{g}/\text{m}^3$	Running annual mean	31.12.2003
	5.00 $\mu\text{g}/\text{m}^3$	Running annual mean	31.12.2010
1,3-Butadiene	2.25 $\mu\text{g}/\text{m}^3$	Running annual mean	31.12.2003
Carbon monoxide	10.0 mg/m^3	Running 8-hour mean	31.12.2003
Lead	0.5 $\mu\text{g}/\text{m}^3$	Annual mean	31.12.2004
	0.25 $\mu\text{g}/\text{m}^3$	Annual mean	31.12.2008
Nitrogen dioxide	200 $\mu\text{g}/\text{m}^3$ not to be exceeded more than 18 times a year	1-hour mean	31.12.2005
	40 $\mu\text{g}/\text{m}^3$	Annual mean	31.12.2005
Particles (PM₁₀) (gravimetric)	50 $\mu\text{g}/\text{m}^3$, not to be exceeded more than 35 times a year	24-hour mean	31.12.2004
	40 $\mu\text{g}/\text{m}^3$	Annual mean	31.12.2004
Sulphur dioxide	350 $\mu\text{g}/\text{m}^3$, not to be exceeded more than 24 times a year	1-hour mean	31.12.2004
	125 $\mu\text{g}/\text{m}^3$, not to be exceeded more than 3 times a year	24-hour mean	31.12.2004
	266 $\mu\text{g}/\text{m}^3$, not to be exceeded more than 35 times a year	15-minute mean	31.12.2005

There are new obligations for Particles (PM_{2.5}) however Local authorities are not required to monitor.

1.4 Summary of Previous Review and Assessments

The London Borough of Haringey completed the first round of Review and Assessment (Stages 1 – 4) in January 2003. This first round concluded that of the seven key pollutants, the objective levels for both nitrogen dioxide (NO₂) and fine particulates (PM10) are likely to exceed national objectives. The whole of the borough of Haringey is designated an Air Quality Management Area (AQMA) for NO₂ and PM10. The Council has produced the following documents to fulfil the requirements of Part IV of the Environment Act 2005:

- Following on from the declaration of the AQMA, an Air Quality Action Plan;
- an Updating and Screening Assessment (2003)
- an Action Plan Progress Report (2004),
- an Air Quality progress report and review and assessment report (2005)
- an Updating and screening assessment (2006) & Air Quality Progress Report (2006),
- an Air Quality Progress Report and Review and Assessment Report (2007)
- a Review and Assessment Report and Air Quality Action Plan Progress Report (2008).
- an Updating and Screening Assessment (2009) & Air Quality Progress Report (2009)
- a revised and Updated Air Quality Action Plan (2010)
- and an Air Quality Progress Report (2010).

This Updating and Screening Assessment follows the latest Technical Guidance LAQM.TG (09) and is a prescriptive approach to report on new monitoring data, new pollutant objectives, new sources or significant changes to existing sources and other changes that might affect air quality.

The previous report, the Air Quality Progress Report 2010 concluded that monitoring indicated a slight increase in the levels of annual NO₂ levels across the borough, therefore earlier predictions remain valid and the Council was correct in its decision to declare an Air Quality Management Area for the pollutants of nitrogen dioxide and PM₁₀.

2 New Monitoring Data

2.1 Summary of Monitoring Undertaken

2.1.1 Automatic Monitoring Sites

Haringey Council has been automatically monitoring air pollution since 1994. To date there are two automatic monitoring sites in operation within the borough; one roadside and one urban background. There have been no new sites or sites that have closed down since the previous report. Appendix 1 shows a map of the locations of all monitoring sites, automatic and non-automatic, in the borough as at December 2011. Table 2.1 gives details of the automatic monitoring sites within the borough.

Table 2.1 Details of Automatic Monitoring Sites

Site Name	Site Type	OS Grid Ref	Pollutants Monitored	In AQMA?	Relevant Exposure? (Y/N with distance (m) to relevant exposure)	Distance to kerb of nearest road	Worst-case Location?
HGY1	Roadside	X 533890 Y 190710	NO2, PM10 & PM2.5 & SO2	Yes	Yes (0m – residential).	4m	Yes
HGY2	Urban Background	X 529895 Y 189125	NO2, PM10 & O3	Yes	No	N/A	No

Data

Monitoring data is imperative to the requirement under the Environment Act 1995 for local authorities to periodically review and assess the air quality in their area.

Monitoring data provides:

- A measure of actual concentrations and exceedences of objectives
- Information on trends in air pollution
- Provides the basis for verifying the results of air quality models used to predict future air pollution.

For this reason, data from both sites are included in the London Air Quality Network (LAQN), which is managed by the Environmental Research Group (ERG), Kings College London. ERG manages the data collected, validates and ratifies it in order for it to be 'fit for purpose'. In addition, both sites are part affiliated to the Automatic Urban & Rural Network (AURN). AURN sites are funded by defra and the data has traceability to

national standards. Affiliated sites are part funded by defra and part funded by the local authority.

Routine calibrations for each analyser type are undertaken fortnightly. Each site is audited bi-annually following a full service. The calibrations support the quality assurance and quality control (QA/QC) checks that are carried out on the raw data to the LAQN/AURN network standard. This is to ensure that:

- Data is representative of ambient concentrations in the area
- Measurements are accurate and precise in order to meet monitoring requirements
- Data can be consistently compared with data from national and international standard sites
- Measurements are consistent over time

PM10 levels are measured by Filter Dynamics Measurement System (FDMS). In January 2010, an FDMS monitor was installed at the HGY1 station to measure PM2.5 levels.

Further information on data validation and ratification is available on the ERG website: www.londonair.org.uk

2.1.2 Non-Automatic Monitoring

For monitoring locations of diffusion tubes throughout the borough see Appendix 1.

The non-automatic sites are diffusion tube sites and all monitor for nitrogen dioxide. Diffusion tubes provide an indicative measure of the pollutant being monitored. The advantage of using diffusion tubes is that they are inexpensive and provide useful information on pollutant variations across the borough, to identify pollution hotspots and long-term trends.

The diffusion tubes are prepared and analysed by Lambeth Scientific Services who are a UKAS accredited laboratory. This laboratory participates in the WASP scheme (Workplace Analysis Scheme for Proficiency) to meet European standards and is involved in the network field inter-comparison exercise operated by NETCEN, which

London Borough of Haringey

assesses the sampling and analytical performance of the tubes. Nitrogen dioxide diffusion tubes are prepared using the 50% triethanolamine (TEA) in acetone method.

The Council has been monitoring for nitrogen dioxide by diffusion tube at ten locations throughout the borough since 2004. Towards the end of 2010, six of these monitoring location sites were closed and nine new locations were opened. These nine new locations were chosen as result of the latest air quality modelling that was carried out in 2009 by Bureau Veritas on behalf of the North London Cluster Group. The modelling identified hotspot locations where the hourly NO₂ objective may be at risk of being exceeded and where there is relevant exposure. From July 2011 there are currently thirteen diffusion tube monitoring locations. Table 2.2 details the individual site details where the new sites are highlighted in bold. Results of four sites are fed into the UK Nitrogen Dioxide Diffusion Tube Network. The locations are a mixture of roadside and background sites. Diffusion tube ref: HR14 continues to be co-located with HGY1 automatic monitoring site.

Table 2.2 Details of Non- Automatic Monitoring Sites

Site Name	Site Type	OS Grid Ref	Site Open / Closed	In AQMA?	Relevant Exposure? (Y/N with distance (m) to relevant exposure)	Distance to kerb of nearest road	Worst-case Location?
HR06	Roadside	528940 187660	Open	Y	Y (2m)	0m	N
HR07	Urban Background	534400 190160	Open	Y	N	N/A	N
HR08	Urban Background	530440 189450	Open	Y	Y	0m	Y
HR10	Roadside	530860 190690	Closed Nov 2010	Y	N	8m	N
HR13	Roadside	531460 189670	Closed Nov 2010	Y	N (6m)	3m	Y
HR14	Roadside	533890 190710	Open	Y	Y (0m – residential)	4m	Y
HR15	Roadside	528810 189690	Closed Nov 2010	Y	Y (3m)	0m	Y
HR16	Roadside	534370 189460	Closed Nov 2010	Y	N	2m	Y
HR17	Roadside	531060 190270	Closed Nov 2010	Y	Y	3m	Y
HR18	Roadside	530990 190420	Closed Nov 2010	Y	N (8m)	3m	Y
HR19	Roadside	527897 188558	Open Nov 2010	Y	Y	2m	Y
HR20	Roadside	527974 188329	Open Nov 2010	Y	Y	2m	Y
HR21	Roadside	532010 190549	Open Nov 2010	Y	Y	8m	Y
HR22	Roadside	533612 188841	Open Nov 2010	Y	Y	3m	Y
HR23	Roadside	533720 189471	Open Nov 2010	Y	Y(15m)	10m	N
HR24	Roadside	532155 190517	Open Nov 2010	Y	Y	3m	Y
HR25	Roadside	532554 191383	Open Nov 2010	Y	Y	9m	Y

London Borough of Haringey

Table 2.2 Details of Non- Automatic Monitoring Sites – cont'd

Site Name	Site Type	OS Grid Ref	Site Open / Closed	In AQMA?	Relevant Exposure? (Y/N with distance (m) to relevant exposure)	Distance to kerb of nearest road	Worst-case Location?
HR26	Roadside	527800 191800	Open July 2011	Y	Y	1m	Y
HR27	Roadside	531758 188872	Open July 2011	Y	Y	5m	Y

All sites are indicative of relevant exposure. The diffusion tubes are located at building facades of schools and residential properties where possible. Only HR 23 is located as close as possible to the main road and is set back from the main building line.

2.2 Comparison of Monitoring Results with AQ Objectives

2.2.1 Nitrogen Dioxide

The borough of Haringey has been designated a whole borough Air Quality Management Area (AQMA) for NO₂, as have neighbouring boroughs. The principal source of nitrogen dioxide (NO₂) in Haringey is from road transport; increases in which are attributed to the increase of diesel fuelled vehicles. Other releases are from combustion processes such as boiler plant and industrial emissions. It is nitrogen dioxide that is associated with adverse effects on human health and is one of the pollutants of concern within the London area. Road traffic emissions are currently the dominant source of NO_x in Haringey.

Automatic Monitoring Data

Tables 2.3a and b illustrate the annual mean and 1-hour mean monitored data from the two automatic monitoring sites operating within the borough. Exceedences of the objectives are in red.

Both automatic monitoring locations are representative of public exposure. As can be seen from the table, the roadside site, HGY 1 again measured exceedences of the annual objective for NO₂ than previous recent years. As a result of the Tottenham riots, this site was closed for 3 months, becoming operational again in October 2011. During

London Borough of Haringey

this 3 month period, data was lost. The results for that year are not an accurate representation of the air quality at that location and have resulted in a low, overall data capture rate. For this site the nearest relevant exposure are residential properties <4m from the kerb; the sample inlet is in line with the building façades. This demonstrates relevant exposure and that the Council was correct in its decision to declare an AQMA for the whole borough for NO₂.

HGY2 is located in a local park and is classified as an urban background site. At this location the annual objective of 40µg/m³ has been achieved. The overall NO₂ trend remains steady and in 2011 there is a significant reduction in the amount of background NO₂ monitored. This site is not representative of relevant exposure with the London area, as it is located in an open park.

The hourly NO₂ objective was achieved at both monitoring locations, except in 2007 at the HGY 1 site. However this uncharacteristic exceedence could have been as a result of local building or road works taking place.

London Borough of Haringey

Table 2.3a Results of Automatic Monitoring for Nitrogen Dioxide: Comparison with Annual Mean Objective

Site ID	Location	Annual mean concentrations ($\mu\text{g}/\text{m}^3$)											
		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011*
HGY1	High Road, N17	51	48	46	52	46	42	43	42	37	42	45 (97%)	38 (74%)
HGY2	Priory Park N8	37	38	35	37	34	34	33	32	32	34	34 (99%)	29 (85%)

*Data for 2011 not fully ratified.

(%) valid data capture rate for NO_2 for that year.

Table 2.3b Results of Automatic Monitoring for Nitrogen Dioxide: Comparison with 1-hour Mean Objective

Site ID	Location	Number of exceedences of hourly mean ($200 \mu\text{g}/\text{m}^3$)											
		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011*
HGY1	High Road, N17	0	0	0	0	0	1	0	21	0	0	0 (97%)	0(74%)
HGY2	Priory Park N8	0	0	0	0	0	0	0	3	0	4	0 (99%)	0 (85%)

*Data for 2011 not fully ratified.

(%) valid data capture rate for NO_2 for that year.

■ Data affected by Tottenham riots.

London Borough of Haringey

Diffusion Tube Monitoring Data

Diffusion tubes are considered to have poor accuracy. It was recommended that tubes should be co-located with an automatic analyser to determine a local bias adjustment factor. This adjustment factor is then applied to the raw annual average data for the same year to obtain accurate results. The bias adjustment factors are on the website; <http://laqm.defra.gov.uk/bias-adjustment-factors/national-bias.html>

Tables 2.4a and b lists the annual average raw data from diffusion tube sites in Haringey. Bias adjusted results are highlighted in bold using the analysing laboratory adjustment factors. Those highlighted in red indicate an exceedence of the annual objective. The bias adjustment factor used for 2010 is 1.08 and for 2011 is 1.06

Table 2.4a Results of Nitrogen Dioxide Diffusion Tubes

Location	2010 ($\mu\text{g}/\text{m}^3$) Adjusted for bias (1.08)	Location	2011 ($\mu\text{g}/\text{m}^3$) Adjusted for bias (1.06)
HR06	66.5 (71.82)	HR06	58.5 (62.0)
HR07	35.3 (38.07)	HR07	30.8 (32.68)
HR08	33.1 (35.73)	HR08	34.8 (36.91)
HR10	36.3 (39.20)	HR14	41.7 (44.23)
HR13	65.9 (71.1)	HR19	38.5 (40.81)
HR14	43.2 (46.6)	HR20	36.80 (39.0)
HR15	53.00 (57.2)	HR21	38.1 (40.39)
HR16	22.2 (23.9)	HR22	46.3 (49.0)
HR17	64.2 (69.3)	HR23	39.3 (41.69)
HR18	63.6 (68.68)	HR24	42 (44.52)
		HR25	34.2 (36.23)
		HR26*	47.2 (50.0)
		HR 27*	39.7 (42.0)

* These sites have only been operational for 6 months, from July 2011;

London Borough of Haringey

Haringey co-locates a tube at HGY1 (HR14) and submits the data annually to the UK Nitrogen dioxide network and the information used contributes to the calculation of the bias adjustment factor. The diffusion tubes are exposed in accordance with national guidance.

The sites which have measured an exceedence of the NO₂ annual objective are highlighted in red all of which are roadside sites representing relevant exposure; indicating the NO₂ concentrations at residential façades. Sites HR 26 and HR27 have been operational since July 2011; hence the data is not indicative of a full year. However the raw data is recording similar concentrations month by month and so there are exceedences of the annual objective at these locations. HR06, which is located on a building façade on the A1 (Archway Road), is the only site to indicate a likely exceedence of the hourly objective. It is indicative of relevant exposure with residential dwellings fronting this major through road.

Table 2.4b Historical Results of Nitrogen Dioxide Diffusion Tubes Monitoring

Annual Mean Concentrations (µg/m ³) – adjusted for bias.						
	2004	2005	2006	2007	2008	2009
Bias adjustment Factor	1.19	1.24	1.28	1.07	0.98	1.03
HR06	74	70	69	67	72	72
HR07	37	35	34	36	32	33
HR08	36	36	38	27	34	35
HR10	56	34	30	27	39	33
HR13	77	77	85	75	74	75
HR14	39	47	55	36	46	48
HR15	60	52	62	50	44	55
HR16	57	60	62	49	60	69
HR17	70	85	96	69	73	86
HR18	70	57	65	59	69	66

London Borough of Haringey

2.2.2 PM₁₀

The London Borough of Haringey is designated an AQMA for PM₁₀, as have neighbouring boroughs. The principal source of PM₁₀ in Haringey is attributed to diesel fuelled vehicles, in particular HGVs, LGVs and buses. This was illustrated at the Stage IV Review and Assessment. These small particles (<10µm diameter) can be breathed into the deepest parts of the lung, carrying with them a range of both natural and man made substances and are associated with both respiratory and cardio-vascular health problems.

The principal sources of fine particulates (PM₁₀) can be divided into three main categories; *Primary Sources* - from combustion sources including road traffic, power generation and industrial combustion, *Secondary sources* - formed from chemical reactions in the atmosphere and *Coarse Sources* – all other sources including resuspended dusts, construction work dust, mineral extraction works, wind-blown dusts and soils, including sea salt and biological particles.

See section 2.1.1 for an explanation of data management and validation. Tables 2.5a and b illustrates the annual mean and 24hour means monitored data from the automatic monitoring sites operating within the borough. All results from TEOM PM₁₀ analysers from 2004 onward have been converted to reference equivalence using the volatile correction method from the ERG website.

In June 2009 an FDMS (Filter Dynamics Measurement System) was installed at the HGY1 site to measure concentrations of PM_{2.5}. The results are not reported here as local authorities do not have responsibility for PM_{2.5}; the Government's approach is to set a national exposure reduction target defined as a percentage reduction in annual average concentrations of PM_{2.5}.

The tables show there has been no exceedences of either the annual mean PM₁₀ or the 24 hour mean objective. For HGY1 the nearest relevant exposure is residential properties which are within 4m from the kerbside. HGY2 is located in a park and is classified as an urban background site. This site is not representative of relevant exposure with the London area.

London Borough of Haringey

Table 2.5a Results of PM₁₀ Automatic Monitoring: Comparison with Annual Mean Objective

Site ID	Location	Within AQMA?	Annual mean concentrations ($\mu\text{g}/\text{m}^3$)											
			2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
HGY1	High Road, N17	Y	26	27	27	29	23	24	24	26 (72%)	21 (66%)	21	23	26* (66%)
HGY2	Priory Park N8	Y	22	25	26	29	30	23	26	26 (68%)	20	18	17	19*

(%) Data capture rate – where below 75%

Data for year is not fully ratified.

■ Data affected by Tottenham riots.

Table 2.5b Results of PM₁₀ Automatic Monitoring: Comparison with 24-hour Mean Objective

Site ID	Location	Within AQMA?	Number of Exceedences of daily mean objective ($50 \mu\text{g}/\text{m}^3$)											
			2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
HGY1	High Road, N17	Y	12	14	15	34	7	16	11	22 (72%)	6 (66%)	5	9	19* (66%)
HGY2	Priory Park N8	Y	11	12	11	34	17	13	10	13 (68%)	8	1	1	8*

(%) Data capture rate – where below 75%

*Data for year is not fully ratified.

■ Data affected by Tottenham riots.

London Borough of Haringey

2.2.3 Sulphur Dioxide

The principal source of sulphur dioxide (SO₂) is from power stations and industrial combustion sources. Other sources include domestic and commercial heating.

Concentrations of sulphur dioxide have seen to be continually declining as a result of industries switching from oil or coal-fired heating to gas-fired heating and reductions in the sulphur content of vehicle fuel.

See section 2.1.1 for an explanation of data management and validation. Tables 2.6a and 2.6b illustrate the measured exceedences of the 15 minute, hourly and 24 hour means. Sulphur dioxide is monitored for at HGY1 (High Road, N17) only and is representative of public exposure. As can be seen from the table, there were no exceedences of any of the averaging means for SO₂. Sulphur Dioxide is not a pollutant of concern in Haringey. The SO₂ monitor was switched off at the end of the monitoring year, December 2010.

Table 2.6a: Sulphur dioxide (µg/m³) concentrations measured at HGY1

Year	Exceedences of 15 Minute Means	Exceedences of hourly Mean	Exceedences of 24 hour Mean	Data Capture rate
2000	None	None	None	91%
2001	None	None	None	94%
2002	None	None	None	95%
2003	None	None	None	91%
2004	None	None	None	98%
2005	None	None	None	99%
2006	None	None	None	97%
2007	None	None	None	98%
2008	None	None	None	97%
2009	None	None	None	98%
2010*	One	None	None	94%

* Data from year is not fully ratified

2.2.4 Benzene

Monitoring Data

The first round of review and assessment identified no exceedences of the benzene objective in the borough of Haringey. This pollutant is not monitored

2.2.5 Other pollutants monitored

Ozone is monitored for at the HGY 2 site. Ozone is not a pollutant of concern for Local Authorities and so is not reported on in this assessment.

3 Road Traffic Sources

3.1 Narrow Congested Streets with Residential Properties Close to the Kerb

The London Borough of Haringey confirms that there are no new/newly identified congested streets with a flow above 5,000 vehicles per day and residential properties close to the kerb, that have not been adequately considered in previous rounds of Review and Assessment.

3.2 Busy Streets Where People May Spend 1-hour or More Close to Traffic

The London Borough of Haringey confirms that there are no new/newly identified busy streets where people may spend 1 hour or more close to traffic.

3.3 Roads with a High Flow of Buses and/or HGVs.

The London Borough of Haringey confirms that there are no new/newly identified roads with high flows of buses/HGVs.

3.4 Junctions

The London Borough of Haringey confirms that there are no new/newly identified busy junctions/busy roads.

3.5 New Roads Constructed or Proposed Since the Last Round of Review and Assessment

The London Borough of Haringey confirms that there are no new/proposed roads.

3.6 Roads with Significantly Changed Traffic Flows

The London Borough of Haringey confirms that there are no new/newly identified roads with significantly changed traffic flows.

3.7 Bus and Coach Stations

The London Borough of Haringey confirms that there are no relevant bus stations in the Local Authority area.

4 Other Transport Sources

4.1 Airports

The London Borough of Haringey confirms that there are no airports in the Local Authority area.

4.2 Railways (Diesel and Steam Trains)

The London Borough of Haringey confirms that there are no locations where diesel or steam trains are regularly stationary for periods of 15 minutes or more, with potential for relevant exposure within 15m.

4.2.1 Stationary Trains

The London Borough of Haringey confirms that there are no locations where diesel or steam trains are regularly stationary for periods of 15 minutes or more, with potential for relevant exposure within 15m.

4.2.2 Moving Trains

The London Borough of Haringey confirms that there are no locations with a large number of movements of diesel locomotives, and potential long-term relevant exposure within 30m.

4.3 Ports (Shipping)

The London Borough of Haringey confirms that there are no ports or shipping that meets the specified criteria within the Local Authority area.

5 Industrial Sources

5.1 Industrial Installations

5.1.1 New or Proposed Installations for which an Air Quality Assessment has been carried out

New industrial installations for which an air quality assessment has been carried out are:

- London Concrete – cement batching plant, Ferme Park Railway sidings, Cranford Industrial Estate, N8. The air quality assessment concluded that the installation would not impact on air quality and that there are no sensitive receptors nearby.

The London Borough of Haringey confirms that there are no new or proposed industrial installations for which planning approval has been granted within its area or nearby in a neighbouring authority.

5.1.2 Existing Installations where Emissions have increased substantially or New Relevant Exposure has been introduced

The London Borough of Haringey confirms that there are no industrial installations with substantially increased emissions or new relevant exposure in their vicinity within its area or nearby in a neighbouring authority.

5.1.3 New or Significantly Changed Installations with No Previous Air Quality Assessment

The London Borough of Haringey confirms that there are no new or proposed industrial installations for which planning approval has been granted within its area or nearby in a neighbouring authority.

5.2 Major Fuel (Petrol) Storage Depots

There are no major fuel (petrol) storage depots within the Local Authority area.

London Borough of Haringey

5.3 Petrol Stations

The London Borough of Haringey confirms that there are no petrol stations meeting the specified criteria.

5.4 Poultry Farms

The London Borough of Haringey confirms that there are no poultry farms meeting the specified criteria.

6 Commercial and Domestic Sources

6.1 Biomass Combustion – Individual Installations

The table below identifies known biomass boilers in operation within the London Borough of Haringey area. As can be seen from the table, information regarding these is vague

Location	Biomass Plant	Assessment Information
Tottenham Hale Village	2 x Lin-Ka 1.6 MW (aggregated to > 3MW).	An air quality assessment was carried out as part of the planning application and the biomass was assessed as not having a significant impact on the nearest residential receptors.
Woodside High School	Borag-Gilles 240Kw.	Installed during summer 2010. An air quality assessment has not been submitted with the planning application.

6.2 Biomass Combustion – Combined Impacts

The council holds no records of small domestic and commercial solid-fuel burners that may be operating within the borough.

The London Borough of Haringey confirms that there is no such biomass combustion plant in the Local Authority area.

6.3 Domestic Solid-Fuel Burning

The London Borough of Haringey confirms that there are no areas of significant domestic fuel use in the Local Authority area.

7 Fugitive or Uncontrolled Sources

The London Borough of Haringey confirms that there are no potential sources of fugitive particulate matter emissions in the Local Authority area.

8 Conclusions and Proposed Actions

8.1 Conclusions from New Monitoring Data

New monitoring data shows that there have been no exceedences of the PM10 annual mean and 24 hour objective but that the NO₂ annual mean objective has been exceeded at monitoring locations adjacent busy roads and is close to the annual mean objective at background locations. Diffusion tube monitoring data indicates likely exceedences of the hourly NO₂ objective; where the annual mean is above 60µg/m³.

These results continue to demonstrate that the London Borough of Haringey was correct in its decision to declare an Air Quality Management Area for the pollutants of PM10 and NO₂. Although the monitoring results for PM10 show no exceedences, monitoring for this pollutant will continue for the foreseeable future. The high levels of NO₂ are likely to be as a result of the increase in diesel fuelled vehicles and also as a direct result of the diesel particulate filters fitted to London buses and HGV's. These filters deliberately produce NO₂ to help oxidise particles.

The London Borough of Haringey will consider revoking the AQMA declared for PM10.

The sulphur dioxide objectives have been achieved. Monitoring for this pollutant ceased at December 2010.

8.2 Conclusions from Assessment of Sources

There are no new local sources that might affect local air quality, such as.

- New industrial processes
- New retail or mixed use developments that could significantly change traffic flows
- New landfills sites, quarries etc with nearby public exposure
- New road schemes or significant changes to existing road schemes

London Borough of Haringey

There are no landfills, quarries or Part A/A1 industrial processes in Haringey. With respect to 'Part B' permitted installations, in December 2011 there were a total of 8 industrial premises, 16 service stations and 43 dry cleaner premises permitted.

The majority of new or planned developments over the last year have been residential or mixed-use developments. Few are large enough to have a significant impact on local traffic flows. Major developments approved of at December 2011 and for which air quality was a consideration include:

- Northumberland Park redevelopment (Tottenham Hotspur Football Club). Redevelopment of site to include large superstore with >400 parking spaces, realignment of football ground, residential units, a college, health centre and health club.
- Crouch End Town Hall, redevelopment to include residential, theatre and café/restaurant
- Coronation Sidings – Network rail to install depot works/ units, including a biomass boiler.
- Stainby Road, N17 a housing development adjacent the Tottenham Hale gyratory. The air quality assessment considered that there would be some air pollution impact on the new receptors.

Major planning applications for which air quality was not considered are:

- Haringey Heartlands / Clarendon Road, N22 – large scale mixed use development of 1080 residential units, offices – retail and financial, cafes/restaurants, community/ leisure centre, 251 parking spaces and an energy centre. No air quality assessment was submitted with this proposed redevelopment works; thus the air quality impact has not been considered.

Haringey endeavours to use the planning process to minimise the impact on local traffic to prevent increases in congestion and worsening air quality. There have been car-free residential dwellings and the council's UDP has parking standards to limit residential parking. Most major developments are required to implement measures such as travel plans and local improvements to reduce traffic as part of Section 106 agreements. Not all planning applications require a detailed air quality assessment to be carried out, but an effort is made to consider each major application with a regard to air quality.

There have been no new road schemes or significant changes to existing road schemes which will impact on air quality.

Notwithstanding the above, biomass boilers may have an impact on local air quality, particularly for NO₂ emissions. As noted earlier, detailed information is being sought from the interested parties with respect to biomass boiler installations, when assessments of individual biomass combustion can be carried out.

8.3 Proposed Actions

The updating and screening assessment has not identified the need for any detailed assessments.

Air quality dispersion modelling for the whole borough was carried out June 2009. This was to update the previous modelling which was carried out in 2001. Updated emissions inventories, refinement in modelling technology, advances in vehicle technology and changes in traffic types flows due to recent changes in London, such as the low Emissions Zone and Congestion Charge and the requirement to report on NI 194, influenced the need for a more up to date picture of air quality in the borough. This modelling identified 'hotspots' of air pollution concern and diffusion tube monitoring is now undertaken at most of these locations.

Haringey's automatic monitoring stations are affiliated to the national automatic network, the AURN and so are part funded by defra. In May 2010 a new FDMS PM10 analyser replaced the TEOM together with the addition of a PM2.5 analyser at the HGY1 site. This was provided by defra at no cost to Haringey.

Due to the continuing meeting of the SO₂ objectives the continuous monitoring of this pollutant has ceased.

Air quality monitoring will continue for the foreseeable future.

9 References

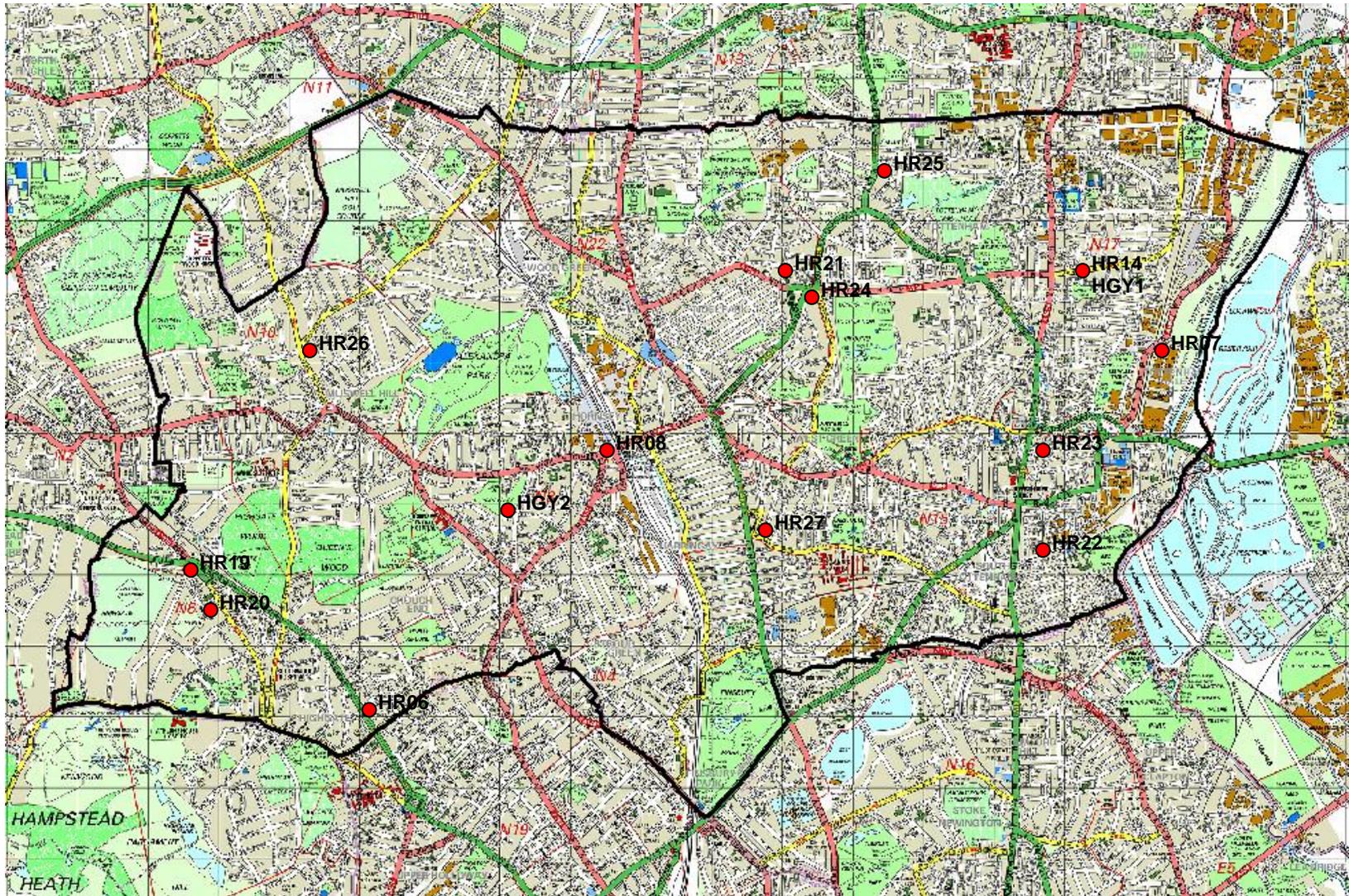
- **The Increasing Importance of Primary NO₂ emissions**
David Carslaw, University of Leeds, 2007.
- **Local Air Quality Management Technical Guidance**
LAQM.TG(09)
- **www.LondonAir.Org**
- **LB Haringey Borough Profile 2008**
- **Haringey's Community Strategy 2007 - 2016**

London Borough of Haringey

Appendices

Appendix 1: Monitoring Station locations.

London Borough of Haringey



Haringey Monitoring Sites

Licence number 100019199 (2012).

London Borough of Haringey

Appendix A: QA:QC Data

Diffusion Tube Bias Adjustment Factors

The diffusion tubes are prepared and analysed by Lambeth Scientific Services who are a UKAS accredited laboratory. This laboratory participates in the WASP scheme (Workplace Analysis Scheme for Proficiency) to meet European standards and is involved in the network field inter-comparison exercise operated by NETCEN, which assesses the sampling and analytical performance of the tubes.

Nitrogen dioxide diffusion tubes are prepared using a 50% triethanolamine (TEA) in acetone. Results of 4 of the 10 sites are fed into the UK Nitrogen Dioxide Diffusion Tube Network.

Factor from Local Co-location Studies (if available)

One diffusion tube is co-located with an automatic analyser for NO₂. This is at the High Road monitoring site (HGY1). All diffusion tube results have been appropriately bias adjusted, using the analytical laboratory adjustment factors; as only one diffusion tube is co-located.

For all diffusion tube results, both raw and bias adjusted measured data, see Tables 2.4a and 2.4b

PM Monitoring Adjustment

All TEOM data reported in this report is ratified and validated by (Environmental Research Group) ERG, Kings College, London and included in the London Air Quality Monitoring Network. ERG ratifies TEOM data using the 1.3 conversion factor.

Results taken from the londonair.org.uk website are supplied already modified.

Short-term to Long-term Data adjustment

Not applicable as none carried out.

QA/QC of automatic monitoring

As mentioned previously, all automatic monitoring data is validated and ratified by the Environmental Research Group (ERG). Fortnightly calibrations are carried out by the LSO.

QA/QC of diffusion tube monitoring

Co-ordination of a quality assurance/quality control (QA/QC) framework, aimed at the analytical laboratories that supply and analyse the diffusion tubes currently comprises

- Promotion of the independent Workplace Analysis Scheme for Proficiency (WASP), operated by the Health and Safety Laboratory, with yearly assessment against agreed performance criteria.
- Operation of a field intercomparison exercise, in which diffusion tubes are co-located with an automatic analyser: from January 2006 this is at a roadside site.
- Operation of a QC solution testing scheme. Participation is recommended for any laboratory that prepares or analyses NO₂ diffusion tubes used by Local Authorities for LAQM purposes.

Quarterly summaries of participating laboratories' performance in the WASP scheme over the preceding 12 months, prepared by AEA, are available by clicking on the links below:

<http://www.laqmsupport.org.uk/no2qaqc.php>