

2012 Air Quality Updating and  
Screening Assessment for  
*Hammersmith & Fulham Council*

In fulfillment of Part IV of the Environment Act 1995  
Local Air Quality Management

April 2012

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<b>Report Reference number</b>	
<b>Date</b>	30 <sup>th</sup> April 2012

## Executive Summary

The Air Quality Progress Report has found that exceedences of the nitrogen dioxide annual mean and hourly mean objectives continued in 2011 at some locations in the borough, although as expected, breaches of the objectives seem to be more likely at busy roadside locations rather than at background sites. Breaches of the hourly nitrogen dioxide objective are also likely in busy locations alongside very busy 'A' roads and in the town centres. In terms of PM10, monitoring only restarted in November and there is not enough data to draw any conclusions about exceedences or compliance with air quality objectives in 2011.

The potential for new air quality impacts from a range of specified local sources has been considered, concentrating on assessing any new transport, industrial, commercial or domestic sources that were not covered by previous assessments. No significant developments have taken place since the Updating and Screening Assessment in 2011 or the last Updating and Screening Assessment in 2009. No further assessments are required at this stage.

The review of the Air Quality Action Plan for the 2011/12 period shows that progress has continued in most areas including the implementation of School Travel Plans, with significant modal shift away from car journeys; the continued popularity of the discount parking permit scheme for low emission vehicles; the installation and use of electric vehicle re-charging points and introduction of popular on-street car club bays; further exploration of future improvements to public transport in the borough in relation to Old Oak Common HS2 interchange station and increasing membership of the airTEXT pollution alert service.

The next stage in terms of air quality review and assessment work is to prepare and submit an Air Quality Progress Report in April 2013.

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# 1 Introduction

## 1.1 Description of Local Authority Area

The Borough of Hammersmith & Fulham is located on the western edge of inner London in a strategic location on the transport routes between the City and Heathrow. It is the 4<sup>th</sup> smallest of the London Boroughs in geographical area (1,641 hectares or 6.34 square miles) and has the 3<sup>rd</sup> smallest population (182,500, according to 2011 Census). It also has the 4<sup>th</sup> highest population density of any London Borough or indeed Local Authority in England.

Much of Hammersmith & Fulham is residential in character and scale although the northern most part of the borough is more industrial, forming part of the Park Royal industrial estate and is also the location for a complex network of railway lines, depots and sidings, including 2 busy rail routes – the Great Western and the West Coast mainlines. There are also a small number of light industrial processes authorised by the council, although most of these are made up of dry cleaners and petrol stations. The borough is also home to Westfield London in Shepherds Bush town centre, one of the largest shopping centres in the UK, to 3 Premiership football teams, 2 large exhibition centres at Earls Court and Olympia and is traversed by the A4 and A40, 2 of the busiest roads in west London.

Main sources of nitrogen oxides and small particle emissions in the borough are road traffic, domestic and commercial gas boilers, trains and small industrial processes.

## 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,  $\text{mg}/\text{m}^3$  for carbon monoxide) with the number of exceedences in each year that are permitted (where applicable).

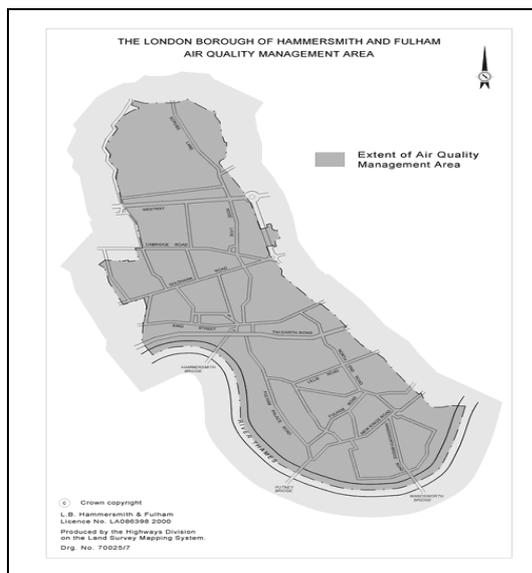
**Table 1.1 Air Quality Objectives included in Regulations for the purpose of LAQM in England**

Pollutant	Air Quality Objective		Date to be achieved by
	Concentration	Measured as	
Benzene	16.25 $\mu\text{g}/\text{m}^3$	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 $\text{mg}/\text{m}^3$	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 (PM <sub>10</sub> ) (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

## 1.4 Summary of Previous Review and Assessments

The whole of Hammersmith & Fulham was designated as an Air Quality Management Area (AQMA) in 2000 for two pollutants – nitrogen dioxide (NO<sub>2</sub>) and particles (PM<sub>10</sub>). This was because the first stage of the review and assessment process had shown that exceedences of the objectives for these pollutants were likely over large areas, particularly next to the busy road network that traverses the borough. There was no need to designate any area as an AQMA for any of the other pollutants as all of the targets for 1,3-butadiene, carbon monoxide, lead, sulphur dioxide and benzene were shown to be likely to be achieved.

**Figure 1.1 Map showing the Hammersmith & Fulham AQMA**



Having declared the AQMA, a more detailed assessment was carried out in the borough which confirmed the AQMA designation and then work started on drafting and implementing the Air Quality Action Plan (AQAP), which was adopted in April 2003. Progress with the Plan has been reviewed annually since 2004.

Updating and Screening Assessments (USAs) have also been completed (in 2004, 2006 and 2009), all 3 of which concluded that the original whole borough AQMA should remain. The 2004 USA showed that further investigations were necessary for 2 pollutants: (i) benzene (around a service station next to a busy road in Fulham) and (ii) PM<sub>10</sub> (in the industrialised part of the borough around Scrubs Lane). Results from these assessments have been reported previously and showed that no further actions were required. The 2006 USA concluded that exceedences of the NO<sub>2</sub> and PM<sub>10</sub> objectives were very likely to continue, requiring the AQMA to remain in place, but no Detailed Assessments were required. The 2009 USA concluded that it was appropriate to keep the AQMA in place, although it was recognised that there may be a more consistent level of compliance developing, particularly in relation to the PM<sub>10</sub> objectives.

For all other pollutants (1,3-butadiene, Carbon Monoxide, Lead, Sulphur Dioxide), the USAs have concluded that the Air Quality Strategy objectives were likely to be met by the required dates, so no further action was required to control emissions of these pollutants.

## 2 New Monitoring Data

### 2.1 Summary of Monitoring Undertaken

#### 2.1.1 Automatic Monitoring Sites

The council's new air quality monitoring station in Shepherds Bush town centre began measuring NO<sub>2</sub> and PM<sub>10</sub> in November 2011.

Figure 2.1 Map of Automatic Monitoring Site

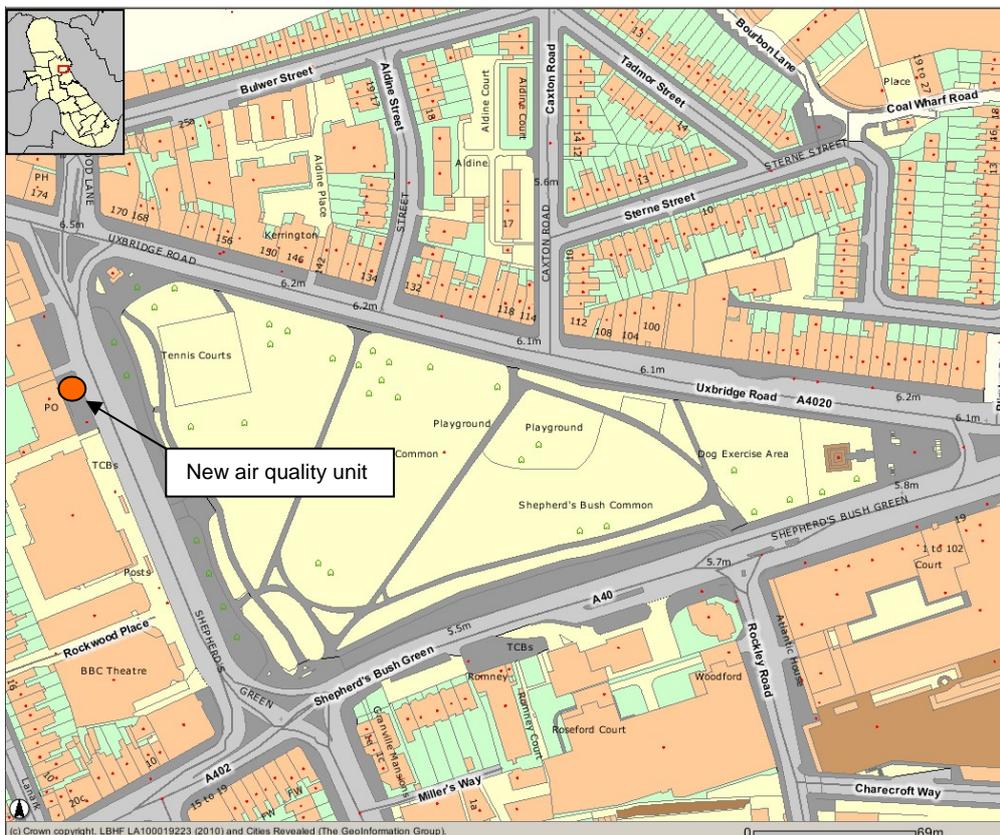


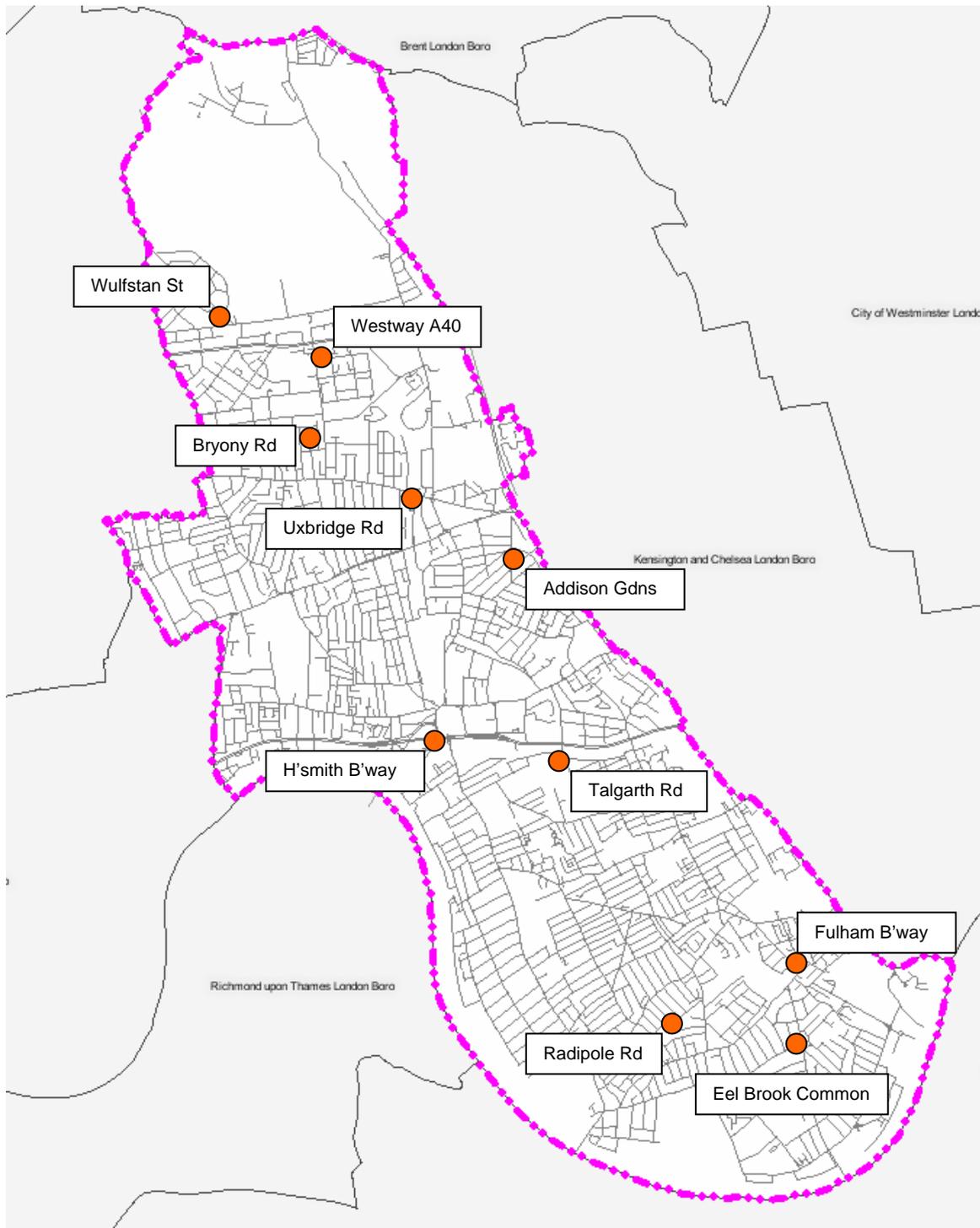
Table 2.1 Details of Automatic Monitoring Site

Site Name	Site Type	OS Grid Ref	Pollutants Monitored /Technique	In AQMA?	Relevant Exposure? (Y/N with distance (m) to relevant exposure)	Distance to kerb of nearest road (N/A if not applicable)	Does this location represent worst-case exposure?
Shepherds Bush	Urban Roadside	523313, 179900	NO <sub>2</sub> (chemil.) PM <sub>10</sub> (TEOM)	Y	Y (1m)	2m	Y

**2.1.2 Non-Automatic Monitoring**

During 2011, 10 diffusion tubes were used to monitor NO<sub>2</sub> levels at 5 roadside sites and 5 background sites, as shown in the map and table below.

**Figure 2.2 Map of Non-Automatic Monitoring Sites**



**Table 2.2 Details of Non- 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?
Addison Gardens	Urban Back-ground	523813, 179491	NO2	Y	Y (5m)	1m	N
Bryony Road	Urban Back-ground	522479, 180656	NO2	Y	Y (6m)	1m	N
Eel Brook Common	Urban Back-ground	525413, 176828	NO2	Y	N	50m	N
Fulham Broadway	Urban Road-side	525197, 177302	NO2	Y	Y (15m)	2m	Y
H'smith Broadway	Urban Road-side	523327, 178484	NO2	Y	N	4m	Y
Radipole Road	Urban Back-ground	524680, 176880	NO2	Y	Y (4m)	1m	N
Talgarth Road	Urban Road-side	524150, 178363	NO2	Y	Y (14m)	1m	Y
Uxbridge Road	Urban Road-side	522861, 180061	NO2	Y	Y (3m)	1m	N
Westway A40	Urban Road-side	522548, 180960	NO2	Y	Y (20m)	3m	Y
Wulfstan Street	Urban Back-ground	521984, 181132	NO2	Y	Y ( 13m)	1m	N

The lab supplying and analysing the diffusion tubes is Gradko, who use a 50% TEA in acetone preparation method. Full details of QA/QC procedures are included in Appendix A.

## 2.2 Comparison of Monitoring Results with Air Quality Objectives

### 2.2.1 Nitrogen Dioxide

#### Automatic Monitoring Data

In 2011, automatic monitoring only took place for the last 2 months. Therefore, it is not possible to make any meaningful comparisons with the air quality objectives.

### Diffusion Tube Monitoring Data

10 sites were monitored with NO<sub>2</sub> diffusion tubes in 2011. Results are shown in Table 2.3, alongside results from the previous 2 years.

In 2011, the background sites all met the annual mean objective and all of the roadside sites exceeded it. All sites showed lower concentrations in 2011 than in 2010 and 2009. This is encouraging, although it is not known at this stage whether this indicates a longterm downward trend that will continue.

**Table 2.3 Results of Nitrogen Dioxide Diffusion Tubes**

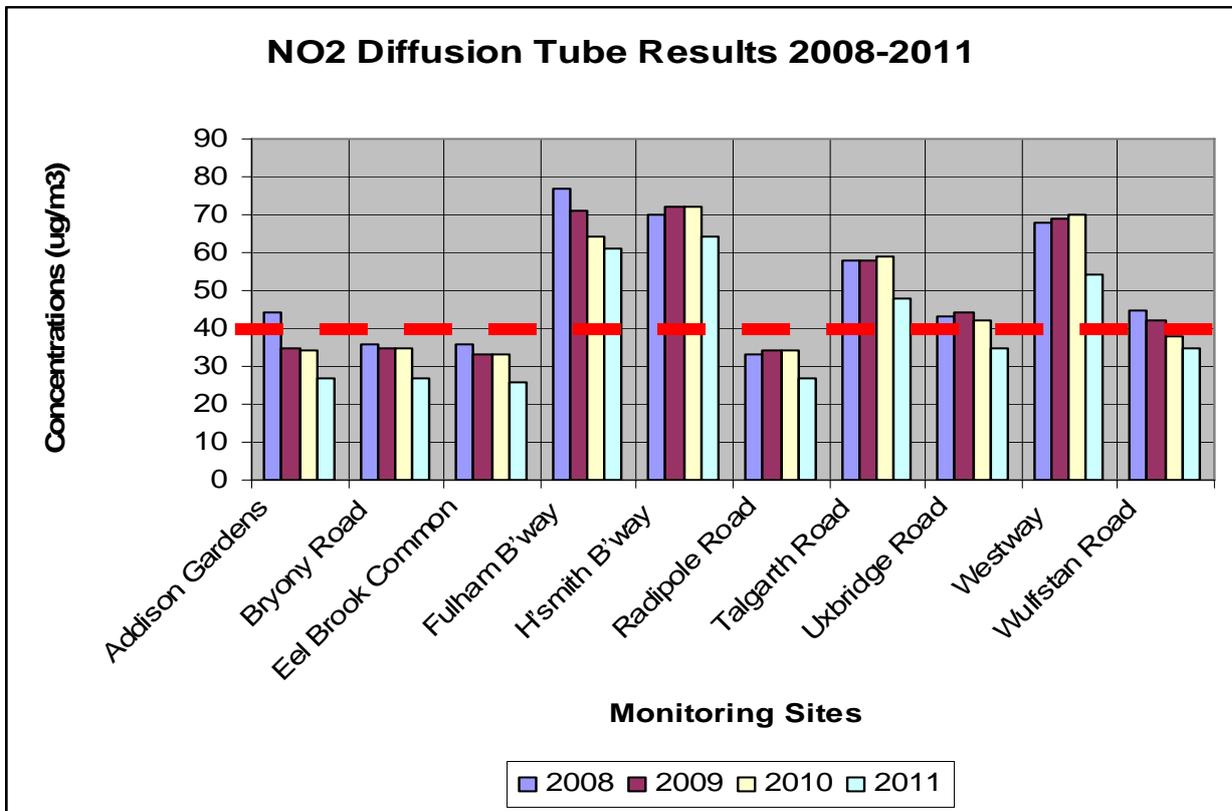
Site ID	Location	Within AQMA?	Data Capture for monitoring period (2011) %	Data Capture for full calendar year (2011) %	Annual mean concentrations (µg/m <sup>3</sup> )		
					2009	2010	2011
HF53	Addison Gardens	Y	92	92	35	34	27
HF45	Bryony Road	Y	83	83	35	35	27
HF44	Eel Brook Comm	Y	92	92	33	33	26
HF50	Fulham B'way	Y	83	83	<b>71*</b>	<b>64*</b>	<b>61*</b>
HF32	H'smith B'way	Y	92	92	<b>72*</b>	<b>72*</b>	<b>64*</b>
HF66	Radipole Road	Y	92	92	34	34	27
HF63	Talgarth Road	Y	92	92	<b>58</b>	<b>59</b>	<b>48</b>
HF61	Uxbridge Road	Y	92	92	<b>44</b>	<b>42</b>	35
HF54	Westway	Y	92	92	<b>69*</b>	<b>70*</b>	<b>54</b>
HF47	Wulfstan Road	Y	92	92	<b>42</b>	38	35

(bias adjustment factors used: 2009 – 0.92; 2010 – 0.93; 2011 – 0.94)

Concentrations highlighted in **bold** indicate an exceedence of the annual mean objective; those tagged with a star '\*', highlight annual mean results above 60 µg/m<sup>3</sup>, indicating a risk that the 1-hour objective may also be exceeded.

Figure 2.3 shows the annual mean NO<sub>2</sub> concentration trends over the last 4 years at these sites. As expected, the lowest concentrations tend to be found each year at the background sites (Addison Gardens, Bryony Road, Eel Brook Common, Radipole Road and Wulfstan Street), most of which have met the 40 µg/m<sup>3</sup> annual mean objective in recent years. The highest concentrations are found in the town centres (Hammersmith Broadway and Fulham Broadway) and alongside the busiest roads such as the Westway A40. As well as exceeding the annual mean objective, these sites could also exceed the short-term hourly objective. All sites are representative of relevant public exposure, mostly being residential streets, town centre areas or public parks.

**Figure 2.3 Trends in Annual Mean Nitrogen Dioxide Concentration Measured at Diffusion Tube Monitoring Sites**



**2.2.2 PM10**

As for real-time monitoring of NO2, only 2 months of data were collected in 2011, so comparisons are not possible with such low data capture for the year.

**2.2.3 Sulphur Dioxide**

There was no sulphur dioxide monitoring in Hammersmith & Fulham in 2011.

**2.2.4 Benzene**

There was no benzene monitoring in Hammersmith & Fulham in 2011.

**2.2.5 Other pollutants monitored**

No other pollutants were monitored in Hammersmith & Fulham in 2011.

## Summary of Compliance with AQS Objectives

Hammersmith & Fulham council has examined the results from monitoring in the borough.

Only limited PM10 monitoring took place in 2011, so it is not possible to draw a conclusion on compliance with the objectives for this year. However, previous PM10 monitoring in the borough showed that PM10 annual mean objective has been met at both the background and roadside sites, although the daily mean objective has occasionally been exceeded at the roadside site.

For NO<sub>2</sub>, exceedences of the annual mean objective continue at all roadside sites being monitored, with the hourly mean also possibly being exceeded at the very busiest locations. NO<sub>2</sub> levels at background locations met the objectives in 2011. All sites recorded improvements in NO<sub>2</sub> levels compared to recent years, but a longterm downward trend has not yet been established at all sites.

Although exceedences of the NO<sub>2</sub> objectives were measured in 2011, the whole borough is already an Air Quality Management Area for this pollutant, so a Detailed Assessment is not required at this stage.

### **3 Road Traffic Sources**

#### **3.1 Narrow Congested Streets with Residential Properties Close to the Kerb**

The Defra Updating & Screening Assessment checklist has been followed (as outlined in LAQM Technical Guidance LAQM.TG(09)) and no new congested streets have been identified.

Hammersmith & Fulham Council 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 Defra Updating & Screening Assessment checklist has been followed (as outlined in LAQM Technical Guidance LAQM.TG(09)) and no new busy streets have been identified.

Hammersmith & Fulham Council 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 Defra Updating & Screening Assessment checklist has been followed (as outlined in LAQM Technical Guidance LAQM.TG(09)) and no new roads with HGVs/buses have been identified.

Hammersmith & Fulham Council confirms that there are no new/newly identified roads with high flows of buses/HGVs.

### **3.4 Junctions**

The Defra Updating & Screening Assessment checklist has been followed (as outlined in LAQM Technical Guidance LAQM.TG(09)) and no new busy junctions have been identified.

Hammersmith & Fulham Council 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 Defra Updating & Screening Assessment checklist has been followed (as outlined in LAQM Technical Guidance LAQM.TG(09)) and no newly constructed roads have been identified.

Hammersmith & Fulham Council confirms that there are no new/proposed roads.

### **3.6 Roads with Significantly Changed Traffic Flows**

The Defra Updating & Screening Assessment checklist has been followed (as outlined in LAQM Technical Guidance LAQM.TG(09)) and no new roads with significantly changed traffic flows have been identified.

Hammersmith & Fulham Council confirms that there are no new/newly identified roads with significantly changed traffic flows.

### **3.7 Bus and Coach Stations**

The Defra Updating & Screening Assessment checklist has been followed (as outlined in LAQM Technical Guidance LAQM.TG(09)) and no new bus/coach stations have been identified.

Hammersmith & Fulham Council confirms that there are no relevant bus stations in the Local Authority area.

## 4 Other Transport Sources

### 4.1 Airports

There is no airport within Hammersmith & Fulham or within a distance of 1000m, so there is no relevant exposure in the borough due to aircraft emissions. Emissions from aircraft flying over the borough do not have any significant impact on ground level concentrations.

Hammersmith & Fulham Council confirms that there are no airports in the Local Authority area.

### 4.2 Railways (Diesel and Steam Trains)

#### 4.2.1 Stationary Trains

There are no stations in the borough that are used by diesel or steam trains. Diesel train services used to stop at Kensington Olympia, but these have been phased out. The sidings and depots in the north of the borough are isolated from residential areas and are not used regularly by diesel or steam trains.

Hammersmith & Fulham Council 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 First Great Western service running from Paddington to Swansea runs through the borough and this has been identified as a line where emissions from diesel Intercity trains need to be considered. However, as highlighted in the council's previous USA, the track does not pass within close proximity to residential properties.

Hammersmith & Fulham Council 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 borough's southern boundary is the River Thames and several wharves remain in operation. However, in terms of the size of the vessels and number of movements specified in guidance document LAQM.TG(09), assessments are only likely to be necessary for large commercial ports where 5,000+ movements of large ships such as ferries, container ships etc are common. The level of shipping activity and types of vessels using the Thames in this area are well outside the level which requires further assessment.

Hammersmith & Fulham Council confirms that there are no ports or shipping that meet 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

There are no relevant industrial processes that have become operational or that have been given planning permission since the last round of review and assessment.

Hammersmith & Fulham Council 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

There are no relevant existing industrial processes that meet this criteria.

Hammersmith & Fulham Council 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

There are no relevant existing industrial processes that meet this criteria.

Hammersmith & Fulham Council 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 petrol storage depots in the borough.

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

### **5.3 Petrol Stations**

The potential for emissions from petrol stations to affect local air quality has been assessed before, including a Detailed Assessment of 1 petrol station in the borough. The assessment showed that no further action was required. There are no new petrol stations in the borough that need to be assessed for this USA report.

Hammersmith & Fulham council confirms that there are no petrol stations meeting the specified criteria.

### **5.4 Poultry Farms**

There are no poultry farms in the borough.

Hammersmith & Fulham council confirms that there are no poultry farms meeting the specified criteria.

## **6 Commercial and Domestic Sources**

### **6.1 Biomass Combustion – Individual Installations**

Although proposals have been included in a small number of planning applications for biomass boilers, the council is not aware of any being installed yet.

Hammersmith & Fulham Council confirms that there are no biomass combustion plant in the Local Authority area.

### **6.2 Biomass Combustion – Combined Impacts**

As noted above, there are not yet any biomass boilers in the local authority area to assess.

Hammersmith & Fulham council confirms that there are no biomass combustion plants in the Local Authority area.

### **6.3 Domestic Solid-Fuel Burning**

The whole borough is covered by a smoke control order and local knowledge and professional judgement indicates that significant domestic burning of solid fuels is not undertaken across the local authority area.

Hammersmith & Fulham council confirms that there are no areas of significant domestic fuel use in the Local Authority area.

## 7 Fugitive or Uncontrolled Sources

A Detailed Assessment was carried out in 2005 for PM<sub>10</sub> emissions from existing processes in the industrialised part of the borough with the intention of determining whether or not they are making a significant contribution to PM<sub>10</sub> levels in the local area. In summary, only a small amount of PM<sub>10</sub> was identified as being possibly from the neighbouring industrial estate. The main source of emissions was an authorised process that closed down soon after the Detailed Assessment was completed.

There are no other existing processes with substantially increased emissions of PM<sub>10</sub> within the borough or in neighbouring local authority areas since the last round of review and assessment.

Hammersmith & Fulham Council 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**

The new monitoring data for 2011 shows that exceedences of the NO<sub>2</sub> annual mean objective continued at roadside sites, with some also likely to be exceeding the hourly mean objective as well. Although such monitoring results are typical of recent years, 2011 did show a decrease in NO<sub>2</sub> concentrations at all monitoring sites, although it is unclear at this stage if this represents a longterm trend in improving air quality.

In terms of PM<sub>10</sub>, only a small amount of monitoring was carried out in 2011, so it is very difficult to draw any conclusions in this report. Further assessment of PM<sub>10</sub> levels in the borough will be possible in the next Progress Report in 2013 when more PM<sub>10</sub> data will be available.

### **8.2 Conclusions from Assessment of Sources**

The potential for air quality impacts from a range of specific sources has been considered, concentrating on assessing any new sources that were not covered by previous assessments. The whole borough is already an Air Quality Management Area for both NO<sub>2</sub> and PM<sub>10</sub> and there are no new significant sources of these pollutants that would require a Detailed Assessment.

### **8.3 Proposed Actions**

The Updating and Screening Assessment has not identified the need to increase monitoring of pollutants at any location and there is no need at this stage to carry out a Detailed Assessment at any location or for a particular source or make changes to the AQMA.

The next stage in terms of air quality review and assessment work is to prepare and submit the next Progress Report, including AQAP review in April 2013.

## 9 References

Local Air Quality Management Technical Guidance (LAQM.TG(09)), DEFRA, 2009.

Air Quality Strategy, DEFRA, 2007.

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# Appendices

Appendix A: QA/QC Data

Appendix B: NO<sub>2</sub> Diffusion Tube Results 2011

Appendix C: Air Quality Action Plan Review 2011/12

## Appendix A: QA/QC Data

### Factor from Local Co-location Studies (if available)

The council does not have any NO<sub>2</sub> diffusion tubes co-located with its real-time monitoring station.

### Diffusion Tube Bias Adjustment Factors

The NO<sub>2</sub> diffusion tubes used for the passive monitoring work are supplied and analysed by Gradko International Ltd. The preparation method used is 50% TEA v/v in Acetone. The bias adjustment factor for the 2011 data is 0.94; for 2010 it is 0.93; for 2009 it is 0.92.

### Discussion of Choice of Factor to Use

No local bias adjustment factors are available, therefore the national 'overall' factors are used to adjust data.

### PM Monitoring Adjustment

Not Applicable – no PM<sub>10</sub> monitoring data is included in this report.

### Short-term to Long-term Data adjustment

No data adjustment of this type is included in this report.

### QA/QC of automatic monitoring

Only a limited amount of automatic monitoring took place in 2011 and no data is presented in this report. However, the council's automatic monitoring station is part of the London Air Quality Network (LAQN), which is run by the Environmental Research Group at King's College London. All real-time data from the monitoring station is therefore independently collected and validated on a daily basis. A combination of automatic and manual checks is used to assess data, identify and diagnose potential equipment faults and adjust data to take account of calibration tests. Automatic overnight calibrations are supplemented with regular manual calibrations of analysers. The procedures used conform to the requirements of the UK Automatic Urban and Rural Network Management and Co-ordination Units.

All data is also formally ratified. During this process the validation decisions can be ratified with the benefit of hindsight and using greater information, such as service records, calibration records and the results of station audits. Station audits are carried out every 6 months by the National Physical Laboratory, which is UKCAS (United Kingdom Accreditation Service) accredited.

**QA/QC of diffusion tube monitoring**

Diffusion tube analysis is carried out in Gradko’s UKAS accredited laboratory. Laboratory preparation and analysis of the tubes is strictly controlled and Gradko participate in 2 major independent schemes to assess their performance.

1) Workplace Analysis Scheme for Proficiency (WASP)

Gradko participates in the WASP NO2 diffusion tube scheme on a monthly basis. This is a recognised performance-testing programme for labs undertaking NO2 diffusion tube analysis as part of the UK NO2 monitoring network. The scheme is designed to help laboratories meet the European Standard EN482. The lab performance for 2011/12 is shown below:

Nitrogen Dioxide WASP Results 2011 - 2012

Camspec M550 & QuAAtro										
WASP Round No:-	R112A	R112B	R113A	R113B	R114A	R114B	R115A	R115B	R116A	R116B
	Feb-11	Feb-11	May-11	May-11	Aug-11	Aug-11	Nov-11	Nov-11	Feb-12	Feb-12
Assigned Value	0.94	2.10	1.532	2.304	1.20	0.89	1.70	1.44	1.79	0.84
Camspec Value	0.977	2.100	1.525	2.196	1.113	0.917	1.667	1.415	1.779	0.858
Camspec Value	0.969	2.049	1.586	2.288	1.202	0.918	1.424	1.448	1.708	0.841
Average	0.973	2.075	1.556	2.242	1.158	0.918	1.546	1.432	1.744	0.850
Z Score	0.5	-0.2	0.2	-0.3	0.4	-0.5	-0.3,-2.2	-0.2, 0.1	-0.1, -0.6	0.3, 0
QuAAtro Value	0.901	1.926	1.503	2.229	1.247	0.939	1.957	1.812	1.854	0.872
QuAAtro Value	0.890	2.018	1.471	2.277	1.244	0.937	2.141	1.675	1.846	0.868
Average	0.896	1.972	1.487	2.253	1.246	0.938	2.049	1.744	1.850	0.870
Z Score	-0.6	-0.8	-0.4	-0.3	0.7	0.5	2.0, 3.4	3.4, 2.1	0.5, 0.4	0.5, 0.5

Note: Round 115 QuAAtro results were poor due to contamination of samples during analysis. This was an isolated incident. No other samples were affected.

As noted in the footnote to the table, there was an isolated contamination issue that resulted in the loss of data for 1 month (August). Otherwise, the analysis performance levels are within the required levels to be regarded as satisfactory.

2) Network Field Inter-comparison Exercise

This exercise tests the performance of the diffusion tubes and lab analysis procedures and involves the regular exposure of a triplet of tubes at an Automatic Urban Network (AUN) site where real-time NO2 levels are also measured using a chemiluminescent analyser. Gradko operates well within the required level of performance in terms of accuracy and precision, as shown by the results below. In 2011, the uncertainty of measurement for Gradko’s analysis of diffusion tubes has been calculated at -2%, which is regarded as a good performance, signifying a high level of accuracy.

Table showing 2011 Network Field Inter-comparison results

Diffusion Tubes Measurements										Automatic Method		Data Quality Check	
Period	Start Date dd/mm/yyyy	End Date dd/mm/yyyy	Tube 1 $\mu\text{gm}^{-3}$	Tube 2 $\mu\text{gm}^{-3}$	Tube 3 $\mu\text{gm}^{-3}$	Triplicate Mean	Standard Deviation	Coefficient of Variation (CV)	95% CI of mean	Period Mean	Data Capture (% DC)	Tubes Precision Check	Automatic Monitor Data
1	05/01/2011	02/02/2011	95.2	95.9	97.6	96	1.2	1	3.1	91.2	93.3	Good	Good
2	02/02/2011	02/03/2011	88.0	98.6	78.0	88	10.3	12	25.6	111.7	93.3	Good	Good
3	02/03/2011	30/03/2011	88.0	98.6	78.0	88	10.3	12	25.6	95.7	96.8	Good	Good
4	30/03/2011	27/04/2011	114.9	100.9	111.8	109	7.3	7	18.2	106.4	97.5	Good	Good
5	27/04/2011	01/06/2011	110.0	113.3	112.0	112	1.7	1	4.1	99.9	97.4	Good	Good
6	01/06/2011	29/06/2011	108.2	121.1	134.7	121	13.2	11	32.8	93.1	90.8	Good	Good
7	29/06/2011	03/08/2011	82.9	77.0	83.9	81	3.8	5	9.4	86.1	91.1	Good	Good
8	03/08/2011	31/08/2011	98.7	97.0	111.4	102	7.9	8	19.6	82.2	97.7	Good	Good
9	31/08/2011	28/09/2011	98.1	98.2	102.0	99	2.2	2	5.5	108.5	96.1	Good	Good
10	28/09/2011	31/10/2011	92.9	97.1	106.1	99	6.7	7	16.7	108.2	96.5	Good	Good
11	18/11/2011	14/12/2011	65.1	65.3	69.8	67	2.7	4	6.6	110.2	97.4	Good	Good
12	30/11/2011	04/01/2012	110.2	105.2	117.7	111	6.3	6	15.6	105.4	96.6	Good	Good
13													

It is necessary to have results for at least two tubes in order to calculate the precision of the measurements

Automatic Method	Data Quality Check
Period Mean	Tubes Precision Check
Data Capture (% DC)	Automatic Monitor Data
91.2	Good
93.3	Good
111.7	Good
93.3	Good
95.7	Good
96.8	Good
106.4	Good
97.5	Good
99.9	Good
97.4	Good
93.1	Good
90.8	Good
86.1	Good
91.1	Good
82.2	Good
97.7	Good
108.5	Good
96.1	Good
108.2	Good
96.5	Good
110.2	Good
97.4	Good
105.4	Good
96.6	Good

Overall survey --> **Good precision** **Good Overall DC**

(Check average CV & DC from Accuracy calculations)

Site Name/ ID:	
----------------	--

Precision	12 out of 12 periods have a CV smaller than 20%
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Accuracy (with 95% confidence interval)	without periods with CV larger than 20%
Bias calculated using 12 periods of data	
Bias factor A	1.02 (0.91 - 1.16)
Bias B	-2% (-14% - 10%)
Diffusion Tubes Mean:	98 $\mu\text{gm}^{-3}$
Mean CV (Precision):	6
Automatic Mean:	100 $\mu\text{gm}^{-3}$
Data Capture for periods used:	95%
Adjusted Tubes Mean:	100 (89 - 114) $\mu\text{gm}^{-3}$

Accuracy (with 95% confidence interval)	WITH ALL DATA
Bias calculated using 12 periods of data	
Bias factor A	1.02 (0.91 - 1.16)
Bias B	-2% (-14% - 10%)
Diffusion Tubes Mean:	98 $\mu\text{gm}^{-3}$
Mean CV (Precision):	6
Automatic Mean:	100 $\mu\text{gm}^{-3}$
Data Capture for periods used:	95%
Adjusted Tubes Mean:	100 (89 - 114) $\mu\text{gm}^{-3}$

Jaume Targa, for AEA  
Version 04 - February 2011

## Appendix B: 2011 NO<sub>2</sub> Diffusion Tube Results

Table showing monthly NO<sub>2</sub> results for all diffusion tubes sites in 2011  
(unadjusted data)

Site ID	Location	Monthly average ( $\mu\text{g}/\text{m}^3$ )											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
HF53	Addison Gardens	24.19	22.56	25.29	17.49	28.2	25.47	27.39	n/d	31.67	37.87	43.68	34.76
HF45	Bryony Road	21.51	21.65	23.14	30.69	25.51	30.46	28.0	n/d	25.81	n/d	47.22	34.45
HF44	Eel Brook Common	21.6	19.58	26.39	29.82	20.63	24.81	23.54	n/d	39.57	30.0	43.08	27.39
HF50	Fulham Broadway	37.91	35.49	37.25	61.84	79.29	n/d	66.64	n/d	90.94	75.86	78.6	87.63
HF32	H'smith Broadway	35.91	43.27	45.9	86.68	83.71	81.34	71.9	n/d	56.54	82.55	92.77	64.0
HF66	Radipole Road	25.41	22.44	26.28	36.83	19.15	26.5	23.96	n/d	27.16	29.74	45.76	30.43
HF63	Talgarth Road	31.15	33.29	35.46	63.9	53.11	56.49	64.58	n/d	45.1	45.92	85.07	44.06
HF61	Uxbridge Road	25.38	22.91	28.43	48.06	36.53	36.4	36.95	n/d	41.79	34.43	53.11	44.24
HF54	Westway A40	42.44	16.37	41.35	75.08	53.47	58.19	81.83	n/d	56.91	58.72	93.34	50.79
HF47	Wulfstan Street	25.66	24.29	26.43	44.2	38.11	38.35	32.29	n/d	42.57	47.45	51.58	44.17

n/d – no data: see page 26 for explanation of lack of data for August.

## **Appendix C: 2011/12 Air Quality Action Plan Review**

The review of the Air Quality Action Plan for the 2011/12 period shows that progress has continued in most areas including the implementation of School Travel Plans, with significant modal shift away from car journeys; the continued popularity of the discount parking permit scheme for low emission vehicles; the installation and use of electric vehicle re-charging points and introduction of popular on-street car club bays; further exploration of future improvements to public transport in the borough in relation to Old Oak Common HS2 interchange station and increasing membership of the airTEXT pollution alert service.

Action Plan Progress 2011/12

Action Plan Measure	Original Timescale	Previously reported Progress	Previously Reported Outcomes	New Progress, Outcomes and Additional Comments for 2011/12
<b>REDUCING EMISSIONS AT SOURCE</b>				
1. Encourage improved availability of alternative fuels	Summer 2003	<p>a) Alternative fuels refuelling/recharging are available in the borough, although facilities, particularly for LPG, are still limited.</p> <p>b) LBHF took part in a SWELTRAC project to assess and install off-street charging points for electric vehicles. Provision of electric vehicle charging points on the public highway has been investigated in LBHF, but was not regarded as feasible.</p> <p>c) All diesel vehicles in the council fleet switched to a 5% biodiesel mix in early 2006.</p>	<p>a) There continues to be 2 service stations in the borough where forecourt LPG is available – BP Connect on Talgarth Road by Hammersmith Flyover and BP Connect Shepherd's Bush Green.</p> <p>b) Six electric vehicle charging points were installed as part of the SWELTRAC project (2 points at 3 sites: Hammersmith Hospital, Charing Cross Hospital and Kings Mall Shopping Centre). There are also 30 Charging points at the Westfield shopping centre in Shepherds Bush.</p> <p>c) Diesel vehicles continue to use 5% biodiesel fuel. Fleet MOT emissions tests have shown a reduction in smoke emissions.</p>	<p>a) The London Plan includes a policy that requires 1 in 5 parking spaces in major new developments to provide an electrical charging point to encourage the uptake of electric vehicles. This policy is implemented by the council.</p> <p>b) No further expansion of the off-street charging infrastructure. Consideration of installing on-street charging points have not been pursued due to parking stress in the borough.</p> <p>c) Diesel vehicles continue to use 5% biodiesel fuel.</p>
2. Provide incentives for use of alternative fuels	From Summer 2003 onwards	<p>a) Continued to publicise information on the location of LPG refuelling stations in the borough and details of grant schemes.</p> <p>b) The council introduced a discount parking permit scheme for low emission vehicles in autumn 2007.</p>	<p>a) Impacts are difficult to assess – BP does not like to provide sales figures for LPG or any off their fuels due to commercial confidentiality.</p> <p>b) By 2010/11 650 'green' parking permits had been issued for electric, gas or dual fuel cars in the borough. This represented about 1% of total permits issued.</p>	<p>a) As previously reported. No new activities for this measure.</p> <p>b) By 2011/12, a total of 1,393 'green' parking permits had been issued since the discount was introduced in 2007.</p>
3. Promote travel plans to encourage a switch to low emission vehicles	Ongoing from 2002 for the duration of the AQAP	<p>a) Low-emission vehicles are promoted through the travel planning process, particularly with businesses. Emphasis so far has been on alternative modes of transport. The council uses its own rickshaw as an example of what kinds of alternative vehicles are available.</p>	<p>a) By 2009/10, 78 workplace travel plans were listed on iTrace for the borough. 24 workplace travel plans were initiated or reviewed in 2010/11. The first 4 voluntary workplace travel plans had also been completed.</p>	<p>a) In 2011/12, 62 new workplace travel plans were secured.</p>
4. Reduce emissions from the council fleet	Ongoing from 2002	<p>a) As mentioned above, biodiesel has been adopted for use by the council's fleet. A fuel additive was also used until vehicle warranty issues stopped this. The fleet has been reducing in size in recent years, with a proportional decrease in alternatively fuelled vehicles. All HGV classified vehicles meet the LEZ emission requirements.</p>	<p>a) Use of biodiesel continues to help emissions from the council's diesel vehicles to be as low as possible. The number of vehicles in the council fleet continues to reduce as services are contracted out. The council has also signed up to TfL's Freight Operators Recognition Scheme (Bronze level) which offers training and guidance in a number of areas relating to vehicle and fleet management. In 2010/11, 27 new mini-buses that utilise Mercedes' 'stop/start' technology to reduce</p>	<p>a) The council remains a member of the TfL FORS scheme. We have also reduced the school bus fleet from 30 to 25 and replaced 6 day centre vehicles with new vehicles fitted with Euro 5 compliant engines.</p>

## Hammersmith & Fulham Council

Action Plan Measure	Original Timescale	Previously reported Progress	Previously Reported Outcomes	New Progress, Outcomes and Additional Comments for 2011/12
			idling emissions were added to the fleet.	
5. Seek a reduction in emissions from the bus fleet	To be agreed with TfL and bus operators	a) Council officers continue to liaise regularly with TfL representatives and bus operators.	a) TfL continues to trial buses running on alternative fuels such as electric-diesel, but none of the bus routes running in H&F are using hybrid buses, so there are no direct local emissions improvements from the trials. Bus companies are contacted when complaints are received about emissions at bus stands where engines are kept running unnecessarily.	a) No major updates other than there are continuing improvements in bus technology to reduce harmful emissions. Bus route H91 (Hammersmith to Hounslow West) became a hybrid service, with plans for route 211 (Hammersmith to Waterloo) to follow in July 2012. The new Routemaster Bus does not yet operate in the Borough.
6. Encourage the use of vehicles with smaller, more efficient engines	From Summer 2003 onwards	a) Produced a public information leaflet (Drive Down Pollution) which included information on benefits of smaller vehicles. Information also appeared in HFM, the council web site and information poster. Also distributed at events such as the west London Green Festival etc.  b) The Environment Services Department has use of a Smart car for council business which is used for site visits etc.	a) The information leaflet encourages people to consider smaller, more fuel efficient cars.  b) The Smart car is a visual reminder to people that such small, efficient cars are ideal for city driving conditions.	a) As previously reported. See above (action 2) for update on discount parking permit scheme.  b) As previously reported.
7. Seek to reduce emissions from larger vehicles (Low Emission Zone)	The report on the outcome of the LEZ study is due in mid 2003. Any scheme would need to be co-ordinated with other boroughs etc	a) The council submitted a full consultation response to TfL on their LEZ proposals. Concerns were raised about the potentially high costs that could be incurred in achieving relatively modest air quality benefits. The first phase of the LEZ was introduced in February 2008. Phase 2 of the LEZ was introduced in July 2008.	a) Most vehicles are complying with the LEZ requirements and emissions from HGVs (over 3.5t), buses and coaches are expected to be reducing in London as a result. All council vehicles comply with the LEZ emission standards as required.	a) The next phase of the LEZ came into force in January 2012 which requires larger vehicles to be Euro 4 compliant for PM10. Vans/mini-buses have come into the scheme for the first time and have to be Euro 3 compliant for PM10.
8. Seek to reduce emissions from badly maintained vehicles	Roadside testing is likely to start in 2003; to be co-ordinated with other participating boroughs	a) H&F carried out roadside tests as part of the London-wide vehicle emission testing scheme in 2003/04. However, the scheme was not funded to continue beyond that and no further testing has been carried out.	a) During 2003/04, 468 vehicles were tested, out of which 12 failed the emissions test. No test since then.	a) No further vehicle emission testing carried out.
9. Encourage more environmentally friendly driving behaviour	Implementation to be co-ordinated with other participating boroughs. Aim for summer 2003	a) Complaints about bus drivers unnecessarily running their vehicle's engine whilst parked are investigated as and when they are made by residents.  Our public information leaflet includes information on reducing emissions through improved driving style such as switching the engine off to avoid unnecessary idling.	a) Opening of the extension to Hammersmith bus station in March 2008 has removed buses from an on-street bus stand where buses had on occasion been seen with engines running unnecessarily whilst parked.	a) No recent complaints received about emissions from buses stationary at bus stands. TfL are now running a London-wide awareness and enforcement campaign on idling vehicles.
10. Seek a	Ongoing from	a) Complaints of dust nuisance investigated as and	a) Complaints continue to be investigated as	a) Complaints continue to be investigated as required.

## Hammersmith & Fulham Council

Action Plan Measure	Original Timescale	Previously reported Progress	Previously Reported Outcomes	New Progress, Outcomes and Additional Comments for 2011/12
reduction in emissions of small particles from construction sites	2002 for the duration of the AQAP	<p>when reported.</p> <p>b) Large scale developments are required to submit a construction code of practice, which will include measures on minimising dust emissions. SPD on Sustainable Construction adopted in November 2007 to provide advice on how to reduce dust and pollution impacts during construction /demolition works on large sites.</p>	<p>required. 14 complaints received in 2010/11 about construction/demolition dust. Informal warning/advice is usually effective in securing improvements. No notices served.</p> <p>b) Developers are advised to follow guidance in the council's SPD on Sustainable Construction and submit details on how dust/PM10 emissions will be minimised. The GLA/London Councils Best Practice Guidance on Control of Dust and Emissions from Construction and Demolition is also recommended.</p>	<p>4 complaints received in 2011/12 about construction / demolition dust. Informal warning/advice usually effective in securing improvements. 0 notices served.</p> <p>b) We continue to require a construction management plan for major development sites, including measures to minimise dust emissions and advised to follow SPD/BPG guidance.</p>
11. Seek a reduction in emissions from domestic and commercial properties	Ongoing from 2002 for the duration of the AQAP	<p>a) Annual home composter promotions and the garden waste collection scheme continue to divert waste from landfill and prevent disposal by bonfire.</p> <p>b) Complaints about smoke from domestic /commercial properties are investigated as and when they are received.</p> <p>c) The council's Carbon Management Plan was adopted in April 2010 and this outlines a number of energy efficiency saving projects which will reduce energy use and associated emissions, including local emissions as well as CO2.</p>	<p>a) By 2010/11, more than 4,600 home composters have been distributed in total since the composter promotions were first launched. In 2010/11 the following green waste was sent for composting:</p> <ul style="list-style-type: none"> <li>- 55 tonnes of Christmas trees</li> <li>- 225 tonnes of leaf fall from public highways</li> <li>- 168 tonnes from the council's parks.</li> </ul> <p>In 2010/11 we started to send some of our residual waste to an Energy from Waste plant rather than landfill -1,564 tonnes were sent for incineration during February and March (2011).</p> <p>b) Informal warning/advice usually effective in securing improvements. 43 complaints about smoke from bonfires in 2010/11. Advice was given and improvements secured. 2 notices were served. No complaints received about smoke from commercial chimney installations.</p> <p>c) The council has implemented the following: Improved energy monitoring through a Bureau Service and installation of AMRs for large sites and schools; Improved asset and facilities management which combined with Smart Working is rationalising and reducing the number of buildings used to deliver council services and improving energy management; the Corporate Planned Maintenance Programme has provided funds for energy initiatives; Carbon reduction initiatives have been implemented in the council's IT strategy.</p>	<p>a) In 2011/12, an additional 35 home composters were ordered and distributed. We also ran 4 composting workshops where we gave away 136 compost bins in total. In 2011/12 the following green waste was sent for composting:</p> <ul style="list-style-type: none"> <li>- 53 tonnes of Christmas trees</li> <li>- 360 tonnes of leaf fall from public highways</li> <li>- 10 tonnes from the council's parks. This is the tonnage delivered to Western Riverside Waste Authority. The Councils parks contractor is composting much of the green waste arising from parks within the parks themselves.</li> </ul> <p>b) In 2011/12 there were 44 complaints about smoke from commercial/domestic properties, including from bonfires. 0 abatement notices were served.</p> <p>c) A number of projects to improve energy efficiency have been implemented in 2011/12 for the council's corporate sites. We have so far delivered approx 4,000 tonnes of CO2 savings since the carbon management plan was implemented (a 41% reduction against the target). A number of further projects have been identified for future implementation.</p>

## Hammersmith & Fulham Council

Action Plan Measure	Original Timescale	Previously reported Progress	Previously Reported Outcomes	New Progress, Outcomes and Additional Comments for 2011/12
		<p>d) The baseline NI 185 data showed that the council's estates and operations were responsible for 24,443 tonnes of CO2 emissions in 2008/09. The Carbon Management Plan sets a target of reducing these emissions by an aspirational target of 40% by 2016.</p>	<p>d) NI185 has been replaced by DEFRA's Greenhouse Gas emissions reporting. Scope 1,2 and 3 emissions reported to DEFRA were: for financial years 2009/10 – 25,803 tonnes; and 2010/11 – 24,944 tonnes.</p>	<p>d) The council has compiled information on its emissions for 2011/12 and they will be published on <a href="http://www.lbhf.gov.uk/co2">www.lbhf.gov.uk/co2</a> in August. In general a 17% reduction in electricity use was found for 2011/12 when comparing with previous year (probably due to closure/sale of council buildings, however total emissions from schools (from gas and electricity) increased compared to 2010/11 and this was probably due to new schools (Hammersmith Academy and a number of new free schools in the borough). Total GHG emissions reported for 2011/12 are calculated as 25,299 tCO2e. One main difference since 2010/11 is that reporting for 2011/12 included fugitive air-conditioning emissions which calculated as 866 tCO2e. By removing this it can be seen that total GHG emissions have reduced by c. 500 tCO2e.</p>
<p>12. Seek to control and minimise emissions from industrial premises</p>	<p>Ongoing from 2002 for the duration of the AQAP</p>	<p>a) Complaints of smoke emissions investigated when reported. Authorised processes inspected in line with DEFRA requirements.</p>	<p>a) Continued regulation and reduction of emissions to atmosphere through the LAPPC regime and clean air regulations.</p> <p>5 complaints were received in 2010/11 regarding emissions from industrial sites regulated by the council. No evidence found of non-compliance – no action required.</p>	<p>a) Regulation duties continued in line with the LAPPC requirements.</p> <p>Two complaints were received in 2011/12 regarding emissions from industrial sites regulated by the council: smoke from a Waste Oil Burner and solvent odours from a mannequin manufacturer. Non-compliances with permits were identified in both instances and remedial action plans requested and progress is on-going.</p>
<b>REDUCING THE NEED TO TRAVEL</b>				
<p>13. Sustain and improve town &amp; local centres, facilities and employment areas</p>	<p>UDP review to be complete in 2003</p>	<p>a) UDP alterations adopted in August 2003. The Mayor's altered London Plan was adopted in February 2008, then revised and adopted in July 2011.</p>	<p>a) Work has started on the Local Development Framework which will replace the UDP. Over the past couple of years, the Council has been reviewing and refining its proposed LDF Core Strategy. Reducing traffic congestion and the need to travel remain strategic objectives.</p>	<p>a) The council's Core Strategy includes strategic policies supporting the regeneration of key parts of the borough including the White City Opportunity Area, Earls Court and West Kensington, South Fulham Riverside and Old Oak Common. Regeneration of these sites in key parts of the borough will help improve local centre, reducing the need for residents to travel to get the key services they require.</p>
<p>14. Seek to reduce the air quality impact of new development</p>	<p>Ongoing from 2002 for the duration of the AQAP</p>	<p>a) Planning policies are applied as and when required to ensure developments to not have any adverse impacts on local air quality. Where necessary conditions have been attached to planning approvals or s.106 agreements made to require Travel Plans or improve public transport facilities.</p>	<p>a) The council's Core Strategy contains a policy on air quality which requires air quality assessments for major developments and implementation of mitigation measures, if there is a need to reduce impacts.</p>	<p>a) More detailed policies relating to air quality have been drafted for inclusion in the council's DM DPD which is out for consultation. Adoption of these policies is expected in early 2013.</p>

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Action Plan Measure	Original Timescale	Previously reported Progress	Previously Reported Outcomes	New Progress, Outcomes and Additional Comments for 2011/12
		b) Air quality and land use guidance has been prepared for internal use by Development Control.	b) H&F guidance is in use by Development Control officers.	b) New guidance has been drafted and is currently out for consultation. It is expected to be adopted in 2013.
<b>ENCOURAGING A SWITCH TO LESS POLLUTING FORMS OF TRANSPORT</b>				
15. Promotion of bus services	Ongoing from 2002 for the duration of the AQAP	a) Continuing liaison with TfL on the provision of new bus services in the borough. The council continues its involvement with the London Bus Priority Network and will further facilitate its continued success by preparing, or assisting in the preparation of bids for funding.  All buses operating in the borough are now accessible.	a) Bus service improvements achieved on a number of routes including: Route 316 - extended from North Kensington to White City, via the Edward Woods estate, from November 2008; New route 228 - introduced January 2009. (Both in association with Westfield); A new Sunday service was introduced on route 607 from April 2010; A full time bus stop for southbound traffic was constructed in North End Road (junction with Racton Road) - previously a bus stop at this location operated only in the evenings and on Sundays.	a) We have installed 50 metres of northbound bus lane/bus only road at the north end of Fulham Palace Road as part of the Fulham Palace Slip Road/ Hammersmith gyratory scheme which has produced substantial benefits for buses and other traffic.  Regarding bus service changes:- From December 2011, articulated buses were replaced by double decker vehicles with increased frequency on route 207 (Uxbridge Road) and frequencies were increased on Friday and Saturday nights on the N207. From January 2012 increased frequency was introduced in the peak periods on bus route 220.
16. Promotion of other forms of public transport	Ongoing from 2002 for the duration of the AQAP	a) Continued to work in partnership with TfL on the development of the West London Tram scheme and with rail operators on new West London Line stations at Shepherd's Bush and Imperial Wharf.	a) Shepherds Bush rail station opened in September 2008 and a new tube station at Wood Lane opened in October 2008. Imperial Wharf station was opened in September 2009.  The council is promoting a Crossrail interchange station with the West London Line in the Old Oak Common/Mitre Bridge area, linked to a possible High Speed Rail hub station.	a) The Government's proposals for High Speed 2 would include an interchange station at Old Oak Common with Crossrail and the Great Western main line. We are working with GLA/TfL and neighbouring boroughs on the preparation of an Old Oak Common and Kensal Opportunity Area Planning Framework to ensure that other lines such as West and North London Line are connected into the station, and that opportunities for regeneration in the area are maximised.  2 Public transport promotional events were held in the borough on 2011/12.
17. Promotion of cycling	Ongoing from 2002 for the duration of the AQAP	a) In 2009/10, £372,000 was spent on LCN plus routes and £60,000 on cycle training for children and adults. From April 2010, the London Cycle Network will no longer be promoted or funded. Cycling improvements on the highway will be introduced through the boroughs Corridor and Neighbourhoods budgets. The UDP has cycle parking standards to ensure new developments provide adequate provision for cycle parking /storage. In 2009/10, a total of 251 children were trained. 88 were trained to 'Bikeability' level 1 (38 of which achieved 2.7). 163 children were trained to level 2.8 and above. A total of 187 adults received individual training.	a) From 2010/11 TfL funding of transport work for London Boroughs changed to a holistic approach by way of "Neighbourhood" and "Corridor" funding. The approach taken by H&F has been to carry out "blank canvas" consultation with local people to understand their transport needs and problems. Proposals are then formulated and this is subjected to a further round of consultation. This has allowed local issues to be identified including identification of the need for additional cycle parking.  In 2010/11 we carried out works in the Upper Mall which is part of the Thames Path to address local	a) During 2011/12, the council has provided 94 on-street cycle parking spaces and have provided cycle training to 184 adults and 456 children. Officers have worked with TfL on the identification of sites for the London Cycle Hire scheme. A substantial number of off-street spaces have also been secured and implemented through the development control system. Cycle training has been supplemented by maintenance classes with RBKC, all ability lessons and a "Recycle the way you travel" project with children at risk.  In total, 12 Dr-Bike sessions were held on 2011/12 and 1 cyclist breakfast event to promote cycling to work. 18 schools took part in the 'Bike-It' scheme.

## Hammersmith & Fulham Council

Action Plan Measure	Original Timescale	Previously reported Progress	Previously Reported Outcomes	New Progress, Outcomes and Additional Comments for 2011/12
		<p>The Sustrans Bike It project has been running in the borough since 2007. The project has tackled low bike ownership and improved the road worthiness of pupils' cycles, through the provision of Dr Bike Days and the organisation of bike pools.</p> <p>The UDP has cycle parking standards to ensure new developments provide adequate provision for cycle parking/storage.</p>	<p>concerns regarding cycle / pedestrian conflict. The works included widening a path at the entrance to the Open Space, and the provision of specially designed pavements advising cyclists to give priority to pedestrians.</p>	
18. Promotion of Walking	Ongoing from 2002 for the duration of the AQAP.	<p>a) Walking Strategy now adopted and in the transport Local Implementation Plan. The council continues to promote walking as a viable means of travel through the provision of further improvements to facilities for pedestrians. This includes consideration of streetworks guidance, further traffic management measures i.e. Home Zones and a range of other measures aimed at providing an environment that is accessible, and highly conducive to the needs of all pedestrians.</p>	<p>a) The council promoted the 'Walking Works' activities, with again more than 1,000 individuals taking part. We also promoted walking at the Grand Union Canal Fest.</p> <p>Council Road Safety Officers visit infant, junior and secondary schools throughout the borough to raise awareness of road safety and provide training. 17,010 pupils have received road safety education from the team in the last 3 years.</p> <p>We also completed the first stage of pedestrian signing in the Borough by erection of TfL's Legible London type signage in Shepherd's Bush town centre.</p>	<p>a) The Borough continues to work extensively on de-cluttering the street environment in Hammersmith and Fulham. This has led to the (net) removal of 618 bollards, 19 illuminated bollards, 218 sign posts and 11 signs in 2011/12. "Legible London" signage has been installed in Hammersmith Town Centre. One pelican crossing converted to puffin (giving more time to cross to those who need it).</p> <p>Walking promotion schemes such as "Walk on Wednesdays" were active in 28 schools in 2011/12 and 1 business led scheme was implemented with the Hammersmith Business Improvement District. 12 other smarter travel events were held in the borough where walking was promoted.</p> <p>32 road safety education/training sessions were conducted with schools. In addition, 617 Nursery Children were given an introduction to road safety. An innovative road safety course was held for Children with special Needs at Paray House School. This was supplemented by a range of road safety awareness/enforcement events with other agencies.</p>

## Hammersmith & Fulham Council

Action Plan Measure	Original Timescale	Previously reported Progress	Previously Reported Outcomes	New Progress, Outcomes and Additional Comments for 2011/12
19. Encourage a reduction in car use for the journey to school	Ongoing from 2002 for the duration of the AQAP	a) Funding for the Travel Plan Co-ordinator post has been extended. Continued to promote school travel plans through the work of the Travel Plan Co-ordinator and encourage cycling/walking to school through highways improvements and improved facilities at schools (e.g. better bike shed storage).	<p>a) Not including independent nurseries (which do not have to do travel plans) a total of 72 schools (97%) have school travel plans (STPs), with 49 (66%) of these currently 'valid' (i.e. active and annually reviewed). One further school is engaged in the process and aiming for STP approval in 2011. Only one school in the borough never produced a STP.</p> <p>Over 20,000 pupils surveyed at 74 schools shows the following modal shift over the last 6 years:</p> <ul style="list-style-type: none"> <li>• Car use down from 21% to 16%</li> <li>• Cycling/scootering up from 5% to 10%</li> <li>• Walking level constant at 39%</li> <li>• Public transport constant at 32%</li> </ul>	<p>Not including independent nurseries (which do not have to do travel plans) 73 of 76 schools (96%) have school travel plans (STPs), with 49 (66%) of these currently 'valid' (i.e. active and annually reviewed).</p> <p>One new school (West London Free School) is engaged in the process and aiming for STP approval in 2012; and two schools have never engaged: Hurlingham &amp; Chelsea and Hammersmith Academy.</p> <p>12 schools are currently in the process of reviewing their STPs, and 12 schools appear to have abandoned their STPs.</p> <p>Over 20,000 pupils surveyed at 74 schools shows the following modal shift over the last 7 years:</p> <ul style="list-style-type: none"> <li>• Car use down from 21% to 16%</li> <li>• Cycling/scootering up from 5% to 10%</li> <li>• Walking level constant at 39%</li> <li>• Public transport constant at 32%</li> </ul> <p>STAR (School Travel Accredited and Recognised) – this award scheme was improved and put online this year and has resulted in a tripling of STAR accredited schools in H&amp;F since last year:            2007: 5 accredited schools            2008: 4 accredited schools            2009: 1 accredited school            2010: 4 accredited schools            2011: 15 accredited schools            2012: 44 accredited schools</p>
20. Encourage a reduction in car use for the journey to work and business trips	Ongoing from 2002 for the duration of the AQAP	a) As above: Funding for the Travel Plan Co-ordinator post has been extended.	<p>a) By 2009/10, 78 workplace travel plans were listed on iTrace for the borough. 24 workplace travel plans were initiated or reviewed in 2010/11. The first 4 voluntary workplace travel plans had also been completed.</p> <p>A Travel Plan business network is developing in Hammersmith Town Centre.</p>	a) See measure 3.
21. Control provision of on and off street parking to deter car commuting into and within	Ongoing – parking best value review to be complete by mid 2003	a) On street parking controls extended and now there are Controlled Parking Zones in all but the far north of the borough. The council monitored the effects of the congestion charge western extension on parking demand in the borough and subsequently made changes in November 2008 to	a) Sunday controls were introduced in the areas near Westfield in December 2008 and further strengthening of controls were introduced in December 2010. Work in the past year has also concentrated on improving the enforceability of existing controls.	a) Double yellow lines implemented across all informal crossing points with dropped kerbs in the borough's largest CPZ (Zone V). Stakeholders of CPZs V, B and C were consulted on parking controls in 2011/12. The smart visitor permit was introduced in Zone V to provide discounted parking for residents and visitors

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Action Plan Measure	Original Timescale	Previously reported Progress	Previously Reported Outcomes	New Progress, Outcomes and Additional Comments for 2011/12
the borough		deter commuter parking.  b) Off street parking controlled by parking standards in the revised UDP.	b) Parking standards applied to new developments to ensure adequate provision without increasing 'parking stress'.	and Richmond Way (in Zone B) opted for extended parking controls. Parking consultations carried out in CPZs V, B and C in order to gauge whether stakeholders want extended parking controls as a mechanism of controlling parking stress and the availability of parking spaces.  b) Parking standards continue to be applied and new policies are being drafted for the council's LDF.
22. Encourage freight to be transported in a sustainable manner	2004	a) The council continues to work with the West London Freight Quality Partnership with a view to improving sustainability in the freight transport sector.  b) Peter Brett Associates were commissioned to carry out a general freight study and a Home Delivery Scheme feasibility study.  c) As part of the Clear Zone project, a survey is being carried out into demand for sustainable home deliveries in the Brook Green / Addison wards.	a) The council started planning a freight/delivery map for Hammersmith & Fulham together with the Metropolitan Police. A pilot map for North End Rd will be produced with the aim of reducing congestion and accidents. The Council is now a member of FORS (Freight Operators Recognition Scheme) and we encourage the development of Servicing and Delivery Plans and the use of rail and water for freight via the planning process.  b) The home delivery scheme is included in the WLFQP three year programme; we will follow this up together with the partnership.  c) 3 bicycle rickshaws have been purchased for potential use in such a scheme. Rickshaws have already been used by the council to transport mail/ goods and for local school deliveries.	a) Waiting and loading reviews are ongoing boroughwide (Zones H,Q,T and North End Road in particular).  b) As previously reported.  c) As previously reported. The freight rickshaw tricycle is currently used by Hammersmith BID.
<b>MAKING MORE EFFICIENT USE OF ROAD TRANSPORT</b>				
23. Encourage car sharing	From Summer 2003 onwards	a) Signed up to SWELTRAC and WLTS 'Share the Car' scheme. Car clubs are starting to set up in the borough with cars stationed at a number of key locations.	a) Share the car software installed Spring 2004. Car share scheme is up and running. 2 Car Clubs operate in Hammersmith & Fulham: City Car Club, and Zipcar (now incorporating Streetcar). 4 on-street car club bays have been installed as a pilot scheme.	a) There are now 45 on-street car club parking bays in the borough.
24. Discourage short journeys	From Summer 2003 onwards	a) See 21 above. Also participated in regular annual events such as the West London Green Festival and the Good Going week where information and advice on other forms of transport has been made available.	a) The "small zone" system mentioned under action 21 discourages intra-borough car journeys. Discouragement of short journeys is at the heart of the travel planning process. The school travel planning process has generated a positive modal shift with fewer short journeys being reported.	a) As previously reported. See also updates for measures 19, 20 and 21.
<b>OTHER MEASURES TO REDUCE ROAD TRAFFIC AND EMISSIONS</b>				

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Action Plan Measure	Original Timescale	Previously reported Progress	Previously Reported Outcomes	New Progress, Outcomes and Additional Comments for 2011/12
25. Reduce the amount of road traffic in residential areas and town centres	Ongoing from 2002 for the duration of the AQAP	a) Continued implementation of Home Zones and pedestrianisation schemes. A bid for funding from TfL has been made in the council's BSP to set up other Home Zone schemes in other parts of the borough.  b) The UDP no longer has policies/standards on plot ratio and density – these expired in September 2007. We rely on London Plan for density and plot ratio.	a) There are now 16 20mph zones in the borough. The innovative "drive over chicane" in the North End Road East zone was Highly Commended at the London Transport Awards 2009. An innovative 20mph zone without physical measures was piloted in 2010/11 in the Wendell Park area.  b) The relevant London Plan policies are applied as and when appropriate.	a) The Wendell Park scheme has now been fully implemented, increasing the number of 20mph zones in the borough to 17.  b) The council's draft Development Management DPD includes a policy on car parking standards aimed at reducing additional car travel and encouraging more sustainable travel methods.
26. Promote the use of trees to help improve local air quality	Work on the Biodiversity Action Plan will begin in early 2003	a) The Biodiversity Action Plan (BAP) was adopted in May 2004. The UDP also has a tree planting policy which seeks to ensure that the council will endeavour to plant new trees whenever possible and will expect developers to plant trees where appropriate.	a) In 2010/11, a total of 371 trees were planted. Planting in new developments continues as previously reported. For some development sites, where planting etc is planned as part of the soft landscaping developers may be advised to investigate the use of vegetation/trees as a barrier helping to filter out pollution.	a) In 2011/12, 98 new 145 replacement street trees were planted. In addition, the council planted 51 new and 31 replacement standard trees on Housing estates; 28 new and 1 replacement tree in Parks. This is a total of 111 trees on non highway sites.
27. Reduce the amount of traffic on the A4 and A40	From Summer 2003	a) Previously liaised with GLA/TfL on this issue to clarify if the A4 and A40 are regarded as priority roads for traffic reduction measures. TfL are concentrating on their 'network management duty' which relates more to keeping traffic moving rather than reducing traffic flows.	a) Partner in a bid for 'Greening the A4' project funding with Hounslow, Kensington & Chelsea and others. Bid includes travel demand management, alternative fuels, and road safety measures. However, no funding available to implement.	a) No further action in this area.
<b>MEASURES TO RAISE AWARENESS OF THE LINKS BETWEEN AIR QUALITY AND HEALTH</b>				
28. Provide information to allow people to make informed choices about travel behaviour	From Summer 2003 onwards	a) Produced 'Drive Down Pollution' leaflet on cutting pollution from car use and other publicity material. Also signed up to the London AirTEXT service.	a) As previously reported. AirTEXT information distributed and presentations given to school nurses group and local Breathe Easy group.	a) As previously reported. 140 Hammersmith & Fulham residents have now signed up for AirTEXT pollution alerts.
29. Provide information so people can make informed choices about reducing pollution from domestic activities	From Summer 2003 onwards	a) Originally intended to combine information on pollution from domestic activity with pollution from car use, but these 2 issues were separated.	a) A leaflet on cutting pollution from car use was produced, but production of domestic emissions information leaflet was delayed and not carried out.	a) No new publicity material produced.
30. Continue to monitor and make info. available	Ongoing from 2002 for the duration of the AQAP	a) Monitoring continues to be carried out in the borough, with the focus on the 2 key pollutants of NO2 and PM10.	a) During 2010/11, the annual NO2 objective was exceeded at 5 sites out of 10, mainly at the roadside sites. No PM10 monitoring took place during 2010/11.	a) Real-time monitoring of NO2 and PM10 re-started in Oct. 2011 at a new monitoring site at Shepherds Bush Green. Detailed information on monitoring results is included in the council's annual Air Quality report.

