



Air Quality and Action Plan Progress Report for the Tower Hamlets Council

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Executive Summary

This is the Air Quality and Action Plan Progress Report 2007 for the London Borough of Tower Hamlets ("the Council"). This report fulfils this part of the Council's commitment to the continuing Local Air Quality Management (LAQM) process. This Report provides an annual update of recent air quality issues in Tower Hamlets, including an update on recent air quality in the Borough, obtained from its monitoring results as well as a focus on the Council's progress on reducing air pollution through its Air Quality Action Plan.

The Council's earlier Review and Assessments of air quality confirmed that there were locations across the Borough with relevant public exposure where the Government's air quality objectives might be exceeded.

The more up to date monitoring of nitrogen dioxide and PM₁₀ in this report confirms that the Government's air quality objectives are still being exceeded widely at locations with relevant public exposure. The Council will therefore maintain its AQMA for these two pollutants.

The Council's monitoring results for carbon monoxide, benzene and sulphur dioxide however indicate that the objectives for these pollutants are not being exceeded. The report also includes a section on the Council's ozone and PM_{2.5} monitoring. The monitored results confirm that the ozone objective has also been exceeded in the Borough.

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1 Introduction to Air Quality and Action Plan Progress Report

1.1 Overview

This is the Air Quality and Action Plan Progress Report 2007 for the London Borough of Tower Hamlets. This report fulfils this part of the Council's continuing commitment towards the Local Air Quality Management (LAQM) process.

1.2 Background

The LAQM process forms a key part of the Government's Air Quality Strategy to achieve the air quality objectives prescribed in the Air Quality (England) Regulations 2000 and 2002. Air quality progress reports were introduced following a detailed evaluation of the first round of local authority Review and Assessment. This evaluation identified a need both to develop a longer-term vision for LAQM and encourage the integration of air quality into the routine work of local authorities.

Local Authorities are required by section 88 (2) of the Environment Act 1995 to have regard to the government's guidance documents when carrying out their LAQM duties. To assist local authorities and provide guidance for the overall LAQM process, the Department for Environment, Food and Rural Affairs (DEFRA) issued the following policy and technical guidance documents: LAQM PG (03), LAQM PG (S) (03), LAQM TG (03) and LAQM.PGA (05).

LAQM PRG (03) supplemented the above guidance and assists in the production of air quality progress reports. Based on this, local authorities are required to produce Progress Reports in those years when they are not carrying out an Updating and Screening Assessment (USA) or a Detailed Assessment of air quality.

As part of its earlier duties the Council completed its Second USA of the seven LAQM pollutants in 2006. The conclusion of that work was that the Council did not need to undertake a Detailed Assessment and should maintain its AQMA.

In earlier rounds of review and assessment (R&A) of local air quality management, the Council identified areas where objectives were exceeded and where there was relevant public exposure. As a consequence, it designated its area an Air Quality Management Area (AQMA) for the annual mean nitrogen dioxide objective and daily mean PM₁₀ objective and produced an Action Plan.

The guidance also advises that the Progress Report is not designed to represent a further USA, although it states that, if at any time a risk is identified that an air quality objective might be exceeded, a Detailed Assessment should be carried out without delay.

The overall aim of the Progress report is to report on progress on implementing LAQM and report progress in achieving, or maintaining concentrations below the air quality objectives. The guidance considers that these aims can be best achieved by reporting on new results and on progress with implementation of the Action Plan.

The guidance further suggests that those local authorities monitoring ozone use this report to outline the results. (Note – ozone is not one of the identified seven LAQM pollutants, although it is included within the Government's Air Quality Strategy).

2 New monitoring results in the LB of Tower Hamlets

2.1 Outline of monitoring undertaken

The Council continued monitoring 1,3 butadiene, benzene, carbon monoxide (CO), nitrogen dioxide (NO₂), sulphur dioxide (SO₂), particles (PM_{2.5} and PM₁₀) and ozone in its area.

The Government's adopted air quality objectives for each of these pollutants as shown in Table 1 below.

Table 1 Air quality strategy objectives for 1,3 butadiene, benzene, CO, NO₂, SO₂, PM₁₀ and ozone

Pollutant	Objective		Date to be achieved by
	Concentration	Measured as	
1, 3 Butadiene	2.25 µg m ⁻³	Running Annual Mean	31 Dec 2003
Benzene	16.25 µg m ⁻³	Running Annual Mean	31 Dec 2003
	5 µg m ⁻³	Annual Mean	31 Dec 2010
Carbon Monoxide	10 mg m ⁻³	Daily Maximum Running 8 hour mean	31 Dec 2003
Nitrogen Dioxide	200 µg m ⁻³ not to be exceeded more than 18 times a year	1 hour mean	31 Dec 2005
	40 µg m ⁻³	Annual Mean	31 Dec 2005
Sulphur Dioxide (SO₂)	350 µg m ⁻³ not to be exceeded more than 24 times a year	1 hour mean	31 Dec 2004
	125 µg m ⁻³ not to be exceeded more than 3 times a year	24 hour mean	31 Dec 2004
	266 µg m ⁻³ not to be exceeded more than 35 times a year	15 minute mean	31 Dec 2005
Particles (PM₁₀)	50 µg m ⁻³ not to be exceeded more than 35 times a year	Daily Mean	31 Dec 2003
	40 µg m ⁻³	Annual Mean	31 Dec 2004
Ozone (O₃)	100 µg m ⁻³ not to be exceeded more than 10 times a year	Daily maximum of 8 hour running mean	31 Dec 2005

Note – PM_{2.5} was also monitored at one site. This pollutant was included in the revision of the Government's Air Quality Strategy in July 2007 and a reduction exposure approach was adopted; based on an objective of 25 µg m⁻³ as an annual mean to be achieved by 2010 and a target reduction of 15% in concentrations at urban background locations between 2010 and 2020.

The Council undertakes continuous monitoring at four fixed long-term sites in the Borough:

- Tower Hamlets 1 - an urban background site in Poplar towards the southeast of the Borough. (This site has been operating since January 1994).
- Tower Hamlets 2 - a roadside site on Mile End Road in Tower Hamlets in the centre of the Borough (this site started operating since March 1994). The sample inlet is located 4.2m from the road. This site is part of the government's AURN.
- Tower Hamlets 3 – an urban background site in Bethnal Green near the centre of the Borough (monitoring at this site commenced in October 1999).
- Tower Hamlets 4 - a roadside site close to the Blackwall Tunnel northern approach at the A12 Abbott Street junction on the eastern edge of the Borough. (This site has been operating since September 2006). The sample inlet is located 4m from the road.

The above sites are also representative of relevant exposure. All the sites are part of the London Air Quality Network and therefore the standards of QA/QC are similar to those of the government's AURN sites. Regular calibrations are carried out, with subsequent data ratification undertaken by the ERG at King's College London. In all cases the data are fully ratified unless reported otherwise. Details of the sites can be found at www.londonair.org.uk

The Council also undertakes non-continuous monitoring at numerous sites across its area.

2.2 1, 3 Butadiene

The Council undertook monitoring of 1, 3 butadiene using a continuous analyser at its roadside Tower Hamlets 2 site on the Mile End Road. The annual mean results for the sites over the period 2002 to 2006 inclusive are given in Table 3.

There was variable data capture at the site over this period due to instrumentation problems. The results however indicated that the 2003 AQS objective was easily met during the period of monitoring. The results also indicate a reduction in concentrations over time as a result of the continuing uptake of catalytic converters in petrol vehicles.

Table 2 1, 3 Butadiene monitoring (µg m⁻³) in the LB of Tower Hamlets (2002 to 2006)

	2002	2003	2004	2005	2006
Annual mean (µg m ⁻³)	0.82	0.48	0.43	0.29	0.23
Data capture (%)	36	42	88	81	83

2.3 Benzene Monitoring

The Council also monitored benzene using a continuous analyser at its roadside Tower Hamlets 2 site on the Mile End Road. The annual mean results for the sites over the period 2002 to 2006 inclusive are given in Table 3.

There was variable data capture at the site over this period due to instrumentation problems. The results however indicated that the 2003 AQS objective was not exceeded during the period of monitoring. The benzene monitoring also confirmed that the stricter 2010 annual mean objective (of $5 \mu\text{g m}^{-3}$) was also not exceeded.

The situation in Tower Hamlets reflects the national picture, in that concentrations of benzene have been decreasing over time as a result of stricter emission controls, particularly with regard to road transport sources.

Table 3 Benzene monitoring ($\mu\text{g m}^{-3}$) in the LB of Tower Hamlets (2002 to 2006)

	2002	2003	2004	2005	2006
Annual mean ($\mu\text{g m}^{-3}$)	4.48	2.97	2.23	1.93	1.95
Data capture (%)	38	39	77	79	81

2.4 Carbon monoxide monitoring

The continuous monitoring of CO was undertaken at the Tower Hamlets 2 roadside site on the Mile End Road. The monitoring results from 2002 to 2006 indicated that there were no periods that exceeded the CO objective (i.e. a maximum daily mean of 10 mg m^{-3}).

The data capture for all years exceeded 80% at the TH2 site (see Appendix 1). At roadsides nationally concentrations decreased over time as a result of stricter emission controls on road vehicles and levels are approaching those observed at background sites.

Table 4 CO monitoring (mg m^{-3}) in Tower Hamlets (2002 to 2006 inclusive)

TH2	2002	2003	2004	2005	2006
Max 8 Hour	3.6	2.4	1.9	7.5	1.5

2.5 Nitrogen dioxide monitoring

The Council monitored NO_2 in its area using both continuous chemiluminescence analysers and diffusion tubes.

2.5.1 Continuous NO_2 and NO_x monitoring in LB of Tower Hamlets

The annual mean results for the continuous sites are presented in Table 5 and Figure 1. The data capture exceeded 90% for all years (see Appendix 1), other than during 2006 at Tower Hamlets 1 (85%) and 4 (23%), at Tower Hamlets 3 in 2004 (63%) and 2005 (71%). In all cases the data are fully ratified.

Table 5 Annual mean NO_2 concentrations for the LB of Tower Hamlets (2002 – 2006 inclusive) ($\mu\text{g m}^{-3}$)

LAQN site	2002	2003	2004	2005	2006
Tower Hamlets 1 (urban)	40	42	35	38	<i>40</i>
Tower Hamlets 2 (roadside)	61	67	60	61	61
Tower Hamlets 3 (urban)	43	44	43	47	50
Tower Hamlets 4 (roadside)					<i>72</i>

(Note - italics indicates < 90% data capture; bold indicates > hourly mean objective)

The monitoring results for the long-term sites have consistently been above the annual mean objective, for all years at all sites, other than the urban background site in Poplar (TH1), although for the years reported this site has exceeded the objective for more years than not.

Figure 1 highlights inter annual variability for the sites arising as a result of the varying meteorological conditions, as well as changes in the release of atmospheric emissions. The results confirm that the annual mean objective continues to be exceeded close to roads where there is relevant exposure in the Borough and also at the two background sites.

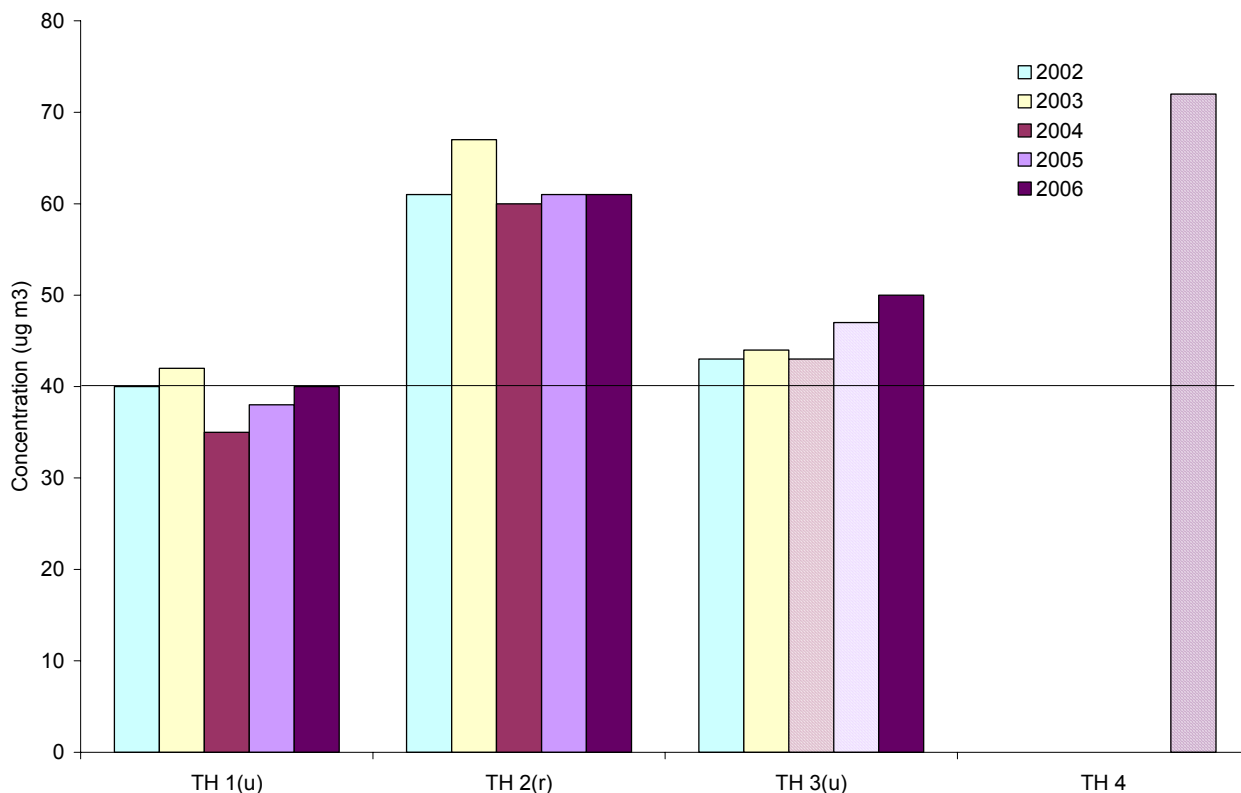


Figure 1 Annual mean NO₂ concentrations in the LB of Tower Hamlets (2002 – 2006)

The Tower Hamlets 2 roadside site close to the Mile End Road was the only site to exceed the government's hourly standard of not more than 200 $\mu\text{g m}^{-3}$, although the hourly objective of more than 18 such periods was not exceeded (see Table 6). The site recorded between 1 and 6 periods for the years reported. Six periods were monitored in both 2003 and 2006.

Elsewhere in London there was an increase in the number of sites exceeding this objective post 2002, prior to this there was only one London site that exceeded the objective (Fuller G. and Green D., 2006). This rise may be linked to rises in direct emissions of NO₂ as indicated by recent research (Carslaw D.C and Beevers, S. D, 2005).

Table 6 Hourly mean NO₂ periods > 200µg m⁻³ for the LB of Tower Hamlets (2002 – 2006 inclusive)

LAQN site	2002	2003	2004	2005	2006*
Tower Hamlets 1 (urban)	0	0	0	0	0
Tower Hamlets 2 (roadside)	2	6	3	1	6
Tower Hamlets 3 (urban)	0	0	0	0	0
Tower Hamlets 4 (roadside)					0

(Note - italics indicates < 90% data capture; bold indicates > hourly mean objective)

2.5.2 NO₂ and NO_x trends in the LB of Tower Hamlets

Rolling annual mean plots can be used to indicate changing annual concentrations over time. The use of rolling annual mean concentrations, based on averaged hourly means, largely removes seasonal influences and provides a guide to changing trends. NO₂ is a mainly secondary pollutant formed by chemical reactions in atmosphere from NO_x emissions produced by combustion sources. These reactions also involve ozone, which is scavenged by NO. The relationship between NO_x and NO₂ is non linear and it is also further complicated by changes in direct emissions of NO₂ from some road vehicles.

The rolling annual mean plots of both NO_x and NO₂ concentrations of the LB of Tower Hamlets sites are shown in Figure 2 and Figure 3. This analysis is for the period from 1995 through to the end of 2006.

The rolling annual mean concentrations of NO_x indicate a steady downward trend at the Tower Hamlets 1 urban background site over time in line with reductions in emissions. The reduction of NO_x as the primary emission was from approximately 140 µg m⁻³ to 60 µg m⁻³ over the period from 1995 to 2006. However since 2000 there has been very little reduction in concentrations (from around 66 µg m⁻³ to 60 µg m⁻³).

The Tower Hamlets 3 urban background site showed a similar change in concentrations to that of the Tower Hamlets 1 site for the period following opening to 2004, i.e. a very slight reduction in concentrations of approximately 6 µg m⁻³. Following this period there were instrument problems resulting in a loss of some data. The most recent rolling annual average results since the interruption in the dataset indicates an increase in concentrations. This may be due to the effects of varying meteorology, or local changes in traffic levels and increased emissions, although this may change as the dataset builds again.

For the Tower Hamlets 2 roadside site, concentrations of NO_x were much higher than those at the background sites (Tower Hamlets 1 and 3). The Tower Hamlets 2 roadside site shows a greater reduction of NO_x over a similar period of site operation. In this instance the reduction is almost constant from approximately 320 µg m⁻³ to 145 µg m⁻³, apart from the period since mid 2005, where concentrations have remained roughly the same.

Note – the rolling annual mean for the Tower Hamlets 4 site are not included due to the site opening in late 2006.

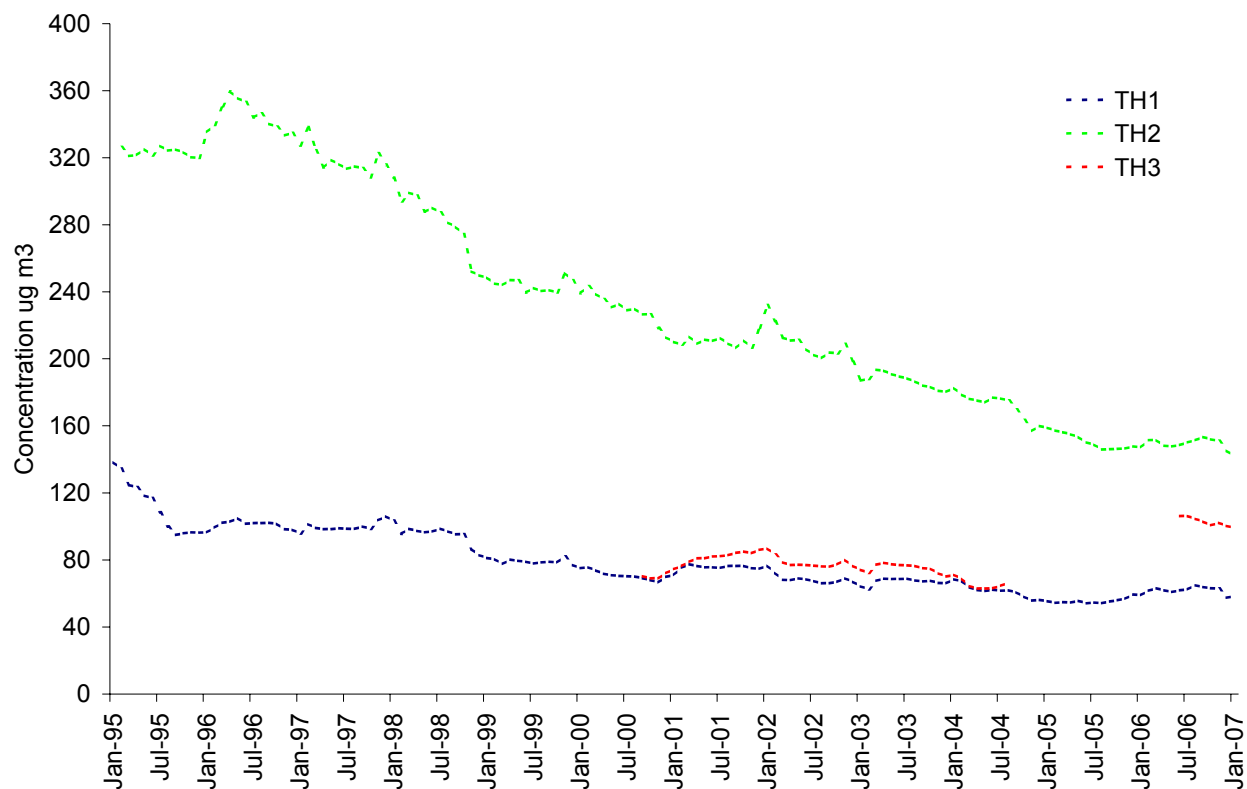


Figure 2 Rolling annual mean NO_x concentrations for continuous monitoring sites in LB of Tower Hamlets

The rolling annual mean plots of NO₂ concentrations of the Tower Hamlets sites are shown in Figure 3. This analysis is also for the period from 1995 through to the end of 2006.

The changes in rolling annual mean concentrations of NO₂ are, as expected for the secondary pollutant less than for NO_x as the main primary pollutant. The rolling annual mean concentrations of NO₂ largely indicate a downward trend at the Tower Hamlets 1 urban background site over time. The reduction of NO₂ was approximately 15 µg m⁻³, from around 55 µg m⁻³ in 1995 to approximately 40 µg m⁻³ in 2004. Since that time concentrations reduced to below 40 µg m⁻³ and more recently increased slightly again.

The Tower Hamlets 2 roadside site concentrations are all greater than the objective for all of the period shown. Concentrations fluctuated each year over this period, due to seasonal influences. Concentrations also reduced from around 75 µg m⁻³ to approximately 62 µg m⁻³ in 2006.

Similarly concentrations at the Tower Hamlets 3 urban background site were also greater than the objective for all of the period shown. Concentrations increased following opening in 2001 before falling in 2004, with concentrations slightly more than those at Tower Hamlets 1. As with the NO_x results above there were data missing for a period from 2004 and following this period concentrations have increased again.

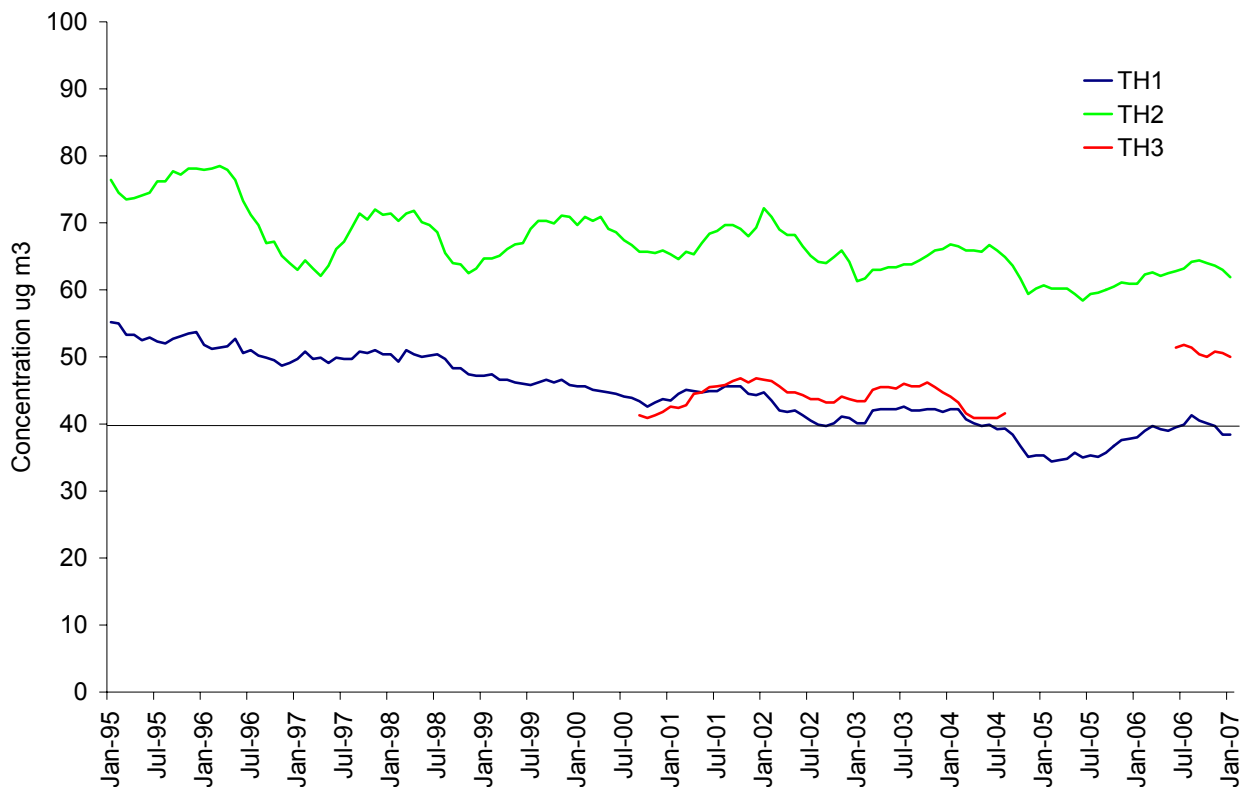


Figure 3 Rolling annual mean NO₂ concentrations for continuous monitoring sites in LB of Tower Hamlets

This figure illustrates the difficulty in reducing NO₂ concentrations, which is mostly a secondary pollutant that is largely determined by the oxidising capacity of the atmosphere. The effect of the increased direct NO₂ emissions is also more pronounced at the roadside site and consequently the reduction is less. The average change in rolling annual mean concentrations of NO₂ over this period is in line with the average for other London sites operating over this length of time (ERG, 2006). These graphs however indicate that the annual mean objective is likely to continue to be exceeded into the near future at roadsides and background locations in the Borough unless actions to reduce emissions continue.

2.5.3 Diffusion tube monitoring of NO₂ in LB of Tower Hamlets

The Council also undertook monitoring using diffusion tubes across the Borough. The diffusion tubes were exposed at roadside and background sites. The Council re-arranged the diffusion tube monitoring sites during 2004, and the results for these sites since 2005 are reported here. The site locations are all considered to represent relevant public exposure.

The diffusion tubes used were supplied by Casella CRE using a preparation method of 10% TEA in water. Details of the sites monitored are given in Appendix 1. The location of the tubes is also shown in Figure 4.

The biased results of diffusion tube monitoring for 2005 and 2006 are shown in Figure 5 and Figure 6 (for the roadside sites) and Figure 7 (for the background sites). (The unbiased results for both years of the diffusion tube monitoring monitored in the Borough, along with the details of the site location and reference number are given in Appendix 1.

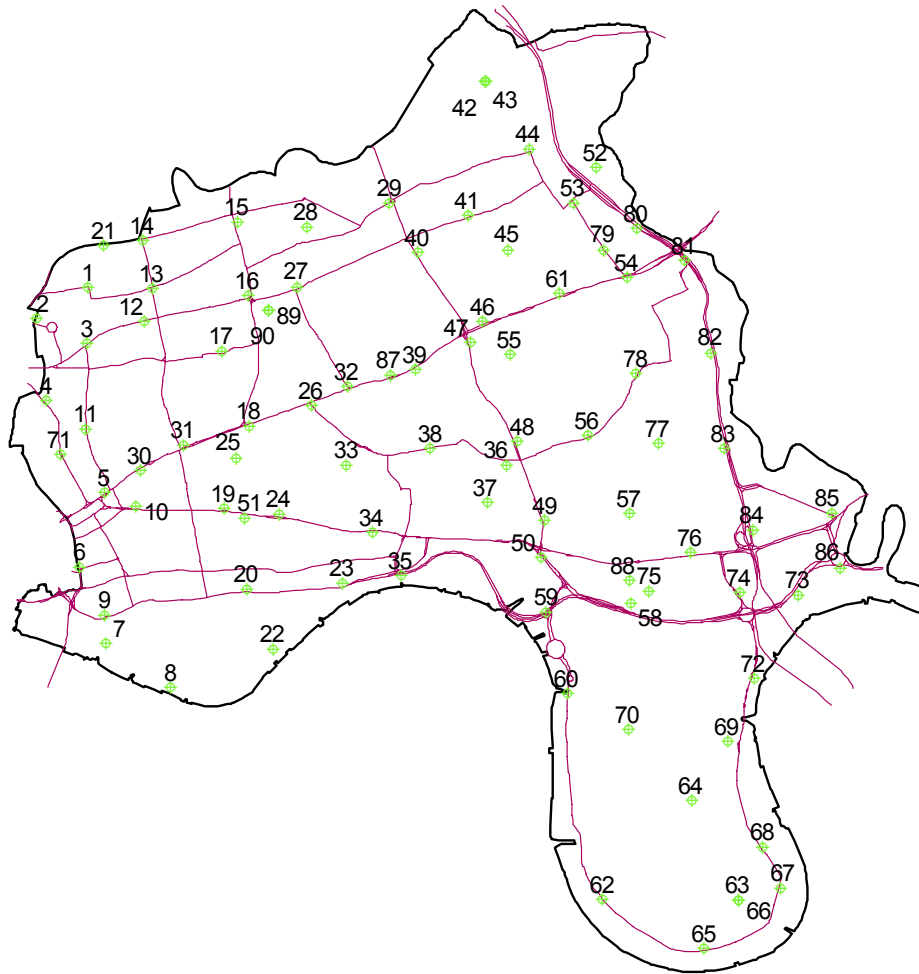


Figure 4 Locations of diffusion tube sites in LB Tower Hamlets

Since 2005 local co-location studies were undertaken in the Borough at the Council's continuous sites. These factors are compared to the default factors produced on behalf of DEFRA and are shown in Table 7. The co-location study at the Tower Hamlets 3 background site was undertaken in duplicate, whereas single tubes were used at the Tower Hamlets 2 (roadside) and Tower Hamlets 1 (background) sites. The bias factors and their source are as follows:

Table 7 Local and Default NO₂ diffusion tube bias factors

Year	Local Bias factor	Default Bias factor
2005	1.18 (mean TH3)	0.8
	0.94 (TH2)	
	1.08 (TH1)	
2006	1.12 (mean TH3)	0.87
	0.99 (TH2)	
	1.08 (TH1)	

The default bias factors indicate that the diffusion tube results over read in comparison with continuous monitoring in both 2005 and 2006. The local bias factors however indicated good agreement between continuous and diffusion tube measurements at the roadside site (TH2) for both years, with a very small over read of diffusion tube measurements. For the background sites (TH1 and TH3) there was a consistent under read between years compared to the continuous monitoring. In the Council's 2006 Updating and Screening Assessment, the DEFRA default factor was used and to maintain consistency with that report the default values were used below. The default bias factors for both years were also based on triplicate studies of more than 10 sites (including roadside sites). Figure 5 shows the bias adjusted results for roadside sites (numbers from 1 to 41). (Sites with less than 75% data capture are shown hatched.)

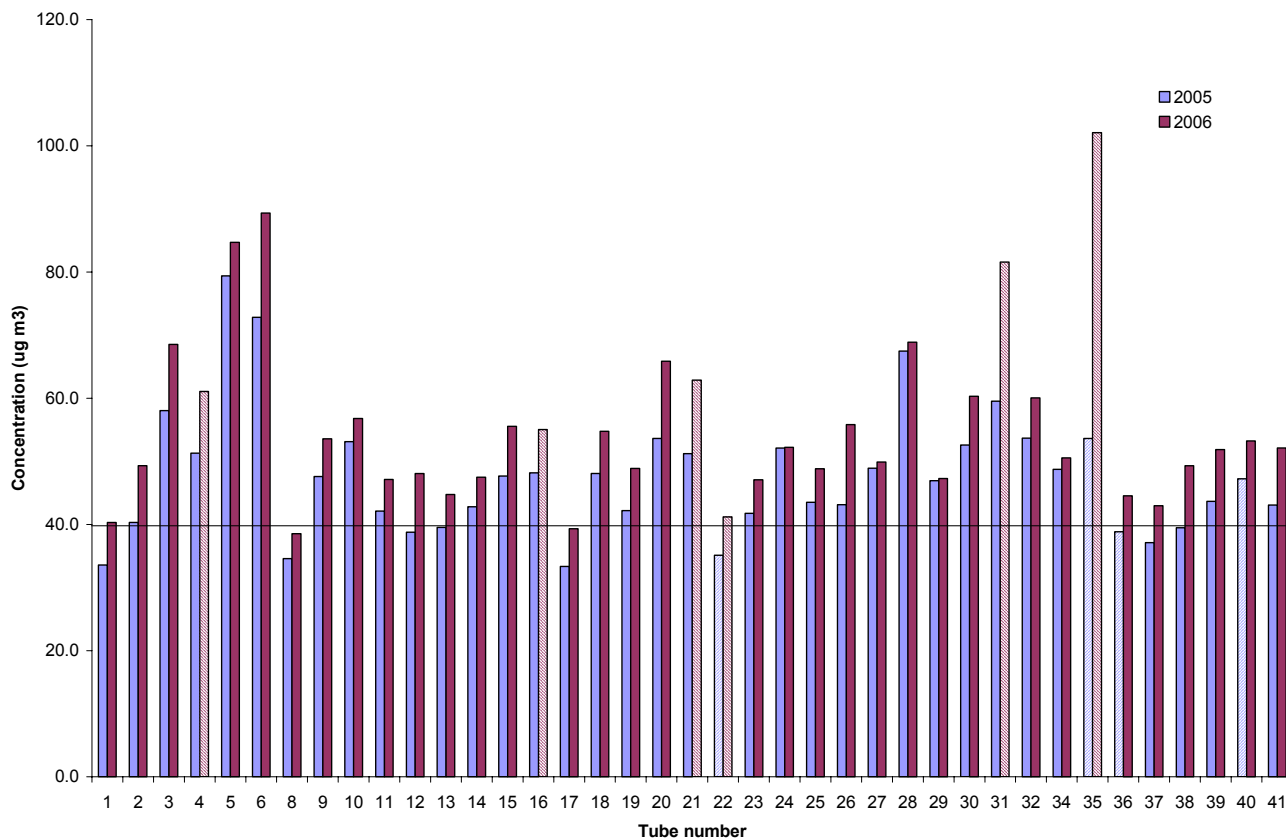


Figure 5 2005/6 NO₂ diffusion tube results for roadside sites (sites 1 to 41) in LB of Tower Hamlets

The bias adjusted results for roadside sites (from 42 to 86) are shown in Figure 6.

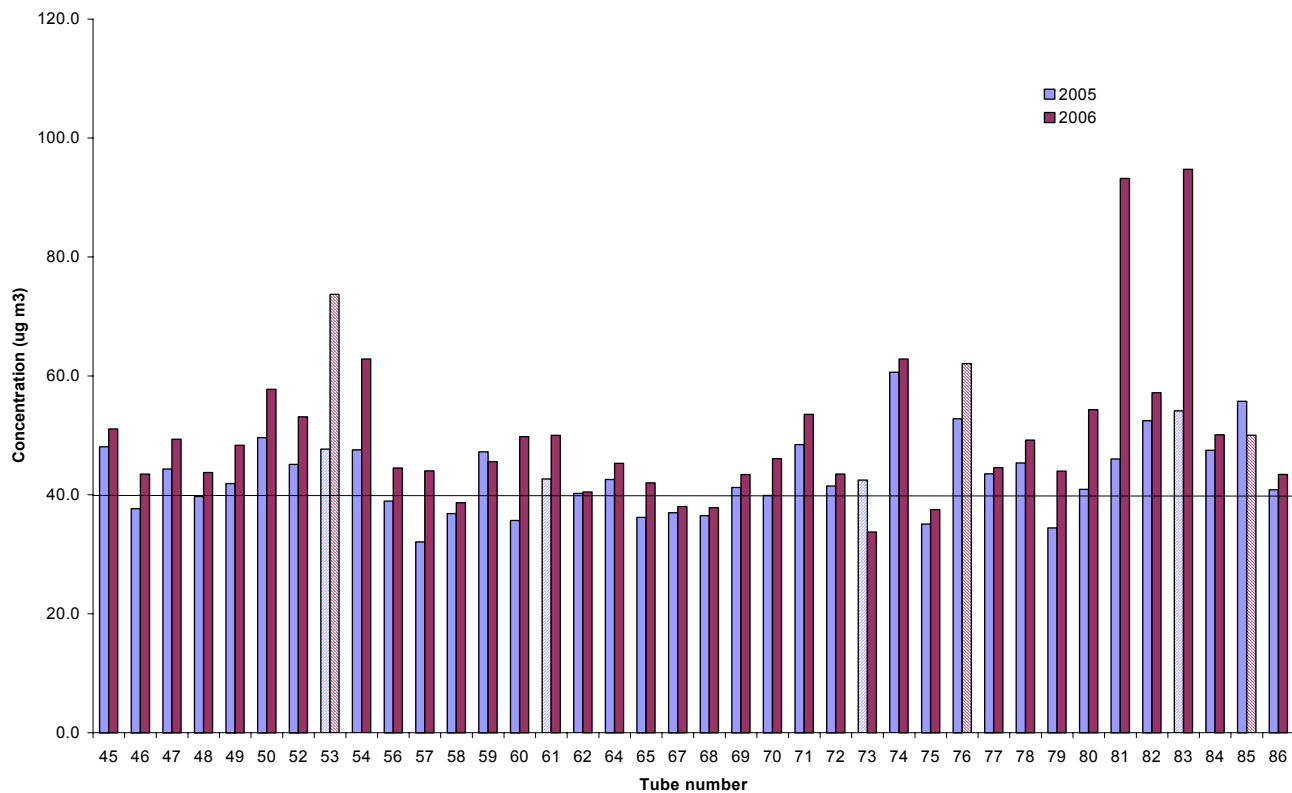


Figure 6 2005/6 NO₂ diffusion tube results for roadside sites (from 42 to 86) in LB of Tower Hamlets

The bias adjusted measurements for the Tower Hamlets roadside sites (using the DEFRA default value) indicated that all sites (apart from 8, 17, 58, 67, 68 and 75)) exceeded the 40 $\mu\text{g m}^{-3}$ standard for one or either years reported. Of these sites, three were located close to riverside areas within the Borough. The other two were located in Poplar.

Consistently high concentrations for both years arose at sites 5 and 6. These sites were located in the west of the Borough closest to the centre of London. Very high concentrations (approximately 100 $\mu\text{g m}^{-3}$) for 2006 also arose at sites 81 and 83; these sites were both located close to the A102. In general the concentrations measured in 2006 at the majority of roadside sites exceeded those of 2005.

The bias adjusted results for background sites are shown in Figure 7.

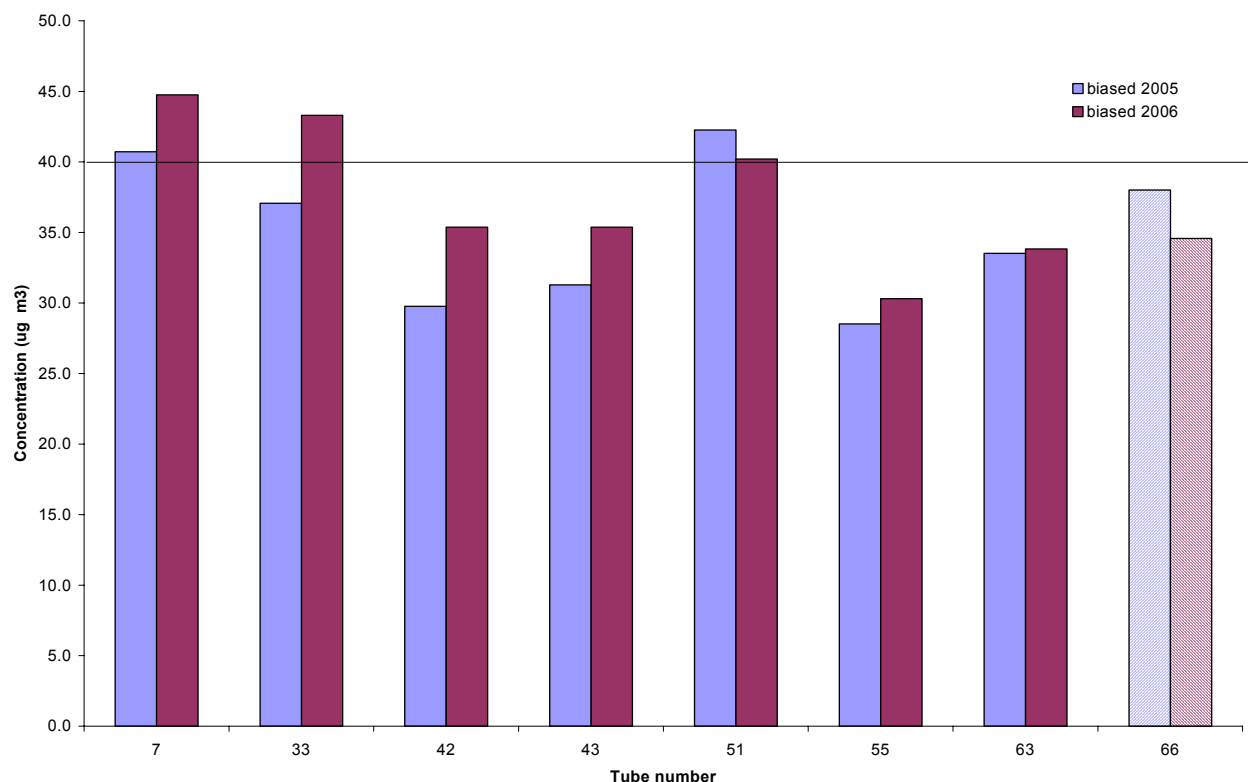


Figure 7 2005/6 NO₂ diffusion tube results for background sites in LB of Tower Hamlets

The bias adjusted measurements for the Tower Hamlets background sites (using the DEFRA default value) indicated that sites 7, 33 and 51 exceeded the 40 µg m⁻³ standard for one or either years reported. These sites are located mostly close to the western side of the Borough.

Sites 42, 43 55 and 63 were all less than the objective for both years. As identified for roadside sites, concentrations for 2006 at the majority of background sites exceeded those of 2005. This is consistent with the results for the continuous sites.

The bias adjusted results for 2006 are shown in Table 8 for those sites with greater than 75% data capture. These include both the default and local bias adjusted measurements. Use of the local bias factors resulted in higher concentrations at all sites and with these factors for 2006 only two sites met the objective (i.e. one roadside and one background site). The estimated 2010 concentrations based on the 2006 local bias adjusted results are also shown in the table.

Table 8 Bias adjusted results for all Tower Hamlets site 2005/ 2006 (µg m⁻³)

Site	Site type	Default bias 2006	Local bias 2006	Estimated 2010
7	Background	44.8	57.6	51.6
33	Background	43.3	55.7	49.9
42	Background	35.4	45.5	40.8
43	Background	35.4	45.5	40.8
51	Background	40.2	51.8	46.4
55	Background	30.3	39.0	34.9

63	Background	33.8	43.5	39.0
1	Roadside	40.3	46.1	39.9
2	Roadside	49.3	56.4	48.8
3	Roadside	68.5	78.3	67.8
5	Roadside	84.7	96.8	83.8
6	Roadside	89.3	102.1	88.4
8	Roadside	38.5	44.0	38.1
9	Roadside	53.5	61.2	53.0
10	Roadside	56.8	64.9	56.2
11	Roadside	47.1	53.9	46.6
12	Roadside	48.1	54.9	47.6
13	Roadside	44.7	51.1	44.3
14	Roadside	47.5	54.3	47.0
15	Roadside	55.5	63.5	55.0
17	Roadside	39.3	44.9	38.9
18	Roadside	54.7	62.6	54.2
19	Roadside	48.9	55.9	48.4
20	Roadside	65.8	75.3	65.2
23	Roadside	47.1	53.8	46.6
24	Roadside	52.2	59.7	51.7
25	Roadside	48.8	55.8	48.3
26	Roadside	55.8	63.8	55.3
27	Roadside	49.9	57.0	49.4
28	Roadside	68.9	78.8	68.2
29	Roadside	47.3	54.0	46.8
30	Roadside	60.3	68.9	59.7
32	Roadside	60.0	68.6	59.4
34	Roadside	50.5	57.8	50.0
36	Roadside	44.5	50.9	44.1
37	Roadside	42.9	49.1	42.5
38	Roadside	49.3	56.4	48.8
39	Roadside	51.8	59.3	51.3
40	Roadside	53.2	60.8	52.7
41	Roadside	52.1	59.6	51.6
44	Roadside	52.9	60.5	52.4
45	Roadside	51.1	58.4	50.6
46	Roadside	43.5	49.7	43.1
47	Roadside	49.4	56.4	48.9
48	Roadside	43.8	50.1	43.3
49	Roadside	48.4	55.3	47.9
50	Roadside	57.8	66.1	57.2
52	Roadside	53.1	60.8	52.6
54	Roadside	62.9	71.9	62.2
56	Roadside	44.5	50.9	44.1
57	Roadside	44.1	50.4	43.6
58	Roadside	38.7	44.3	38.3
59	Roadside	45.6	52.1	45.1
60	Roadside	49.8	56.9	49.3
61	Roadside	50.0	57.2	49.5
62	Roadside	40.5	46.3	40.1

64	Roadside	45.3	51.8	44.8
65	Roadside	42.1	48.1	41.6
67	Roadside	38.0	43.5	37.7
68	Roadside	37.8	43.3	37.5
69	Roadside	43.4	49.6	43.0
70	Roadside	46.1	52.7	45.6
71	Roadside	53.5	61.2	53.0
72	Roadside	43.5	49.7	43.1
73	Roadside	33.8	38.6	33.4
74	Roadside	62.9	71.9	62.2
75	Roadside	37.6	42.9	37.2
77	Roadside	44.6	51.0	44.1
78	Roadside	49.2	56.3	48.7
79	Roadside	44.0	50.3	43.6
80	Roadside	54.3	62.1	53.8
81	Roadside	93.2	106.6	92.3
82	Roadside	57.2	65.4	56.6
83	Roadside	94.8	108.3	93.8
84	Roadside	50.1	57.3	49.6
86	Roadside	43.4	49.6	43.0
87	Roadside	53.4	61.0	52.8

The predictions of concentrations in 2010 were made using the DEFRA year adjustment factors. These estimates indicate that despite the predicted reduction in emissions, most of the roadside locations will still exceed the objective in the Borough, although seven further sites are estimated to meet the objective (sites 1, 8, 17, 58, 67, 68 and 75). One further background site will also meet the objective (site 63), with two others just exceeding the objective by less than $1 \mu\text{g m}^{-3}$ (sites 42 and 43).

2.6 PM₁₀ monitoring

The Council undertook the continuous monitoring of PM₁₀ at three of its continuous sites. These included the two sites at background locations (Tower Hamlets 1 and 3) and the new Tower Hamlets 4 roadside site, which opened in late 2006. The Council used TEOM instruments for monitoring PM₁₀ at the two urban background sites; the results are therefore presented as a gravimetric equivalent, i.e. times 1.3 (in accordance with TG03 guidance). At the roadside Tower Hamlets 4 site the Council monitored PM₁₀ using a FDMS (Filter Dynamics Measurement System) TEOM. This is a relatively new automatic monitoring technique that will improve understanding of PM₁₀. It has also proved equivalent to the reference method for PM₁₀ (and PM_{2.5}) and therefore the results were not factored.

The monitoring results for the sites are given in Table 9. Full details of data capture are given in Appendix 1.

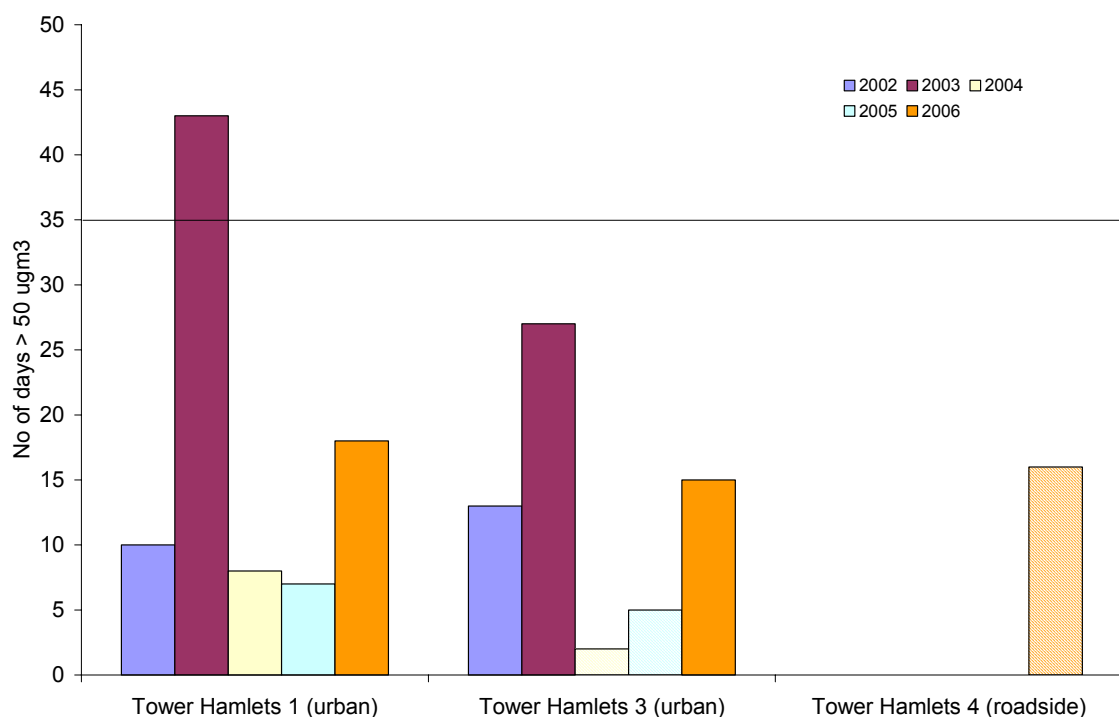
Table 9 PM₁₀ monitoring at the long-term LB of Tower Hamlets sites (2002 - 2006)

Site		2002	2003	2004	2005	2006
Tower Hamlets 1 (urban)	No. of days	10	43	8	7	18
Tower Hamlets 3 (urban)		13	27	2	5	15
Tower Hamlets 4 (roadside)						16
Tower Hamlets 1 (urban)	Annual mean	25	31	25	24	26
Tower Hamlets 3 (urban)		26	29	25	25	26
Tower Hamlets 4 (roadside)						34

(Note - italics indicates < 90% data capture)

The results for each year of monitoring confirm that there were days when the daily mean standard of 50 µg m⁻³ was exceeded, although the 2004 daily mean objective was only exceeded at one site (Tower Hamlets 1) during 2003. The Tower Hamlets 4 roadside site also recorded 16 days above the standard in 2006 despite only 23% data capture for the year. This suggests that the objective may have been further approached with greater data capture. The results are also shown in Figure 8 and Figure 9.

The 2004 annual mean objective was not exceeded at the Tower Hamlets sites. In line with other LAQN monitoring sites the highest annual mean concentrations arose during 2003, although concentrations in 2006 were also higher in the Borough. This is consistent with monitoring elsewhere across London where 28 sites had increased 2006 annual mean concentrations when compared to 2005 (Fuller G. and Green D., 2006).

**Figure 8** Number of days PM₁₀ greater than 50 µg m⁻³ at the LB of Tower Hamlets sites (2002 to 2006)

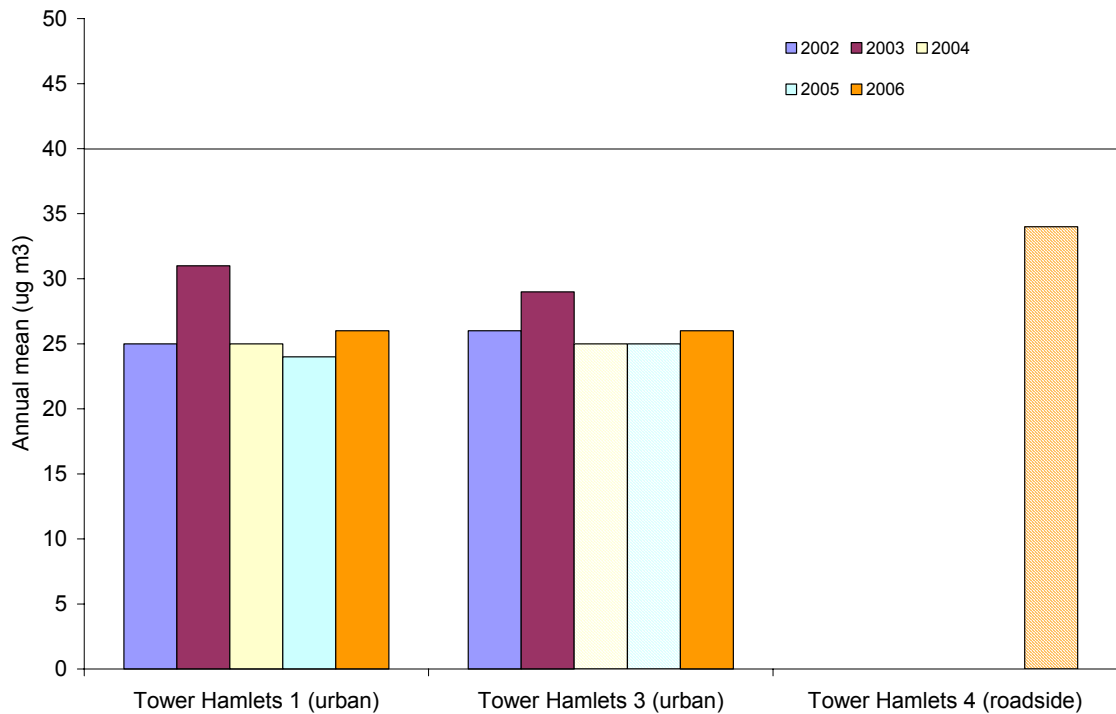


Figure 9 Annual mean PM₁₀ (µg m⁻³) at the LB of Tower Hamlets sites (2002 to 2006)

An analysis of rolling annual mean PM₁₀ concentrations and daily mean PM₁₀ exceedences is provided for the Tower Hamlets 1 and 3 monitoring sites to indicate possible trends over time (note – there is insufficient data from Tower Hamlets 4 to include this site). The analysis is for the period from the end of 1994 through to 2006. Figure 10 illustrates changing concentrations over time as rolling daily mean PM₁₀ exceedences and Figure 11 changing rolling annual mean PM₁₀ concentrations. The use of rolling data in this way largely removes seasonal influences and thus provides a guide to changing trends over time.

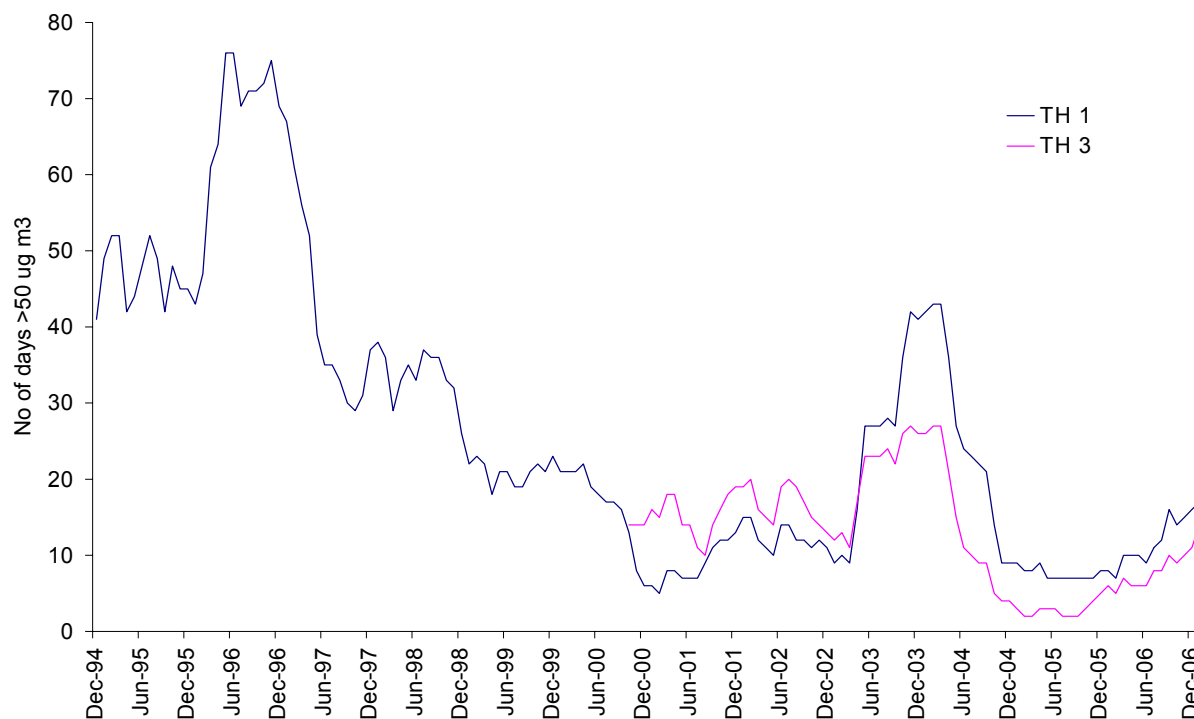


Figure 10 Rolling number of days $PM_{10} > 50 \mu g m^{-3}$ for Tower Hamlets monitoring sites (1994 to 2006)

The data for the Tower Hamlets 1 background site represented the longest period of measurement and there was a reduction in the number of days exceeding, from around 40 days in 1995 to the around 12 days at the end of 2006. This reduction was not even over this period as there were two notable years with episodes having high levels of particles, namely during 1996 and 2003. For both these years the number of days exceeding the standard rose to over 35 days. Concentrations from 2004 onwards however reduced to approximately 2002 levels, although there was a slight increase in the number of days exceeding during 2006.

The findings for the Tower Hamlets 1 site were similar to the averages based on all London sites for the period from 1995 to 2000, which show a downward trend from around 50 days above $50 \mu g m^{-3}$ to 10 days in 2002. By the end of 2004 the number of days exceeding the standard at background sites was comparable to that measured at the start of 2001, whereas inner London roadside sites had a higher number of days exceeding in 2004 than 2001 (ERG, 2006).

The datasets for the Tower Hamlets 3 site represented a shorter period than that for the Tower Hamlets 1 site. The Tower Hamlets 3 site is also located at the background and therefore concentrations were similar to those of the Tower Hamlets 1 site. As with Tower Hamlets 1 there was an increase in the number of days exceeding during 2003 and also towards the end of 2006 from 2004 / 2005 levels.

The rolling annual mean trends for the Tower Hamlets sites are shown in Figure 11.

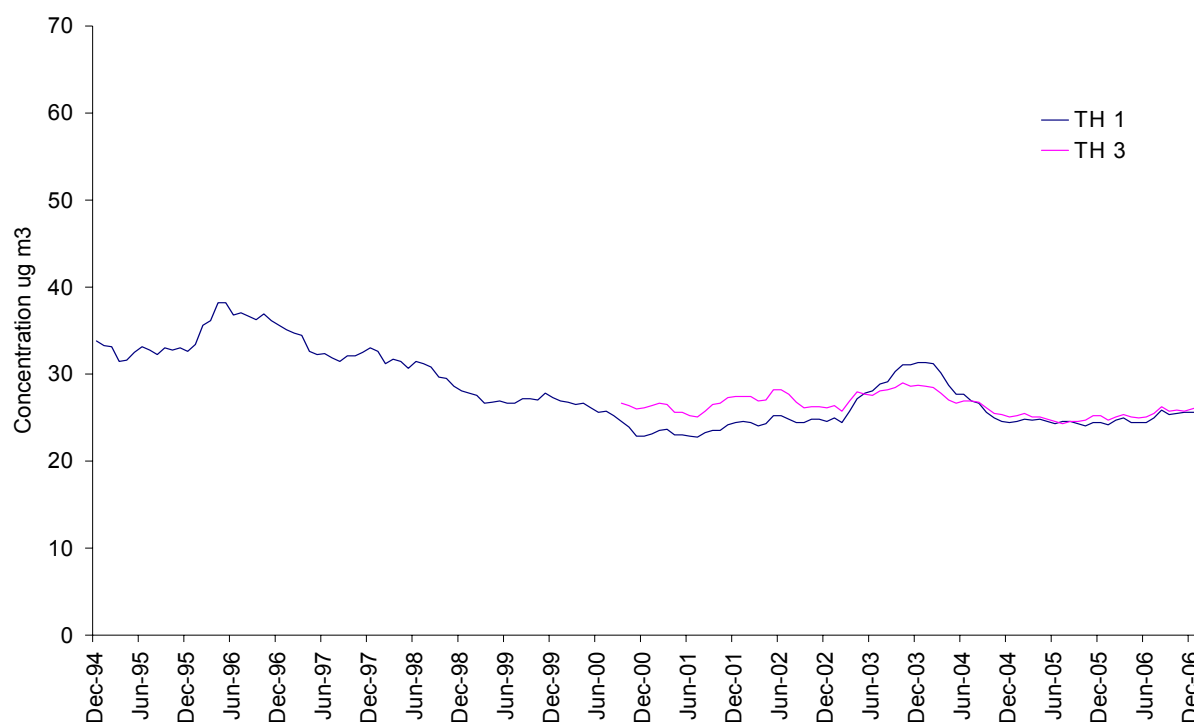


Figure 11 Rolling annual mean PM₁₀ trends for Tower Hamlets monitoring sites (1995 to 2006)

The rolling annual mean trends for the Tower Hamlets 1 site provided the longest dataset, although for the period when both sites were open (post 2000) there was a similar trend for the sites. Concentrations at the Tower Hamlets 3 were slightly higher (apart from the period from 2003 to 2004). This may be due to its location closer to the centre of London.

The use of trends in this way highlights that concentrations dropped until the year 2000, although since then there was a very slight increase. Post this period concentrations peaked as a result of the pollution incidents in 2003. However levels dropped to pre 2003 levels and did not appear to be reducing further; indeed for the Tower Hamlets sites overall there was a very slight increase, possibly as a result of increasing primary PM₁₀ emissions (ERG, 2006) rather than the predicted decrease in emissions.

A source apportionment study of annual mean concentrations of PM₁₀ in London was carried out by Fuller and Green (2006b). This analysis showed increases in the concentration of primary PM₁₀ in London between 1999 and 2003 and that it was highly likely that these increases were due to increases in road transport emissions. It was less clear however if these increases are due to increases in tail pipe or non-tail pipe emissions.

2.7 SO₂ monitoring

The Council undertakes SO₂ monitoring using a continuous analyser at its Tower Hamlets 1 and 3 urban background sites in Poplar and Bethnal Green. Details of data capture for the period 2002 to 2006 are given in Appendix 1. The results indicate that the 15-minute mean standard of 266 µg m⁻³ was not exceeded at the site over this period, although this standard was approached in 2005 at the Tower Hamlets 3 site. The maximum 15-minute mean for each year of monitoring is shown in Table 10.

Table 10 Maximum 15 minute mean concentrations of SO₂ monitoring (µg m⁻³) (2002-2006)

LAQN Site	2002	2003	2004	2005	2006
Tower Hamlets 1	146.9	207.7	179.9	148.8	161.8
Tower Hamlets 3	176.6	155.3	108.6	231.3	95.4

(Note - italics indicates < 90% data capture)

The 15-minute mean objective is the most stringent of the three SO₂ objectives; accordingly there were no recorded periods where the hourly and daily mean standards were exceeded.

The results confirm that the SO₂ objectives were met at the monitoring sites in the Borough.

2.8 Ozone monitoring

The Council has undertaken the continuous measurement of ozone at its Tower Hamlets 1 site in Poplar since 1994 and at the Tower Hamlets 4 roadside site near the Blackwall Tunnel since 2006.

The results for the period 2002 – 2006 are given in Table 11. The data capture for all years exceeded 90%; except 2006 for the Tower Hamlets 4 site. This site opened in September of that year. Full details for the site are given in Table 18 in Appendix 1.

Table 11 Number of daily maxima exceeding 100 µg m⁻³ based on 8-hour running mean (2002-2006)

LAQN Site	2002	2003	2004	2005	2006
Tower Hamlets 1	10	42	18	27	42

The Government's air quality objective, not to exceed 10 periods in a calendar year, was exceeded for all years in Tower Hamlets. The years 2003 and 2006 were most notable for having hot dry summers conducive to the formation of ozone; hence the much higher of periods during these particular years. In 2004 the weather was less conducive to the formation of ozone as was 2005.

2.9 PM_{2.5} monitoring

The Council started the continuous measurement of PM_{2.5} at its Tower Hamlets 4 site upon opening of the site in September 2006. The site uses a FDMS instrument. The annual mean result for the monitoring site is given in Table 12.

Table 12 PM_{2.5} annual mean concentration (µg m⁻³) at the Tower Hamlets 4 site

Site	2006
Tower Hamlets 4	19.2

(Note - italics indicates < 90% data capture)

It is recognised in recent reviews by WHO and the Committee on the Medical Effects of Air Pollutants (COMEAP) that suggested exposure to PM_{2.5} gives a stronger association with the observed ill-health effects of particles. It is also noted that there is evidence that the coarse fraction between (PM₁₀ – PM_{2.5}) also has some effects on health (DEFRA, 2007).

As a consequence a new objective has been included in the 2007 Air Quality Strategy. This is based on the health advice for PM_{2.5}, which shows that there is no accepted threshold effect, i.e. there is no recognised safe level for exposure to fine particles. As a result in its strategy, the government adopted an 'exposure reduction' approach for PM_{2.5} to seek a more efficient way of achieving further reductions in the health effects of air pollution. This is intended to provide a driver

to improve air quality everywhere in the UK rather than just in a small number of localised hotspot areas.

The exposure reduction approach is based on the principle that for a pollutant with a low or zero threshold for adverse effects, it will generally be more beneficial to public health, and potentially more cost-effective to reduce pollutant levels across the whole population of an urban area or region rather than in small areas or “hotspots”. The framework for delivering this approach contains two inseparable parts:

- Air quality objectives/limit values (often called the “backstop objective” or “concentration cap”) to ensure some basic level or quality of air which all citizens should experience, embodying the “environmental justice” concept
- An objective based on reducing average exposures across the most heavily populated areas of the country (often called “percentage reduction” or “exposure reduction” objective), to generate further cost effective public health improvements over and above the basic level of protection generated by the objective above.

While the percentage reduction objective is a relative measure of improvement (in this strategy, it is a 15 per cent reduction in average concentrations in urban background areas across the UK between 2010 and 2020), the backstop objective (or concentration cap) is designed to deliver a minimum level of protection applicable to all areas i.e. $25 \mu\text{g m}^{-3}$ as an annual mean.

As there is currently no agreed scaling factor for $\text{PM}_{2.5}$, the $\text{PM}_{2.5}$ data for the Tower Hamlet 4 site are reported without adjustment to a gravimetric equivalent (DEFRA, 2007).

Based on this proviso, the measured concentration indicates that the backstop objective was not exceeded.

3 New local developments

This section outlines those local developments that have taken place that may affect air quality. These are not for consideration now but are listed for a more thorough assessment during the next round of Review and Assessment. The guidance identifies the following developments that should be considered:

- New industrial processes included in the list of Appendix 2 of LAQM. TG 03.
- New developments with an impact on air quality, especially those that will significantly change traffic flows. Only include those developments with planning permission granted.
- New landfill sites, quarries, etc with planning permission granted and nearby relevant exposure.

Table 13 New Local Developments since 2006

Development	Location
New Part A or B industrial processes	See below
New retail or mixed residential/ commercial development	See below
New road scheme	None
New mineral or landfill development	None

3.1 New Part A/ B industrial processes

The Council has received permit applications for an additional 24 dry cleaning establishments and is currently processing these. There have been no new Part A2 or B installations open in the Borough, although several have closed. (Details of the Part B installations permitted by the Council are given in Table 22). There has also been no change to the Part A inorganic chemicals installation in the Borough.

3.2 Tower Hamlets Local Development Framework (LDF)

The Planning & Compulsory Purchase Act 2004 introduced a new development plan system. This is intended to streamline the local planning process and enable a Local Development Framework (LDF) to replace previous Unitary Development Plans (UDP).

On 7th November 2006 the Council submitted its first set of plans under the new Local Development Framework system to government and began the second round of statutory public consultation. Following this consultation the Council had a series of discussions with the Government Office for London and the Planning Inspectorate. Whilst it was agreed in these discussions that the policy thrust was appropriate, concerns were raised about the style of the Core Strategy. These concerns, coupled with the inflexibility of the new plan-making system, led the Council to reconsider the best way to progress the LDF in the public interest. Consequently, the Council's cabinet (September 2007) resolved to seek to withdraw and recast the plans. The government on 4 October 2007 provided formal confirmation of the withdrawal.

The withdrawn documents were:

Core Strategy and Development Control Development Plan Document
 Proposals Map Development Plan Document
 City Fringe Area Action Plan Development Plan Document
 Isle of Dogs Area Action Plan Development Plan Document
 Leaside Area Action Plan Development Plan Document

This provides the Council, its partners and local residents with an opportunity to make the LDF a key part of the current Borough-wide visioning process that will set an exciting new Borough Vision to 2020. The Council's Strategic Planning team is working closely with the Tower Hamlets

Partnership, using the evidence and feedback from the LDF consultation to inform the development of a new Sustainable Communities Plan. The Vision and the priorities set out in the new Community Plan will form the basis for renewed Issues and Options consultation for the LDF Core Strategy in Spring 2008.

In the interim, the Council has adopted what was the emerging LDF as 'Interim Guidance for the Purposes of Development Control'. These documents will be used alongside the UDP and the London Plan when considering planning applications. They will also be used to guide the regeneration of the Borough and the delivery of important new infrastructure such as schools and new healthcare facilities.

3.3 New developments and the use of biomass

The draft Further Alterations to the London Plan (i.e. the London Spatial Development Strategy for Greater London) by the Mayor Of London includes new policies with respect to mitigation and adaptation towards climate change and the use and management of natural resources. The draft outlines that "The Mayor will and Boroughs in their DPDs should require developments to achieve a reduction in carbon dioxide emissions of 20% from onsite renewable energy generation." This may be required by the inclusion of renewable energy technology and design, including: biomass fuelled heating, cooling and electricity generating plant, biomass heating, combined heat, power and cooling, communal heating, cooling and power, renewable energy from waste, photovoltaic cells, solar water heating, wind, hydrogen fuel cells, and ground-coupled heating and cooling in new developments wherever feasible.

4 Action Plan Progress Report

4.1 Introduction

The LB of Tower Hamlets Air Quality Action Plan was published in December 2003. The Air Quality Action Plan sets out what the Council is doing to improve air quality. The plan focuses on measures to reduce traffic flow and vehicle emissions that are consistent with other Council wide policies, principally in relation to both transport and planning. The main aim is to reduce NO_x and PM₁₀ emissions. Other actions include reducing emissions from buildings and industry, measures to raise public awareness of air pollution and greener travel. The Council through its Action Plan, and other policies, also supports other initiatives proposed and undertaken by other authorities to reduce emissions in the Borough.

4.2 Achievement of objectives

The Council's Action Plan applies to the Air Quality Management Area, which covers the whole of Tower Hamlets. This recognises that, although not everyone in the Borough will be exposed to concentrations that exceed the air quality objectives, it is the intention of the Action Plan is to reduce pollution levels, wherever possible, in pursuit of the achievement of the objectives.

4.3 Summary of key measures

This section provides a brief summary of some of the key measures included in the Action Plan and also the Council's progress on these actions. An Action Plan Status table of the actions listed in the plan is provided in Appendix 1 (see Table 24).

4.3.1 Monitoring air quality

The Council has maintained its commitment to monitoring air quality in the Borough and reporting to other bodies, including DEFRA and GLA since release of its plan. As reported earlier the Council monitors air quality using 4 real-time monitoring stations, as well as with nitrogen dioxide passive diffusion tubes which are located around the Borough. The Council is part of the London Air Quality Network and current monitoring data and historic data for the sites can be viewed on the www.londonair.org.uk site.

4.3.2 Planning Policy and Control

The Council is using the planning system to bring air quality benefits, through imposing planning conditions and through using section 106 agreements for new developments for car free developments and other air quality improvements.

The Council also supports the APPLE working group (Air Pollution Planning and the Local Environment) that is producing guidance to be used across London.

4.3.3 Low Emission Zone

The Council in its Action Plan recognised that the London-wide Low Emission Zone (LEZ) would play an important part in benefiting air quality in the Borough. Since the Action Plan was produced, the Mayor of London in May 2007 approved plans from TfL for the implementation of a LEZ, to cut harmful emissions from the most polluting lorries, coaches and buses. It will launch in February 2008, with the aim of improving air quality across the capital. From February 2008 the LEZ will apply to lorries over 12 tonnes. From July 2008 the LEZ will also apply to lighter lorries, buses and coaches.

5 Conclusion

This Air Quality and Action Plan Progress Report for 2007 fulfils the requirements of the DEFRA PRG 03 guidance and has updated monitoring results in the Borough and noted new relevant local developments and other initiatives.

The up to date monitoring results continue to indicate that the Government's current air quality objectives for NO₂ and PM₁₀ are being exceeded widely at locations across the Borough where there is relevant public exposure. Based on the findings in this report there is no need to progress to a Detailed Assessment either to revoke its existing AQMA or determine whether any new AQMAs are required.

The Council will continue its air quality monitoring programme and prepare for its next Air Quality and Action Plan Progress Report in 2008.

6 Recommendation

The Council is recommended to use triplicate tubes for its co-location studies to include exposure of as outlined in the TG03 guidance.

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Appendix 1

Table 14 CO data capture (%)

LAQN site	Type	2002	2003	2004	2005	2006
Tower Hamlets 2	R	99.0	98.0	83.0	88.0	86.0

Table 15 NO₂ data capture for year (%)

LAQN site	Type	2002	2003	2004	2005	2006
Tower Hamlets 1	R	97	99	92	98	85
Tower Hamlets 2	R	98	97	96	98	95
Tower Hamlets 3	U	91	94	63	71	98
Tower Hamlets 4	R					23

Table 16 SO₂ data capture for year (%)

LAQN site	Type	2002	2003	2004	2005	2006
Tower Hamlets 1	R	99	99	99	99	99
Tower Hamlets 3	U	91	85	91	77	98

Table 17 PM₁₀ data capture for year (%)

LAQN site	Type	2002	2003	2004	2005	2006
Tower Hamlets 1	R	96	96	98	95	96
Tower Hamlets 3	U	90	93	84	85	99
Tower Hamlets 4	R					23

Table 18 Ozone data capture rate for year (%)

LAQN site	Type	2002	2003	2004	2005	2006
Tower Hamlets 1	R	99	98	99	99	99
Tower Hamlets 4	R					15

Table 19 PM_{2.5} data capture for year (%)

Site	2002	2003	2004	2005	2006
Tower Hamlets 12			31	96	83
Tower Hamlets 8					64
Tower Hamlets 9			3	68	79
Tower Hamlets Bexley 6	100	99	99	99	97
Tower Hamlets 13					87

Table 20 2005/6 uncorrected annual mean NO₂ diffusion tube results for LB of Tower Hamlets ($\mu\text{g m}^{-3}$)

Site	Site type	Uncorrected 2005	2005 monthly count	Uncorrected 2006	2006 monthly count
1	Roadside	41.9	11	46.3	12
2	Roadside	50.4	11	56.7	12
3	Roadside	72.5	11	78.8	12
4	Roadside	64.1	11	70.2	5
5	Roadside	99.2	9	97.4	11
6	Roadside	91.0	10	102.7	12
7	Background	50.9	9	51.4	9
8	Roadside	43.2	10	44.3	12
9	Roadside	59.5	11	61.5	11
10	Roadside	66.4	11	65.3	11
11	Roadside	52.6	11	54.2	12
12	Roadside	48.4	9	55.3	12
13	Roadside	49.4	11	51.4	12
14	Roadside	53.5	10	54.6	12
15	Roadside	59.5	11	63.8	12
16	Roadside	60.2	11	63.3	8
17	Roadside	41.6	11	45.2	11
18	Roadside	60.1	11	62.9	12
19	Roadside	52.7	11	56.2	12
20	Roadside	67.0	11	75.7	12
21	Roadside	64.0	11	72.3	8
22	Roadside	43.9	7	47.3	3
23	Roadside	52.2	11	54.1	10
24	Roadside	65.1	10	60.0	12
25	Roadside	54.4	11	56.1	12
26	Roadside	53.9	11	64.2	12
27	Roadside	61.1	9	57.3	12
28	Roadside	84.3	10	79.2	11
29	Roadside	58.6	11	54.3	12
30	Roadside	65.7	10	69.3	10
31	Roadside	74.4	10	93.8	4
32	Roadside	67.1	11	69.0	12
33	Background	46.3	9	49.8	9
34	Roadside	60.9	10	58.1	12
35	Roadside	67.0	8	117.3	3
36	Roadside	48.5	4	51.2	12
37	Roadside	46.4	11	49.4	11
38	Roadside	49.3	10	56.7	9
39	Roadside	54.5	11	59.6	12
40	Roadside	59.0	5	61.2	12
41	Roadside	53.8	11	59.9	12
42	Background	37.2	10	40.7	12
43	Background	39.1	11	40.7	12
44	Roadside	57.1	11	60.8	12
45	Roadside	60.2	11	58.7	11

46	Roadside	47.2	11	50.0	11
47	Roadside	55.5	10	56.8	12
48	Roadside	49.7	11	50.3	12
49	Roadside	52.5	11	55.6	12
50	Roadside	62.1	11	66.4	12
51	Background	52.8	11	46.2	9
52	Roadside	56.5	10	61.1	12
53	Roadside	59.7	6	84.8	4
54	Roadside	59.5	10	72.3	12
55	Background	35.6	11	34.8	12
56	Roadside	48.7	11	51.2	12
57	Roadside	40.2	11	50.6	11
58	Roadside	46.1	11	44.5	12
59	Roadside	59.1	10	52.4	12
60	Roadside	44.7	9	57.3	12
61	Roadside	53.4	8	57.5	12
62	Roadside	50.3	9	46.5	11
63	Background	41.9	9	38.9	9
64	Roadside	53.3	11	52.1	12
65	Roadside	45.3	10	48.3	9
66	Background	47.5	2	39.8	8
67	Roadside	46.3	11	43.7	11
68	Roadside	45.7	10	43.5	12
69	Roadside	51.6	10	49.9	12
70	Roadside	49.9	10	53.0	11
71	Roadside	60.6	10	61.5	11
72	Roadside	51.9	11	50.0	11
73	Roadside	53.1	8	38.8	10
74	Roadside	75.8	10	72.3	12
75	Roadside	43.9	11	43.2	12
76	Roadside	66.0	11	71.4	8
77	Roadside	54.5	11	51.3	12
78	Roadside	56.7	11	56.6	12
79	Roadside	43.1	9	50.6	12
80	Roadside	51.2	10	62.5	11
81	Roadside	57.6	10	107.2	12
82	Roadside	65.6	11	65.7	11
83	Roadside	67.7	3	108.9	11
84	Roadside	59.4	10	57.6	10
85	Roadside	69.7	10	57.5	4
86	Roadside	51.1	11	49.9	12
87	Background	65.1	11	61.3	12
88	Roadside	35.1	11	37.1	7
89	Background	42.1	10	44.7	10
90	Background	37.7	11	44.6	10

Table 21 Details of NO₂ diffusion tube site locations

Tube ID	Street location	Easting	Northing	TYPE
1	Gosset Street	533884	182815	Roadside
2	Boundary Street	533535	182606	Roadside
3	Bethnal Green Road	533875	182437	Roadside
4	Commercial Road	533603	182049	Roadside
5	Whitechapel High Street	533992	181431	Roadside
6	Mansell Street	533829	180929	Roadside
7	St Katharines Dock	534001	180415	Background
8	Wapping High Street	534441	180117	Roadside
9	Cartwright Street	533999	180608	Roadside
10	Adler Street	534208	181341	Roadside
11	Princelet Street	533869	181861	Roadside
12	Bethnal Green Road	534259	182580	Roadside
13	Squirries Street	534316	182806	Roadside
14	Warner Place	534255	183130	Roadside
15	Parmiter Street	534889	183254	Roadside
16	Paradise Row	534959	182757	Roadside
17	Finnis Street	534783	182385	Roadside
18	Sidney Street	534968	181878	Roadside
19	Philpot Street	534803	181325	Roadside
20	Dellow Street	534951	180779	Roadside
21	Horatio Street	533990	183095	Roadside
22	Wapping Wall	535132	180377	Roadside
23	Brodlove Lane	535598	180819	Roadside
24	Jubilee Street	535174	181288	Roadside
25	Cavell Street	534884	181667	Roadside
26	Stepney Way	535388	182017	Roadside
27	Globe Road	535295	182820	Roadside
28	Bonner Road	535356	183223	Roadside
29	Old Ford Road	535917	183384	Roadside
30	Whitechapel Road	534237	181581	Roadside
31	Whitechapel Road	534527	181752	Roadside
32	Mile End Road	535633	182147	Roadside
33	Stepney Way	535627	181618	Background
34	Pitsea Street	535798	181160	Roadside
35	Narrow Street	535990	180874	Roadside
36	Locksley Street	536703	181619	Roadside
37	Rodeswell Road	536578	181366	Roadside
38	Ben Jonson Road	536191	181725	Roadside
39	Harford Street	536089	182258	Roadside
40	Thoydon Road	536109	183050	Roadside
41	Ford Close	536447	183301	Roadside
42	Victoria Park	536558	184206	Background
43	Victoria Park	536565	184202	Background
44	Parnell Road	536858	183747	Roadside

45	St Stephen's Road	536713	183070	Roadside
46	Mile End Road	536546	182580	Roadside
47	Wentworth Mews	536465	182444	Roadside
48	Acroyd Drive	536777	181775	Roadside
49	Dod Street	536964	181245	Roadside
50	West India Dock Road	536940	180992	Roadside
51	Watney Market	534938	181257	Background
52	Wick Lane	537304	183619	Roadside
53	Fairfield Road	537156	183384	Roadside
54	Glebe Terrace	537514	182877	Roadside
55	Southern Grove	536725	182361	Background
56	Bow Common Lane	537248	181815	Roadside
57	Augusta Street	537532	181290	Roadside
58	Dolphin Lane	537539	180688	Roadside
59	Westferry Road	536973	180628	Roadside
60	Westferry Road	537115	180074	Roadside
61	Alfred Street	537056	182773	Roadside
62	Mast House Terrace	537352	178686	Roadside
63	Globe Road Walk	538263	178685	Background
64	Limeharbour	537953	179357	Roadside
65	East Ferry Road	538037	178357	Roadside
66	Globe Road Walk	538270	178685	Background
67	Seyssel Street	538552	178766	Roadside
68	Manchester Road	538432	179044	Roadside
69	Lawn House Close	538191	179750	Roadside
70	Admirals Way	537523	179835	Roadside
71	Toynbee Street	533695	181689	Roadside
72	Prestons Road	538369	180182	Roadside
73	John Smith Mews	538672	180739	Roadside
74	Poplar High Street	538271	180760	Roadside
75	Hale Street	537661	180768	Roadside
76	East India Dock Road	537942	181027	Roadside
77	Morris Road	537728	181758	Roadside
78	Devons Road	537577	182232	Roadside
79	Hartfield Terrace	537356	183068	Roadside
80	Wrexham Road	537581	183208	Roadside
81	Bromley High Street	537903	182994	Roadside
82	Devas Street	538081	182376	Roadside
83	Zetland Street	538170	181729	Roadside
84	Blair Street	538366	181180	Roadside
85	Portree Street	538895	181296	Roadside
86	Newport Avenue	538955	180925	Roadside
87	Mile End Road	535922	182223	Roadside
88	Wades Place	537530	180839	Background
89	Roman Road	535102	182666	Control
90	Roman Road	535102	182666	Control

Table 22 Part A2 / B installations in LB Tower Hamlets

PG Note	Company Name	Site Address/ Home Address of Mobile Plant
PG3/16(04) Mobile Crushing and Screening	Clifford Devlin Ltd	Clifford House, Towcester Road, London, E3
PG2/2(04) Hot Dip Galvanising Process	J Ash & Sons	London Galvanisers, Leven Road, London, E14 0LP
PG6/34(04) Respraying of Road Vehicles	KPM Taxis	Hemming House, Hemming Street, London, E1 5BL
PG2/2(04) Hot Dip Galvanising Process	Lancaster & Co Ltd	Hancock Road, London, E3 3DA
PG3/1(04) Bulk Cement	London Concrete Ltd	Bow Plant, Wick Lane, Bow, London, E3
PG6/34(04) Respraying of Road Vehicles	LP Motors Ltd	103-104 Dunbridge St, London, E2 6JJ
PG3/16(04) Mobile Crushing and Screening	McGrath Bros (mobile)	Wansbeck Road, London, E9 5HW
PG3/16(04) Mobile Crushing and Screening	McGrath Bros (mobile)	Wansbeck Road, London, E9 5HW
PG3/16(04) Mobile Crushing and Screening	McGrath Bros (own site)	Wansbeck Road, London, E9 5HW
PG6/34(04) Respraying of Road Vehicles	Midcar	Bow Common Lane, London, E3 4AX
PG3/1(04) Bulk Cement	Modern Mix Concrete (Jim'll Mix It)	Unit 1, Lusty Industrial Estate, Empson Street, London, E3 3LT
PG6/34(04) Respraying of Road Vehicles	Renault London City	585- 593 Commercial Road, London, E1 0HJ
PG3/1(04) Bulk Cement	CEMEX South East	477 The Highway, Stepney, London, E1 9HN
PG6/16(04) Printworks	Westferry Printers Ltd	235 West Ferry Road, London, E14 8NX
PG1/14(04) Unloading of Petrol into Storage at Petrol Stations	Star The Highway	Star Service Stations Ltd, 102-106 The Highway, London E1 9BU
PG1/14(04) Unloading of Petrol into Storage at Petrol Stations	Star St Katherines	Star Service Stations Ltd, 77-101 The Highway, London E1 9BN
PG1/14(04) Unloading of Petrol into Storage at Petrol Stations	Star Cotton Street	Star Service Stations Ltd, 40 Cotton Street, London E14 0AJ
PG1/14(04) Unloading of Petrol into Storage at Petrol Stations	Star Bow Road	Star Service Stations Ltd, 127-139 Bow Road, London E3 2AN
PG1/14(04) Unloading of Petrol into Storage at Petrol Stations	Orchard Wharf Service Station	Orchard Wharf Service Station, Leamouth Road, London E14 0JG
PG1/14(04) Unloading of Petrol into Storage at Petrol Stations	Shell Whitechapel	Shell UK Ltd, 139-149 Whitechapel Road, London E1 1DT

PG1/14(04) Unloading of Petrol into Storage at Petrol Stations	Shell Old Ford	Shell UK Ltd, 445-453 Wick Lane, London E3 2TB
PG1/14(04) Unloading of Petrol into Storage at Petrol Stations	Tesco Filling Station	Tesco Petrol Filling Station, Hancock Road, London E3 3DA
PG1/14(04) Unloading of Petrol into Storage at Petrol Stations	Vallance Self Service Station	Vallance Self Service Station, 112 Vallance Road, Bethnal Green, London E1 5BW
PG1/14(04) Unloading of Petrol into Storage at Petrol Stations	Asda Petrol Station	Asda Petrol Station, 151 East Ferry Road, London E14 3BT
PG1/14(04) Unloading of Petrol into Storage at Petrol Stations	Sainsbury Petrol Garage	Sainsbury's Petrol Garage, 1 Cambridge Heath Road, London E1 5SD
PG1/14(04) Unloading of Petrol into Storage at Petrol Stations	Grove Road Filling Station	Grove Road Filling Station, 51-53 Grove Road, London E3 4PE
PG1/14(04) Unloading of Petrol into Storage at Petrol Stations	Museum Service Station	Museum Service Station, 319-329 Cambridge Heath Road, London E2 9LH
PG1/14(04) Unloading of Petrol into Storage at Petrol Stations	Burdett Road Filling Station	Burdett Road Filling Station, 222 St Pauls Way, London E3 4AR

Table 23 Part B dry cleaners in LB Tower Hamlets

Company Name
Reliable Dry Cleaners
Soleil Drycleaners
Dry Cleaning by Sandringham
Spitalfields Dry Cleaners
Milligan Street Trading Ltd
Salmon Drycleaners
Brayford Dry Cleaners
Bright Clean
Professional Dry Cleaners
Quality Dry cleaners
Amigos Dry Cleaning
Nazal Dry Cleaners
Spotless Drycleaners
Five Star Dry Cleaners
Quality Dry Cleaners
Kemp Drycleaners
Enviro Dry cleaning
Ace Suede and Leather Cleaning
Sparkle Clean
Royal Deluxe Dry Cleaners
B&S Dry Cleaners
Champers Cleaners
Gold Star Dry Cleaners
Bow Dry Cleaners

Table 24 Air Quality Action Status Table

(Note – missing numbered targets were completed and reported previously)

No	Target	Action	Original Timescale	Progress with measure	Outcome to date	Comments
2	Monitoring Air Quality	Identify pollution trends and areas of high pollution (MEDIUM)	2003/ Ongoing	LBTH completed its second round Review and Assessment of Air Quality in 2004 and produced a trend analysis based on its AQ monitoring.	Action completed. Completed third round of review and assessment and submitted USA 2006 to DEFRA.	To continue reporting annually to DEFRA
3		Provide information to DEFRA and the GLA for research purposes (LOW)	Ongoing	These data are reported to DEFRA/ GLA as part of the R&A process and made available on the London Air Quality Network website	This is ongoing	See http://www.londonair.org.uk/london/asp/home.asp
4		Provide public access to information online (MEDIUM)	2004/ Ongoing	A Tower Hamlets Air Quality Website has been developed with funding from TfL, providing access to air quality information for primary school children.	Site launched on 16 June 2005 to provide AQ information to both adults and children in the Borough. We are seeking further TFL funding to update the website to include info on Climate change, energy efficiency, which includes downloadable leaflets.	See http://www.thaq.info/ TfL = Transport for London Updates will be dependant on funding received
5		Management of Air Pollution Monitoring Network (MEDIUM)	Ongoing	The Council is maintaining its 3 permanent continuous sites and 90 non-continuous sites to assess pollutant concentrations across the Borough.		A new site was set up in the Borough in 2006 monitoring nitrogen dioxide, ozone and particles (PM ₁₀ and PM _{2.5})
11	Planning Policy and Control	Supplementary Planning Guidance (SPG) for Air Quality (HIGH)	2003	The Council has formally withdrawn the LDF in October 2007 and reverted back to the UDP for relevant planning policy.	EH will await the adoption of the LDF to implement SPG in the planning process. LBTH has provided input into the completion of the	APPLE (Air Pollution Planning and the Local Environment)

					London Council's Planning Guidance supporting the preparation of revised planning guidance	
13		Review of Section 106 of Town & Country Planning Act 1990 (HIGH)	2003	LBTH has successfully used s106 agreements with Car Free Developments We have sought Section 106 funding with a view to mitigating air quality effects of new developments in the Borough.	This is ongoing	
14		Review of Air Quality in UDP (replaced by LDF) (HIGH)	2003	LDF Documents are being prepared; with 'Preferred Options' stage of the first Development Plan documents and Statement of Community Involvement due in 2006.	This is ongoing. The review of air quality policies is part of the rolling programme LDF schedule.	LDF = Local Development Framework
15		Use of GIS Air Quality Information for prioritisation (HIGH)	2003/ Ongoing	GIS AQ Category available since 07/05.	Data and metadata are to be continuously updated	
16	Physical Traffic Management	Improvement of Traffic Control on Aldgate Gyratory System (MEDIUM)	2004	Plans developed for removal of the gyratory progressing through TfL approval process as part of a major planning application.	Additional pedestrian, cyclist and bus facilities introduced following TP and TfL actions.	Undertaken by TP and TfL TP = LBTH Transport & Parking
20	Routing Traffic & Road Hierarchy	Providing Information to the Mayor & GLA (MEDIUM)	Ongoing	A review has been carried out through Mayor's London Plan.	This process is ongoing	LIP = Local Implementation Plan
21		Planning officers updated on roads for review of UDP (MEDIUM)	Ongoing	This is currently being achieved through the LIP and LDF.	This is an ongoing process	
22		Review of Land use along local distributor roads (MEDIUM)	Ongoing	This is currently being achieved through the LDF process.	This is an ongoing process	
24	Street Signage, Street Environment	Implementation of streetscape programme (HIGH)	Ongoing	This is proceeding according to schedule.	Action completed	

25		Complete first and begin second phase of the Home Zone (MEDIUM)	2004/ Ongoing	A total of 8 Home Zones have been identified. 4 have been completed and two more are in the progress of being implemented.	Action completed	The selection is determined by funding availability.
26		Implementation of Traffic Calming Measures (MEDIUM)	Ongoing	Traffic calming measures are being introduced in the Home Zones, as part of LBTH's Safer routes to School project and in 20 mph zones	This is an ongoing process	Examples include Lansbury Neighbourhood Home Zone and Teviot area 20 mph zone
27	Parking Management & Control	Work with TfL to reduce disparity between LBTH parking and parking on Red Route (MEDIUM)	Ongoing	LBTH is currently liaising with TfL to reduce this disparity.	This is an ongoing process	There are indications that TfL will resist any change to parking controls on Red Route maintained roads
28		Regular Review of parking fees and charges to deter unnecessary car use (MEDIUM)	Annually	The Parking fees and charges are reviewed annually.	Fees were last increased in April 2007	Presenting a report to cabinet in December on an emissions based/engine size charging structure for on street parking permits
30		Use of GIS Air Quality Information in determining levels of parking control (MEDIUM)	Ongoing	The Air Quality information was made available on GIS from the 31/12/04.	This is an ongoing process. Data will constantly be updated.	
32		Parking control will work with planning to identify areas that can be car free (MEDIUM)	2004	Parking control do not have a say on what properties are subject to S.106 car free agreements	EH attempts to address the issue of car parking provision via the planning process. Car park emissions are modelled in air quality assessments.	
33	Encouraging Local Cycling	Promote the use of and improve facilities around the borough (MEDIUM)	Ongoing	LBTH has located cycle parking facilities, etc in Council offices to encourage cycle use and expanded its pool cycles	This is an ongoing process	LVRPA = Lea Valley Regional Park Authority LBs = London Boroughs

34		Liaise with cycle groups & schools (MEDIUM)	Ongoing	2700 children now in cycle training scheme	This is an ongoing process to 2008	
35		Promote the use of electric cycles and provide provision for secure storage (LOW)	2003/ Ongoing	Incorporated into planning process.	This is an ongoing process	
36		Improve road safety for cyclists (MEDIUM)	Ongoing	LBTH have made cycling a priority in the design and implementation of new traffic management schemes and developments	This is an ongoing process	
37	Encouraging Walking	Implement/ support LBTH Walking Strategy (LOW)	2003/ Ongoing	Strategy developed through the Local Implementation Plan	This is an ongoing process	Island River Walk has been improved
38	Partnerships and Travel Plans (Workplace and school)	To produce a Council Travel plan	2003/ Ongoing	LBTH travel plan was provisionally approved in March 2007, with final approval expected early 2008. Implementation of the draft TP commenced since 2007. We are conducting a staff travel survey, which will go out for consultation in 2008.	This is an ongoing process	
39		Implement the Safe routes to School scheme and produce borough wide safer routes to school strategy	2003/ Ongoing	LBTH has a School Travel Plan officer to help schools develop travel plans and safer routes to school	This is an ongoing process that has built upon Walk to School days	
40		Promote the development of sustainable transport schemes while achieving local regeneration through the Thames Gateway London Partnership	2003/ Ongoing	LBTH is an active member of the Thames Gateway London Partnership and its aims are central to the attainment of sustainable transport in the TGLP area and the Mayor's Plans	This is an ongoing process	TGLP = Thames Gateway London Partnership
41	Road Transport Promotion, Education & Awareness Training	Contribute to promotion of green travel on a London-wide basis (LOW)	Ongoing	LBTH has a Travel Awareness programme, which has now been incorporated into the GLA Mayors "DIY Planet Repairs" campaign. Travel awareness promotions are carried out	This is an ongoing process	See http://www.goodgoing.co.uk/

				locally by holding exhibitions, talks etc.		
42		Consult community on London wide travel choice (MEDIUM)	Ongoing	LBTH has consulted on the draft LIP and is a member of the Thames Gateway partnership promoting key transport investment	This is an ongoing process	
43	Low Emission Zones (LEZ)	Publicise results of London Wide feasibility study (MEDIUM)	Ongoing	LBTH has assisted TFL to commission a roadside monitoring station on the Blackwall Tunnel Northern approach. Data from this site will be used in our review and assessment of air quality. We will continue to act as a consultee to the LEZ and support it's implementation.	This is an ongoing process	ALG = Association of London Government
44		To work with Major, GLA and other London boroughs on establishing London-wide LEZ (HIGH)	Ongoing	The Council will continue to work with ALG, GLA and to secure a London wide LEZ by 2008. This includes the phased implementation for different category vehicles.	This is an ongoing process	GLA = Greater London Authority
45	Road User Charging	None proposed		LBTH remain interested in using this measure in the future	This is pending further actions outside of LBTH	
46	Urban Traffic Control Systems (UTS)	Monitoring and review of traffic signals to achieve best balance for traffic flow & pedestrians (MEDIUM)	2003/ Ongoing	LBTH works in conjunction with TfL to meet its LIP policies of reducing congestion and increasing levels of walking, cycling and public transport	This is an ongoing process	
47		Assist with development of London Bus Initiative (LBI) (MEDIUM)	2003/ Ongoing	LBTH has supported the LBI through BusPlus Enforcement agreement to reduce illegal parking and use of bus lanes	This is an ongoing process	LBTH works in conjunction with TfL
48	Reallocated Road Space	Contribute to reviews of bus and cycle lanes particularly in areas of poor air quality (MEDIUM)	Ongoing	Bus lanes and cycle lanes are prioritised according to strategic network plans and congestion hotspots.	This is ongoing.	

50	Public Transport Initiatives - Bus	Work with other boroughs to implement schemes to improve traffic flow on TfL roads (MEDIUM)	Ongoing	Bus services are assessed through ongoing reviews such as the Westferry Road Holistic Review.	This is ongoing.	
51	Public Transport Initiatives- Rail	Support and encourage public transport infrastructure projects (HIGH)	Ongoing	LBTH works with the Thames Gateway London Partnership on initiatives such as ELLX and DLR (3 Carriage) project.	This is ongoing.	ELLX =East London Line Extension DLR = Docklands Light Railway
52		Encourage and support transport hubs (HIGH)	Ongoing	A major street improvement project has been approved at Limehouse to complement work by DLR to improve the physical interchange between platforms.	This is part of the LIP and is ongoing.	
53		Support the construction of East London Line Extension (HIGH)	Ongoing	LBTH actively supports ELLX.	This is ongoing.	
54	Maritime, Ports and Waterways	Encourage an increase in the use of the River Thames as a freight corridor (MEDIUM)	Ongoing	This was included in the first deposit draft of the UDP	This is ongoing.	UDP = Unitary Development Plan
55		To support the movement of freight by water (HIGH)	Ongoing	This is encouraged / supported where appropriate via the planning process	This is ongoing.	
56		To work with TfL to increase the use of waterways that run through the borough (MEDIUM)	Ongoing	This is encouraged / supported where appropriate via the planning process	This is ongoing.	
57	Rail Infrastructure	If Stansted airport is expanded the Council will lobby for a increase in rail infrastructure (HIGH)	Ongoing	This is currently under review by LBTH	This is ongoing.	
58		If London City Airport is expanded the Council would require a scheme to	2003/ Ongoing	The Council has commented on the Environmental Statement submitted by Newham Council	Action completed.	

		increase capacity of the DLR (HIGH)		for the expansion of the airport. The air quality assessment has indicated that the expansion will not negatively affect local air quality in TH.		
59		Full EIA, including pollution modelling, will be required to assess local impacts before any proposals endorsed. (HIGH)	2003/ Ongoing	Any EIA submitted, will be considered on its merits in accordance with LBTH strategies and policy	Completed.	
60		The Council supports the opportunities afforded by Crossrail project (HIGH)	Ongoing	This support is currently qualified due to concerns and objections to the proposed Crossrail scheme	The Council has clarified a series of objections through the petitioning process with the House of Commons Select Committee and will consider it's options as the Bill passes into the House of Lords.	
61	Fleet Management & Clean Fuels	Promote and encourage the use of alternatively powered vehicles to all Council departments and improving availability of alternative fuels. (MEDIUM)	2004	The pest control section is currently using a fleet of electric vans.	Alternatively powered vehicles are offered to our client departments but the costs are higher and therefore affect their operational budgets. We therefore continue to purchase modern diesel engine vehicles and put exhaust catalysts on the larger vehicles. LBTH Vehicle fleet will comply with the Low Emission Zone.	LPG = Liquid Petroleum Gas
63		Develop and implement a driver training scheme (MEDIUM)	2004	The transport unit is currently reviewing its Driver's Codes Of Practice.	Action completed. New driver code of practice issued that includes guidance on awareness of driver habits on the environment and	

					reduction of risk.	
64		Maximise potential from grant schemes to reduce the financial burden of introducing cleaner vehicles and technology (HIGH)	Ongoing	This is being implemented in accordance with the availability of funding.	LBTH is undertaking 2 trials: <ul style="list-style-type: none"> • Installation of DPF (Eminox) system to 8 vehicles. • Fuel borne catalyst that is being used as additive to diesel fuel. 	These equipment research programmes are being supported by financial grants from the Energy Saving Trust. DPF = Diesel Particulate Filter
65	Domestic & Commercial Energy	Encourage, support and develop Combined Heat and Power Schemes (MEDIUM)	2004/ Ongoing	Study sponsored by the GLA for a London Heat Ring Main still ongoing. Power Olympic Sites and Stratford City, Kings yard Olympics (CHP proposed)	Met with the Energy Officer to discuss a co-ordinated strategy for Council. A Forum will be established. Main will link several power station sites to strategic heat loads in various boroughs. There are various organisations that provide support to boroughs.	CHP = Combined Heat & Power CEP = Community Energy Programme London heat Ring
66		Reducing Fuel Poverty across the borough through implementation of the Affordable warmth strategy (MEDIUM)	2004/ Ongoing	(2006/07) £79,395 Used on Cavity Wall insulation and £11,867 on specialist draught proofing. £186,000 also in grants for private households	This is an ongoing action.	
67		Use of GIS to target action in areas of poorest air quality (MEDIUM)	2004/ Ongoing	The boroughs communal heating systems and major potential heat loads has been placed on the GIS system. Poorest families (poverty mapped on GIS system)	This information will be used to prioritise areas for low carbon emission and renewable energy sources.	GIS= Geographical Information System
68		Promote the replacement of more efficient boilers (MEDIUM)	Ongoing	Advice is provided to the Technical Resources dept and the installation of condensing	East End Energy Savers Interest Free Loan scheme is continually	Council communal systems, technical resources, major

				boilers is encouraged.	promoted to residents to reduce the financial burden of replacement.	works, individual households (Warmhouse loans)
70		Support and develop initiatives to promote alternative energy (MEDIUM)	Ongoing	LBTH continues to promote solar water heating & solar PV to RSL for inclusion into new social housing projects.	This is incorporated into planning process.	RSL= Registered Social Landlord Installation, major works on communal buildings
71	Industrial Sources	Develop working relationship with industrial operators that have potential to release significant amounts of dust locally (LOW)	2004	Good working relationship has been established with all operators through prior planning of inspection visits, and providing formal and informal feedback following inspection through letters and discussion.	This is ongoing; a working committee has also been established between residents, LA and McGraths to deal with dust complaints from the Installation.	
74		Review Authorisations to operate, progressing upgrading programme's as a priority (LOW)	2004	Statutory requirements and Best Value Performance Indicator being met	This is ongoing statutory function	
75	Construction	Incorporate Council's CoCP into the LDF, SPGs, S.106 agreements, standard conditions and information for planning applications consent in respect of major developments. (MEDIUM)	2004	New London-wide guidance produced by the LBs and GLA is in the process of being produced.	This is ongoing	
76		Meet regularly with major developers having submitted EIA at planning stage to review and assess dust control measures (MEDIUM)	2004/ Ongoing	This is done by the submission and agreement of Environmental management Plans or CoCPs, via the planning process. Dust monitoring is undertaken for large construction sites.	As and when needed	
77		Map major developments on GIS & identify sites in	2004	This project is currently being undertaken by the Air Quality &	This is ongoing	See also action 80

		areas with high PM ₁₀ (MEDIUM)		GIS officer		
79		Ensure dust control planning conditions are included for small, medium and large developments (HIGH)	2004	This is ensured via the LBTH development control process and risk assessments are conducted	This is an ongoing function	
80		Apply to DEFRA for SCA to fund additional PM ₁₀ monitoring around construction sites (MEDIUM)	2004	Two major sites have been selected and ringed with PM10 analysers that will be maintained for at least one year.	This is ongoing	
81		The Council will continue to support BRE in developing national guidance (MEDIUM)	2004/ Ongoing	This is ongoing and done via our input into the APPLE forum as well	This is ongoing	
82		Lobby government to review legal powers available for addressing cumulative environmental impact for PM ₁₀ and NO ₂ (MEDIUM)	2004/ Ongoing	In the absence of statutory requirements for considering cumulative assessments of construction impacts, this action item is no longer valid.	This is ongoing	
83	Smoke control and nuisance policies	Review enforcement policy for smoke and dust control in Tower Hamlets (HIGH)	2004	LBTH is a Smoke Control Area.	Action completed.	
85		Provide a rapid response to complaints of bonfires, smoke or dust nuisance (HIGH)	2004	A hotline number is available where calls are logged immediately. A field officer then responds to the complaint by conducting a site visit and making observations. Appropriate mitigation measures and assessments are then made to resolve complaint.	Action completed.	

