Contents

Executive Summary

The Annual Progress report is part of the ongoing review and assessment of air quality which is required under Part IV of the Environment Act 1995. This report follows on from the Detailed Assessment carried out by Casella Stanger in April 2004.

The main aim of the Progress Report is to report progress on local air quality management within a local authority's area and progress in achieving the Air Quality Objectives. Progress reports have been introduced to provide a more continuous approach to LAQM. Updating and Screening assessments are now required every three years with Annual Progress reports to be produced in the years between to supplement this.

During 2004 Dartford Borough Council continued to operate a network of air quality monitoring. The monitoring results are detailed in this report.

In general results of NO2 and PM10 remain high as in previous years. Much of the monitoring is carried out within the existing AQMA, the results of this show that pollutant levels within this area continue to be above the Air Quality Objectives. Mean levels of NO_2 of 35.2 – 41.4 $\mu g/m^3$ have been recorded in 2004 at the two urban background sites. Levels of benzene monitored at two locations across the borough have continued to fall

The majority of monitoring carried out within the borough of Dartford is at locations classified as being roadside, and consideration should be given that these results do not indicate the levels of exposure at the nearest receptor to the pollution source.

1. Introduction

The Environment Act 1995 introduced a system of local air quality management (LAQM), placing new legal duties on local authorities to assess the air quality in their area, and a requirement for the Government to publish a National Air Quality Strategy containing air quality targets which would protect people's health.

The National Air Quality Strategy (NAQS)[1] was published in 1997 and has since been revised in 2000. The Strategy contains standards and objectives for eight air pollutants; nitrogen dioxide (NO_2), sulphur dioxide, carbon monoxide, fine particles (PM_{10}), ozone, lead, 1,3-butadiene and benzene. Local authorities have a responsibility to assess levels of these pollutants, with the exception of ozone, and implement measures to reduce pollution where objectives are not met by the target deadlines which range from 2003 to 2010. Objectives included in the Air Quality Regulations 2000 and (Amendment) Regulations 2002 which will need to be assessed for the purpose of local air quality management are shown in Table 1.

Table1:

Pollutant	Objective		Date to be achieved by
	Concentration	Measured as	
Benzene	5 ppb 1.5ppb	Running annual mean Annual mean	31 December 2003 31 December 2010
1,3-butadiene	1 ppb	Running annual mean	31 December 2003
Carbon monoxide	10mg/m3(8.6 ppm)	Maximum daily running 8 hour mean	31 December 2003
Lead	0.5μg/m^3 0.25μg/m^3	Annual mean Annual mean	31 December 2004 31 December 2008
Nitrogen dioxide*	200μg/m^3 * not to be exceeded more than 18 times a year 40μg/m^3*	1 hour mean annual mean	31 December 2005 31 December 2005
Fine particles (PM_{10})	50μg/m^3 not to be exceeded more than 35 times a year 40μg/m^3 20μg/m^3	24 hour mean Annual mean Annual mean	31 December 2004 31 December 2004 31 December 2010
Sulphur dioxide	100 ppb not to be exceeded more than 35 times a year 47 ppb not to be exceeded more than 3 times a year 132 ppb not to be exceeded more than 24 times a year	15 minute mean 24 hour mean 1 hour mean	31 December 2005 31 December 2004 31 December 2004

ppb = parts per billion, ppm = parts per million, μg/m^3 = micrograms per cubic metre.
* These are provisional objectives. EU Limit values for nitrogen dioxide are to be met by 2010.

Local authorities must review and assess current and projected pollutant levels and where it appears the Objectives will not be met by the designated time they must declare an Air Quality Management Area (AQMA) and draw up action plans to meet the Objectives.

1 DoE (1997) The United Kingdom National Air Quality Strategy The Stationary Office

1.1 Summary of Review and Assessment

The First Round of Review and Assessment:

Dartford Borough Council carried out its first round of review and assessment of air quality between 1998 and 2002. This was concluded in the requirement for the declaration of an Air Quality Management Area (AQMA) for nitrogen dioxide (NO_2) and fine particles (PM_{10}) along the A282 Tunnel Approach Road.

The Second Round of Review and Assessment:

The Second Round commenced in 2003. The first phase of this was the Updating and Screening Assessment (USA). Dartford Borough Council completed this in May 2003, with the conclusion that a Detailed Assessment was required for nitrogen dioxide (NO_2) in Dartford Town Centre (Highfield Road/Instone Street), along the A226 London Road (through Greenhithe and Swanscombe), the A206 University Way. Five heavily trafficked junctions with nearby relevant exposure also required to be considered:

1) Bean Interchange
2) A226/B255 St Clement's Way
3) A226 East Hill/Park Road
4) A226 The Brent/Watling Street/St Vincents Road
5) A225 Lowfield Street/Princes Road.

A Detailed Assessment of fine particulates (PM_{10}) was also required at the busy A226/B255 St Clement's Way junction in Greenhithe.

This Detailed Assessment was completed in May 2004 which focussed on the areas highlighted in the USA, It has been recommended that Dartford Borough Council consider declaring Air Quality Management Areas (AQMA) on the basis of the potential exceedences in the assessment areas.

1.2 Scope and Methodology of the Progress Report

Progress reports have been introduced into the LAQM

The main aim of the Progress Report is to report progress on local air quality management within a local authority's area and progress in achieving the Air Quality Objectives. Progress reports have been introduced to provide a more continuous approach to LAQM. Updating and Screening assessments are now required every three years with Annual Progress reports to be produced in the years between to supplement this.

Progress reports are intended to assist local authorities by:

- By helping to retain a profile for LAQM within the authority, including the retention of staff with a knowledge of air quality issues
- By providing a means for communicating air quality information to members and the public
- By maximising the usefulness and interpretation of the monitoring effort being carried out by the local authority
- By maximising the value of the investment in monitoring equipment
- By making the next round of review and assessment that much easier, as there will be a readily available up to date source of information
- By helping local authorities respond to requests for up-to-date information on air Quality
- By providing information to assist in other policy areas, such as transport and land use planning
- providing a ready source of information on air quality for developers carrying out environmental assessments for new schemes
- demonstrating progress with implementation of air quality Action Plans and/or air quality strategies
- providing a timely indication of the need for further measures to improve air quality, rather than delaying until the next full round of review and assessment.

The Progress Report is structured as follows in accordance with the Checklist2 provided in Progress Report Guidance (LAQM. PRG (03)):

1. **New Monitoring Results**
2. **New Local Developments**
3. **Action Plans (where appropriate)**
4. **Planning and Policies**
5. **Local Transport Plan and Strategies**

2. New Monitoring Results

2.1 Continuous Monitoring Data.

Dartford Borough Council has three roadside air quality monitoring stations within the Borough located at: the A226/B255 St Clement's Way junction; Bean Interchange; and, Instone Street in Dartford Town Centre, which were installed in June 1999 to more accurately assess levels of NO_2 and PM_{10}. The monitoring results for 2002 to 2004 for these sites are shown in Table 2 (the data capture for all sites is >95%).

The stations are calibrated fortnightly in-house and Kent and Medway Air Quality Monitoring Network (KMAQMN) managers, Kings College Environmental Research Group (ERG), ratify the data. The quality assurance/quality control (QA/QC) procedures for the KMAQMN are equivalent to the UK Automatic Urban and Rural Network (AURN) procedures. The manufacturers of the equipment, Enviro Technology Services plc, service the station on a six monthly basis.

The locations of these air quality stations can be seen on the map in appendix A2.

The Bean roadside continuous nitrogen dioxide data has been used with the co-located diffusion tube data to estimate the bias adjustment factor for the diffusion tubes as shown in table 5.

The results are presented in tables 2 and 3 and are displayed graphically in figure 1 and 2. Projected values have been calculated using the methodology given in LAQM. TG(03).

This data has been fully ratified by Kings College Environmental Research Group (ERG).

These continuous monitoring air quality stations are located at roadside locations and are in areas that have been identified in the Detailed Assessment Report as areas with predicted exceedences of air quality objectives. These areas are therefore proposed to be declared as Air Quality Management Areas.

Table 2: **NO2 continuous analyser concentrations 2002 - 2004**

Dartford 1 – St Clements Way Greenhithe						
	Objective	2002 NO_2	2003 NO_2	2004 NO_2	*2005 NO_2	*2010 NO_2
Exceedences of 200 µg/m^3	No more than 18 occurrences of hourly mean >200 µg/m^3	**27**	**36**	**37**	**-**	**-**
Annual Mean	Annual mean not exceeding 40ug/m3	**60**	**66**	**60**	**58**	**48**
Data Capture	%	95	99	99	-	-

Dartford 2 - Town Centre						
	Objective	2002 NO_2	2003 NO_2	2004 NO_2	*2005 NO_2	*2010 NO_2
Exceedences of 200 µg/m^3	No more than 18 occurrences of hourly mean >200 µg/m^3	**0**	**2**	**0**	**-**	**-**
Annual Mean	Annual mean not exceeding 40ug/m3	**48**	**56**	**56**	**55**	**45**
Data Capture	%	11	99	99	-	-

Dartford 3 - Bean Interchange						
	Objective	2002 NO_2	2003 NO_2	2004 NO_2	*2005 NO_2	*2010 NO_2
Exceedences of 200 µg/m^3	No more than 18 occurrences of hourly mean >200 µg/m^3	**0**	**1**	**1**	**-**	**-**
Annual Mean	Annual mean not exceeding 40ug/m3	**50**	**60**	**62**	**60**	**50**
Data Capture	%	12	95	95	-	-

Table 3: **PM10 continuous analyser concentrations 2002 - 2004**

Dartford 1 – St Clements Way Greenhithe						
	Objective	2002	2003	2004	*2005	*2010
Exceedences of 50 $\mu g/m^3$	No more than 35 days where daily mean > 50 $\mu g/m^3$	**142**	**129**	**139**		
Annual Mean	Annual Mean less than 40$\mu g/m^3$	**53**	**50**	**49**	**48**	**43**
Data capture		86	98	97		

Dartford 2- Town Centre						
	Objective	2002	2003	2004	*2005	*2010
Exceedences of 50 $\mu g/m^3$	No more than 35 days where daily mean > 50 $\mu g/m^3$	**12**	**90**	**84**		
Annual Mean	Annual Mean less than 40$\mu g/m^3$	38	**43**	**41**	**40**	37
Data capture		**14**	95	95		

Dartford 3 - Bean Interchange						
	Objective	2002	2003	2004	*2005	*2010
Exceedences of 50 $\mu g/m^3$	No more than 35 days where daily mean > 50 $\mu g/m^3$	4	**74**	**72**		
Annual Mean	Annual Mean less than 40$\mu g/m^3$	30	39	39	38	35
Data capture		**12**	97	95		

Figure 1: Nitrogen Dioxide Annual mean in µg/m^3 at Dartford Air Quality Stations.

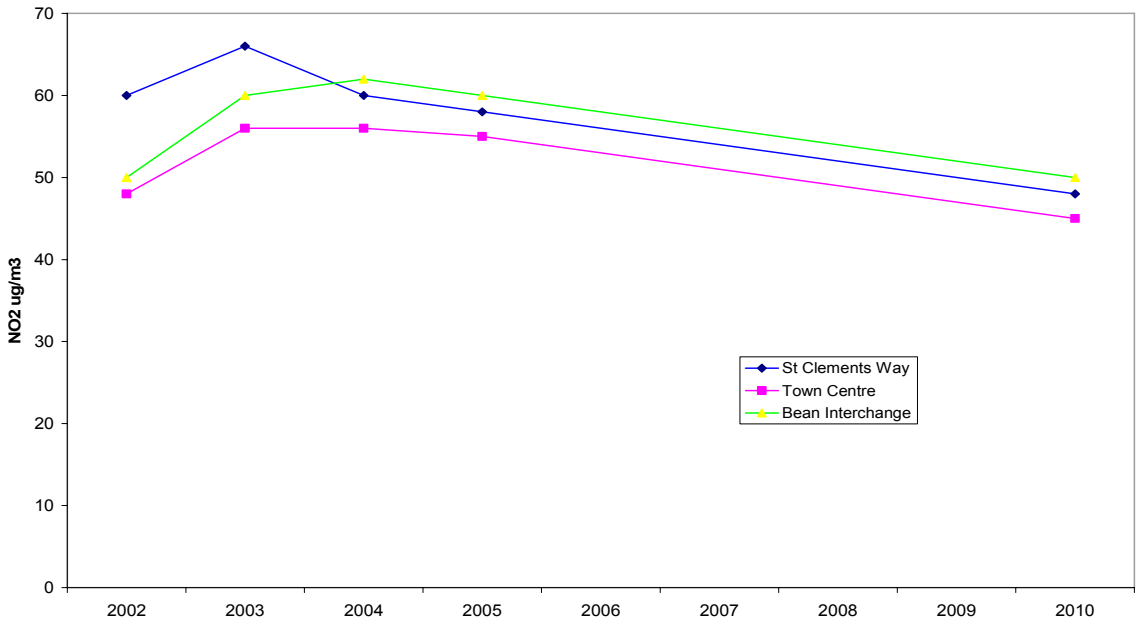
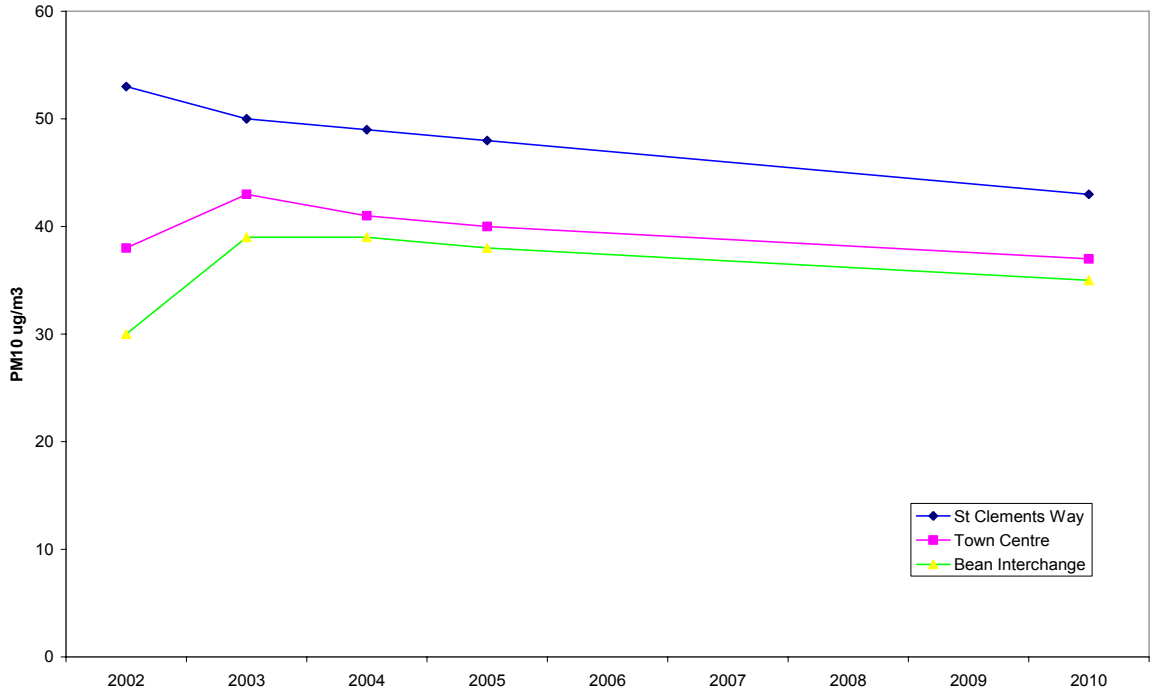


Figure 2: PM10 Annual mean in µg/m^3 at Dartford Air Quality Stations.



2.2 Passive Monitoring Data

Dartford Borough Council currently has a network of diffusion tubes across the borough consisting of 20 NO2 diffusion tubes. These tubes are supplied and analysed by Gradko and are prepared using the 50% Triethanolamine in acetone method.

Gradko International participates in the UK National Diffusion Tube Network and the Workplace Analysis Scheme for Efficiency (WASP). They currently hold UKAS accreditation for analysis of diffusion tubes and consistently achieve the highest performance level in annual field inter-laboratory performance comparisons. Details of the Quality Assurance can be found in appendix C1 and C2

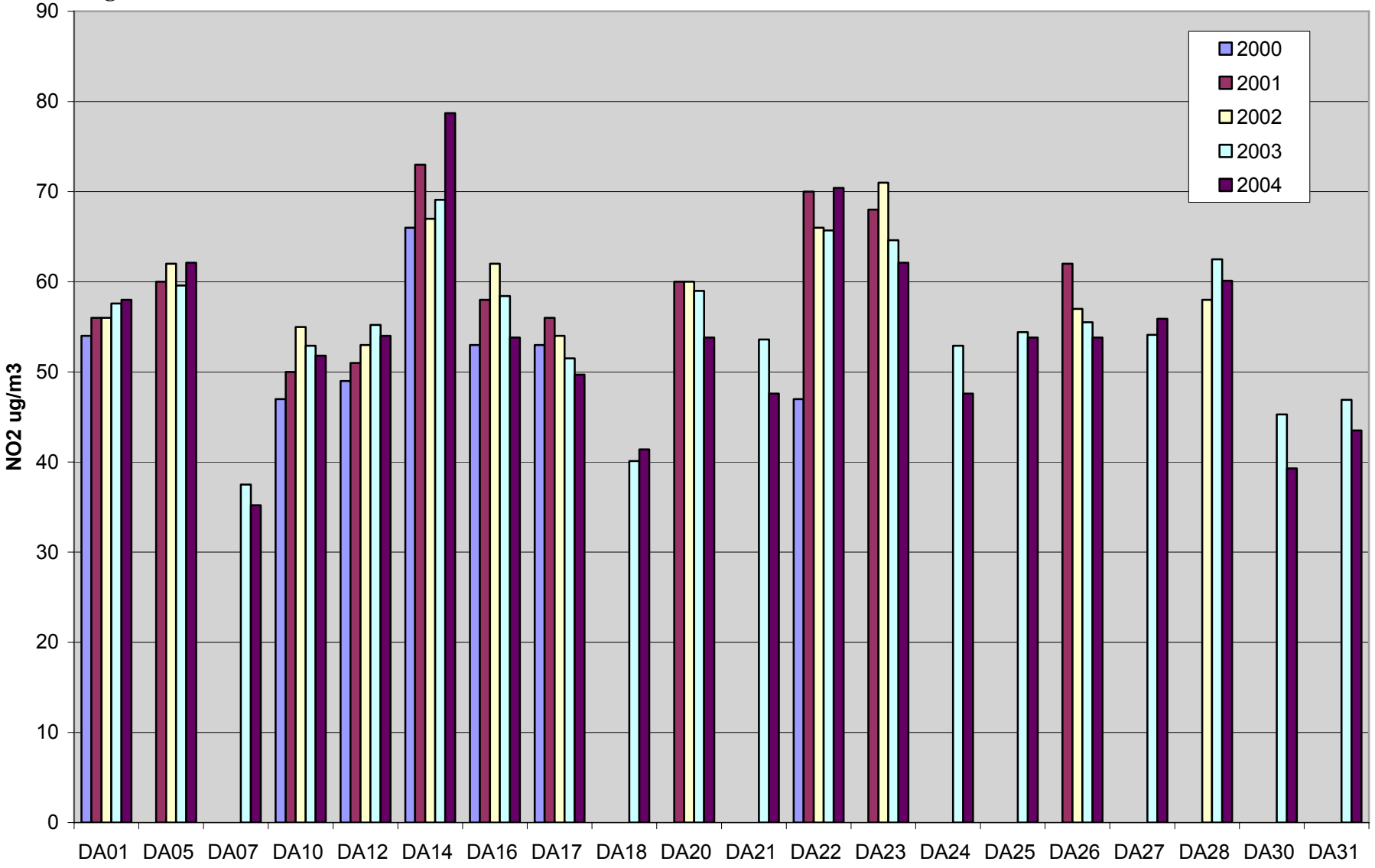
These diffusion tubes have been co-located in triplicate with the continuous analyser at Bean Interchange. The co-location exercise has produced a bias factor which has been applied to the raw diffusion tube results. The results of this exercise can be seen in table 5.

The results of these can be seen in table 4 together with results from previous years. These results are also graphically displayed in figure 3. The data has been projected for 2005 using the methodology given in LAQM. TG(03).

There are two urban background diffusion tube sites that show (bias corrected) annual mean levels of NO_2 of 35.2 – 41.4 $\mu g/m^3$ in 2004.

Table 4:	Nitrogen Dioxide Diffusion Tube Data											
Site ID	**X**	**Y**	**Location**	**Site Type**	**Annual Mean NO_2 2000 in µg/m^3**	**Annual Mean NO_2 2001 in µg/m^3**	**Annual Mean NO_2 2002 in µg/m^3**	**Annual Mean NO_2 2003 in µg/m^3 (uncorrected)**	**Annual Mean NO_2 2003 in µg/m^3 (bias corrected)**	**Annual Mean NO_2 2004 in µg/m^3 (uncorrected)**	**Annual Mean NO_2 2004 in µg/m^3 (bias corrected)**	**Projected Mean NO_2 2005 in µg/m^3**
DA01	554187	173985	Lowfield Street	R	54	56	56	57.0	57.6	53.2	58.0	56.5
DA05	558578	172821	Ightham Cottages	R		60	62	59.1	59.6	57	62.1	60.5
DA07	550750	171918	Summerhouse Drive	B				37.1	37.5	32.3	35.2	34.5
DA10	559189	174872	London Road	R	47	50	55	52.4	52.9	47.5	51.8	50.5
DA12	553282	175351	University Way	R	49	51	53	54.6	55.2	49.5	54.0	52.6
DA14	555484	174441	Bow Arrow Lane	AQMA	66	73	67	68.4	69.1	72.2	78.7	76.7
DA16	554108	173318	Princes Road (2)	R	53	58	62	57.8	58.4	49.4	53.8	52.5
DA17	552732	173689	Shepherds Lane	R	53	56	54	51.0	51.5	45.6	49.7	48.5
DA18	560298	174282	Alkerden Lane	B				39.7	40.1	38	41.4	40.6
DA20	555660	174863	Elliot Road	AQMA		60	60	58.4	59.0	49.4	53.8	52.5
DA21	555501	174005	Brentfield Road	AQMA				53.0	53.6	43.7	47.6	46.4
DA22	555600	174030	Brent Way	AQMA	47	70	66	65.1	65.7	64.6	70.4	68.6
DA23	555751	173900	The Brent	AQMA		68	71	64.0	64.6	57	62.1	60.5
DA24	555632	173558	Wayville Road	AQMA				52.4	52.9	43.7	47.6	46.4
DA25	555795	173210	Queens Gardens	AQMA				53.8	54.4	49.4	53.8	52.5
DA26	555880	173365	Princes Road (3)	AQMA		62	57	54.9	55.5	49.4	53.8	52.5
DA27	555718	173805	Fairway Drive	AQMA				53.5	54.1	51.3	55.9	54.5
DA28	558460	174671	Ivy Villas	R			58	61.8	62.5	55.1	60.1	58.6
DA30	557887	175001	Charles Street	R				44.8	45.3	36.1	39.3	38.3
DA31	561215	174898	London Road (2)	R				46.4	46.9	39.9	43.5	42.4

Figure 3: NO2 Diffusion Tube Annual Mean 2000- 2004



Calculation of Bias and Period Mean Adjustment.

To take account of the bias in the diffusion tubes analysed by Gradko International Limited, an assessment has been made of data from the Bean Roadside site which has triplicate co-located diffusion tubes and >10 months of data capture. The methodology outlined in the Technical Guidance LAQM.TG (03) has been used in the calculation of the bias adjustment factor.

Table 5:

Bias Adjustment Factor 2003

Site ID	**Location**	**Annual mean NO_2 ($\mu g/m^3$) continuous analyser**	**Annual mean NO_2 ($\mu g/m^3$) diffusion tubes**	**Bias adjustment factor**
DA1 (ZR3)	Bean Interchange roadside	60.0	59.2	1.01

Bias Adjustment Factor 2004

Site ID	**Location**	**Annual mean NO_2 ($\mu g/m^3$) continuous analyser**	**Annual mean NO_2 ($\mu g/m^3$) diffusion tubes**	**Bias adjustment factor**
DA1 (ZR3)	Bean Interchange roadside	62.1	57	1.09

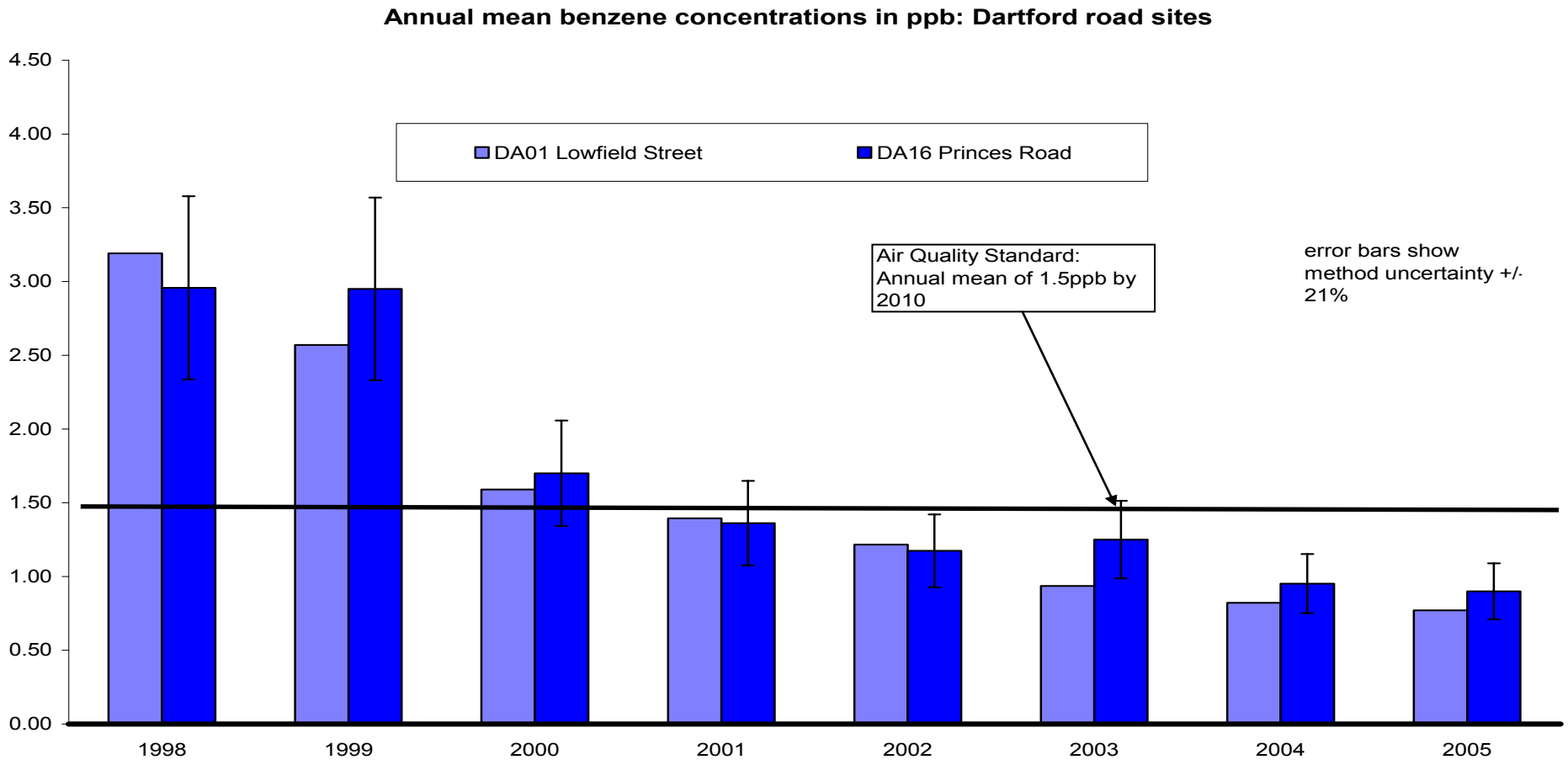
In addition to the NO2 diffusion tubes Dartford Borough Council also operates two benzene diffusion tubes. These are also supplied and analysed by Gradko. They consisist of a steel/ brass constructed tube that is designed to sample air diffusively at low speeds. The limit of detection for these tubes is 0.2ppb and the precission is + 20%. The Benzene tubes are exposed for periods of 1 month and an exposure time in hours is calculated.

Table 6:

Annual mean (ppb)		
	DA01 Lowfield Street	DA16 Princes Road
1998	3.19	2.96
1999	2.57	2.95
2000	1.59	1.70
2001	1.39	1.36
2002	1.22	1.17
2003	0.94	1.25
2004	0.82	0.95
2005	0.77*	0.9*

*Figures for 2005 have been predicted using the methodology as defined in LAQM.TG(03).

Figure 4:


Annual mean benzene concentrations in ppb: Dartford road sites
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
DA01 Lowfield Street
DA16 Princes Road
Air Quality Standard:
Annual mean of 1.5ppb by 2010
error bars show method uncertainty +/- 21%
1998
1999
2000
2001
2002
2003
2004
2005

2.3 Other Monitoring

Two portable particle monitors are also used in the borough of Dartford. These are Osiris monitors which are manufactured by Turnkey Instruments. The Osiris uses a light scattering technique to determine the concentration of fine particles passing through PM10 PM5 and PM2.5 impactors. The light scattered by the p articles in the sample air is converted into an electrical pulse proportional to the size of the particle. Results are expressed in µg/m3 with a resolution down to 0.01. The Osiris is serviced and calibrated by the manufacturer and on going maintenance is carried out in house.

One Osiris monitor is co located alongside a continuous BAM analyser at Ivy Villas Greenhithe. During 2004 the Osiris at Ivy Villas was out of action for a period of 6 months due to vandalism.

The second portable particle monitor has been located throughout 2004 in Bow Arrow Lane, within the existing Air Quality Management Area that exists along the A282 tunnel approach road. The results of this for years 2003 and 2004 can be seen graphically displayed in figure 6 which shows the 24 hour mean and a rolling annual mean. It can be seen from this that the levels of PM10 are consistently above the air quality objective at this location

figure 5:

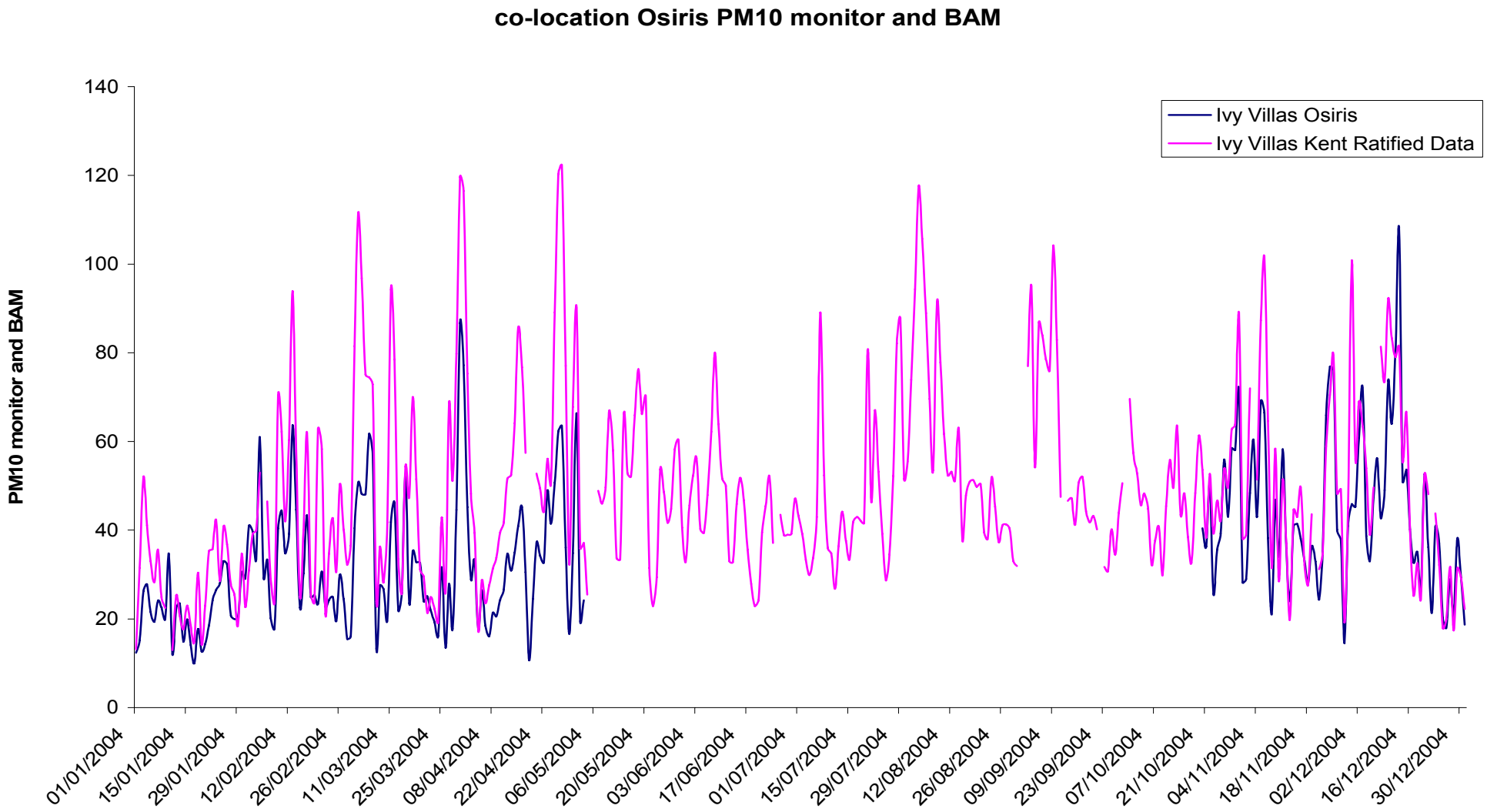
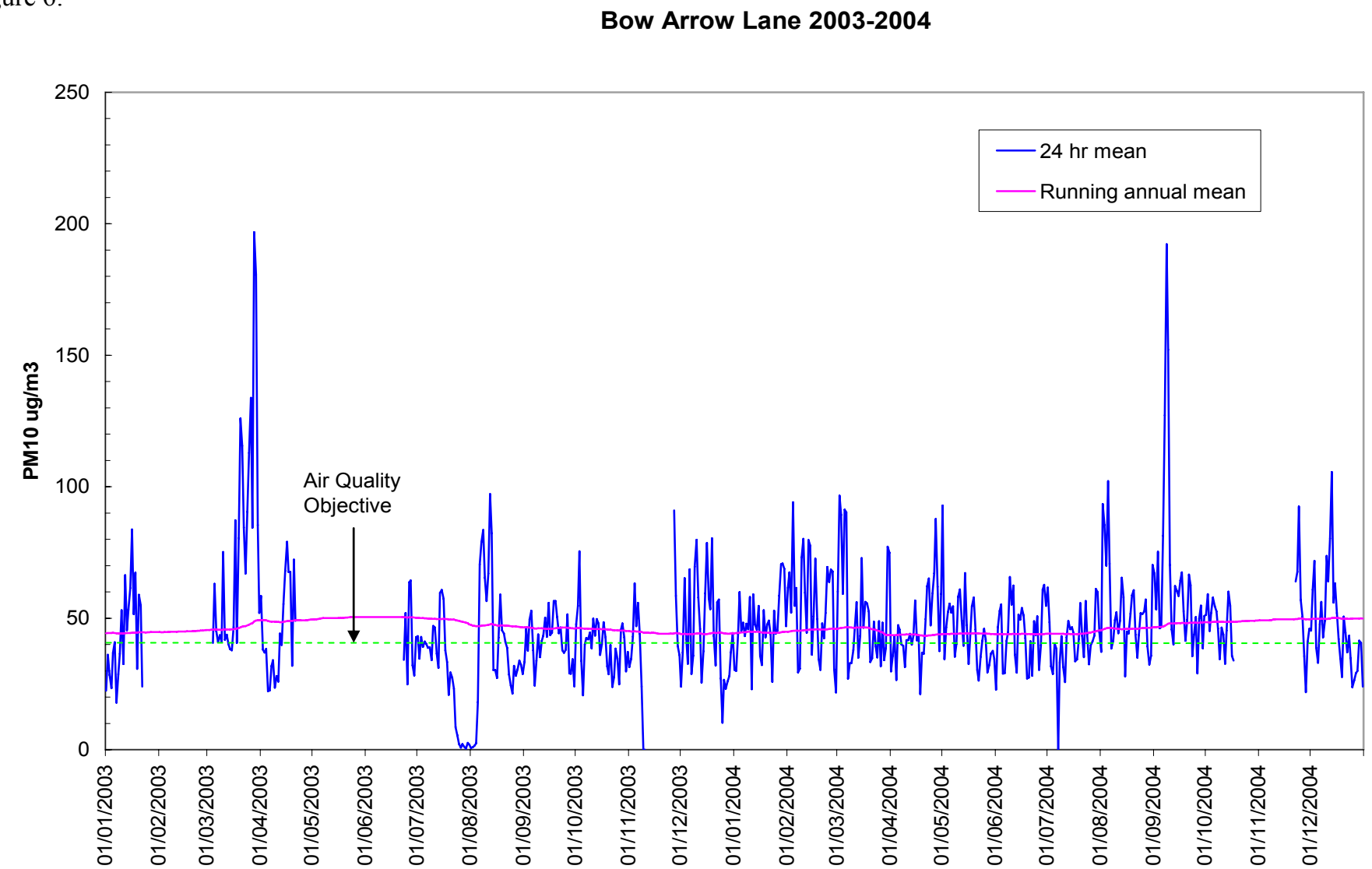

co-location Osiris PM10 monitor and BAM
PM10 monitor and BAM
Ivy Villas Osiris
Ivy Villas Kent Ratified Data
0
20
40
60
80
100
120
140
01/01/2004
15/01/2004
29/01/2004
12/02/2004
26/02/2004
11/03/2004
25/03/2004
08/04/2004
22/04/2004
06/05/2004
20/05/2004
03/06/2004
17/06/2004
01/07/2004
15/07/2004
29/07/2004
12/08/2004
26/08/2004
09/09/2004
23/09/2004
07/10/2004
21/10/2004
04/11/2004
18/11/2004
02/12/2004
16/12/2004
30/12/2004

figure 6:


Bow Arrow Lane 2003-2004
PM10 ug/m3
250
200
150
100
50
0
24 hr mean
Running annual mean
Air Quality Objective
01/01/2003
01/02/2003
01/03/2003
01/04/2003
01/05/2003
01/06/2003
01/07/2003
01/08/2003
01/09/2003
01/10/2003
01/11/2003
01/12/2003
01/01/2004
01/02/2004
01/03/2004
01/04/2004
01/05/2004
01/06/2004
01/07/2004
01/08/2004
01/09/2004
01/10/2004
01/11/2004
01/12/2004

3. New Local Developments

3.1 New industrial developments

There have been no new part A industrial processes since the Updating and Screening Assessment was carried out in 2003. A list of Part A industrial processes is included in Appendix D3 There have been no new Part B industrial processes that are regulated by Dartford Borough Council since the updating and screening assessment was carried out in 2003. There have however been several processes that are no longer in operation. These are four waste oil burners and one petrol filling station. A full list of Part B industrial processes is included in Appendix D1

There are no new quarrying or landfill operations that have been granted planning permission since the Updating and Screening Assessment.

3.2 New Developments

There have been several new developments that have been granted planning permission since the Updating and Screening Assessment was carried out in 2003 that have the potential to impact on air quality. These are:

- Waterstone Park phase 2, London Road Stone. Development of up to 450 residential units.

- DA/00/00607/OUT North Dartford, The Bridge, Land North of Joyce Green Lane, Dartford. Outline Application for a mixed-use scheme with a combination of employment uses, Science Park with Innovation Centre, local centre, primary school, leisure and recreational uses and up to 1,500 residential dwellings.

- DA/02/00808/OUT Site of Cascade Motors, Watling Street, Dartford. Erection of 48 dwellings.

- DA/03/01152/OUT Korsnas Site, Galley Hill Road Swanscombe, Application for 370 residential units.

Part of the Borough of Dartford is in the Kent Thameside area which has the potential to see between 30,000 and 50,000 new homes being created over the next twenty years. Many of the new developments in Dartford are part of the Kent Thameside regeneration area . Air quality has been considered in these developments which use traffic assessments derived using the Kent Thameside Association's Transport Model (KTS model).

One of the assumptions of this KTS model is a modal shift towards public transport. This modal shift relies in part on the development of a dedicated bus based transport system called Fastrack.

Fastrack is planned to ultimately connect nearly all of the major existing and new developments in Dartford. Construction began in September 2004 and phase 1 is due for completion in spring 2006

4. Update on Policies to improve Air Quality

4.1 Air Quality Action Plan Progress Update.

On the basis of findings of the stage 3 review and assessment an Air Quality Management area was declared along the A282 tunnel approach road. An action plan was drawn up and was approved for adoption by the General Assembly of the Council on 31/01/05.

The progress made with this action plan is detailed in the following summary tables:

SUMMARY OF EXISTING AND PROPOSED MEASURES: TABLE 1 Ranking 1 (Low) – 3 (High)	**RESPONSIBILITY**	**TARGET DATE (TIME SCALE)**	**RELATIVE AIR QUALITY IMPROVEMENT**	**PROGRESS**
A282 Tunnel Approach Road measures:				
Lobbying Central Government for national actions a) to c) on the A282	DBC, KCC	2002 (short term)	Dependant on outcome	DBC – no lobbying undertaken. KCC – situation unknown other than Local Transport Plan submission.
a) Improved existing rail freight infrastructure	Central government	Yet to be agreed (long term)	Removal 50% HGVs – up to 27% NO_2	No feedback to DBC
b) New rail freight infrastructure			as above	No feedback to DBC
c) New Lower Thames Crossing			Removal 25% flow – up to 15% NO_2	No feedback to DBC
Speed restriction and enforcement	HA, Kent Police	Yet to be agreed (short/ medium term)	50mph – up to 14%NO_2	Discussed with Highways Agency and Police but speed restrictions limited to safety criteria so no action.
Use of variable message signs	HA, Kent Police, KCC		**1**	Discussed with HA but no action.
Assessment of the impact of the toll system	HA, DRC		Dependant on outcome	No feedback
Improved screening	HA		Restricted benefits -up to 38% NO_2	Discussed with HA but no progress.
Borough wide measures:				
Planning policy:				
Local Plan Review adoption of policies on improving air quality	DBC	2004 (medium/longterm)	**1 - 2**	New policies within Local Plan Review but LP not adopted due to changes to Local Development Frameworks.
Transport Planning:				

***** = Cannot be determined without input from others

Public transport infrastructure improvements: Fastrack	KCC, DBC	2004 (medium) £15 million (Phase1)	**1 -2**	Progressing
SUMMARY OF EXISTING AND PROPOSED MEASURES : TABLE 2 Ranking 1 (Low) – 3 (High)	**RESPONSIBILITY**	**TARGET DATE (TIME SCALE)**	**RELATIVE AIR QUALITY IMPROVEMENT**	**PROGRESS**
Green transport initiatives:				
Development and implementation of a Council Travel Plan	DBC	2002 draft (short -medium term)	**1**	Issues into this are still being examined
Ad hoc advice to businesses on travel plans	DBC	2002 -3 (short term)	**1-2**	No progress
Encourage KCC to development and implement a Borough Transport Strategy	DBC	2002 draft (medium term)	**1-2**	Early discussions taking place.
Encouraging cleaner vehicles and quality partnerships with operators	DBC	2002 (medium term)	**2**	Being carried out (e.g. cleaner fuel technology for Fast Track)
Pollution controls for domestic emissions:				
Enforcement of statutory nuisance legislation	DBC	Ongoing	**1**	Being carried out
Home energy efficiency measures	DBC/KCC	Ongoing	**1**	Being carried out
Enforcement of Smoke Control Area	DBC	Ongoing	**1**	Being carried out
Bonfire leaflets and advice	DBC	Ongoing	**1**	Being carried out
Pollution controls for industrial emissions:				

Planning conditions and development controls	DBC	Ongoing	**2**	Being carried out
Licensing and enforcement of IPC and LAQM (IPPC) regulated processes	DBC/EA	Ongoing	**2**	Being carried out
Enforcement of statutory nuisance legislation	DBC	Ongoing	**1**	Being carried out
Local Air Quality Management:				
Review of air quality monitoring needs	DBC	Ongoing	**1**	Being carried out
Commitment to future air quality monitoring	DBC		**1**	In place.
SUMMARY OF EXISTING AND PROPOSED MEASURES : TABLE 3 Ranking 1 (Low) – 3 (High)	**RESPONSIBILITY**	**TARGET DATE (TIME SCALE)**	**RELATIVE AIR QUALITY IMPROVEMENT**	**PROGRESS**
Local Air Quality Management:				
Commitment to partnership working (action plan working group and KAQP)	DBC, KCC, HA, EA, LA's	Ongoing	**1**	Being carried out
Development and implementation of a local air quality strategy for Dartford	DBC	2002 draft (short term)	**1-2**	Not in place
Potential for regulatory vehicle emissions testing investigated	DBC	2002 (short term)	**1**	Not practicable

Energy management:				
Energy efficiency schemes domestic and commercial	DBC/KCC	Ongoing	**1**	Ongoing
Energy awareness	DBC/KCC	Ongoing	**1**	Ongoing
Building Control measures	DBC	Ongoing	**1**	Ongoing
Environmental promotion:				
Improved awareness and dissemination of air quality information, including development of the DBC web site	DBC	2002 -3 (short term)	**1**	In place, weekly updates
Ad hoc talks to schools on LA21	DBC	Ongoing	**1**	Infrequent but happening
Vehicle emissions testing- promotion of free testing locally.	DBC	2002 (short term)	**1**	No DBC vehicle emission testing but some prior promotion of vehicle testing.
Liaise with Health Authority on provision of information and advice on health effects	DBC, Health authority	2002 (short term)	**1**	Intended to do this via Kent & Medway Partnership but no progress.

4.2 Planning and Policies

New policies have been written into the Local Plan Review which will enable the Council to exercise more controls and require greater considerations from developers, and may ultimately limit the extent of development. As in all cases, planning applications have to be determined on merit and decisions will be subject to balancing the many policies that need to be applied.

The policies in the local plan review relating to air quality are as follows:

11.4.2aThe Clean Air Act 1956 enabled local authorities to reduce urban air pollution by controlling the domestic combustion of coal and requiring certain polluting industries to limit smoke emissions. There are many 'smoke control orders' covering most of the Borough. The main effect of the legislation is to limit emissions from domestic fires by the use of designated fire grates and approved smokeless fuels. The controls do not apply to bonfires. The Environmental Protection Act 1990 introduced a new method of controlling emissions from industrial premises. Certain industries
producing specified pollutants have to limit emissions to the air and the operators of those premises require an 'Authorisation' from the Council to operate which is in addition to planning permission. However, the impact of air quality from planned development is now a material planning consideration.

11.4.3 Air fit to breathe is essential to a clean and safe environment. Under the Environment Act 1995, local authorities are required to identify and tackle local air quality problems arising from seven key pollutants: benzene, 1,3 butadiene, carbon monoxide, lead, nitrogen dioxide, particles (PM10) and sulphur dioxide. The aim of the National Air Quality Strategy is to maintain and improve air quality, and the planning process has an important role in meeting this aim.

11.4.4 Controlling emissions from road traffic is problematic. Technological advances in clean fuels and emission control systems are only part of the long term solution to the problem and restraint on car use will become increasingly important. This underlines the importance of a sustainable strategy which encourages alternative forms of transport other than the car (see Transport chapter).

11.4.5 In areas where air quality standards cannot be met (or give cause for concern) by the prescribed dates, local authorities must declare Air Quality Management Areas. Within these areas, Action Plans will need to be devised and implemented with the aim of achieving the air quality standards. Local authorities have a duty to consider the air quality implications of proposed development and condition approvals or refuse applications accordingly.

11.4.6 *One Air Quality Management Area has been declared in Dartford Borough (as shown on the Proposals Map) and*, it is likely *possible* that Air Quality Management Areas *others may* will be declared in Dartford *the* Borough during the Plan period. Recent information suggests that poor air quality is not restricted to major roads such as the M25 and A2, but also affects local roads. Indeed, the impact needs to be measured in terms of exposure, and many residents already live alongside busy local roads. Along with legislation and Government guidance, the Local Plan enables this issue to be taken into account in the planning process.

11.4.7 There is also a danger that if the issue is viewed too narrowly, action to remedy poor quality air could have a perverse effect. New development will inevitably generate transport demands, and by diverting such development away from polluted central urban areas, journey lengths will be increased along with transport emissions.

11.4.8 However it is reasonable to expect new development proposals to be designed in a manner that minimises harmful emissions, by:
• being planned in a manner that encourages the use of alternatives to car travel;
• employing energy-efficient building design; and
• contributing to public transport infrastructure where appropriate.

11.4.9 The long term air quality situation will need to be taken into account, as well as the short and medium term (i.e. up to 6 years) air quality impacts of a development proposal.

NR10 Air Quality: Minimisation of Pollutants
Development proposals will only be permitted where *if*:
- they are sited and designed to minimise the emission of air pollutants and the impact of air pollutants on the local environment, *and*
- *they meet national air quality standards.*

NR11 Air *Quality* Impact Assessments
Development proposals that give rise to a potentially polluting activity, including the emission of dust, *must be* will only be permitted where they are accompanied by an assessment of the potential impact of the proposal on local air quality arising either from the operational characteristics of the development or the traffic generated by it, *and will only be permitted if those effects can be satisfactorily mitigated in accordance with National Air Quality Standards.*

NR12 Development in *Affecting* Air Quality Management Areas
Development *that is likely to have a material adverse impact* within an Air Quality Management Area will only be permitted if it can be demonstrated that the resulting long-term air quality situation will *be satisfactory, meet National Air Quality Standards* and that short and medium term impacts can be minimised to an acceptable level.

4.3 Local Transport Plan and Strategies.

Kent County Council has produced a Provisional Local Transport Plan for Kent 2006-2011. Air quality along with Accessibility Congestion and Road Safety are the four shared priorities of this plan. Policies have been drawn up to help deliver these shared priorities.

Policy ECH 1 for Air Quality states that 'KCC will work with partners to seek a reduction in pollution caused by traffic on the local road network'

5. Conclusions and recommendations.

There are nine NO2 diffusion tubes located within the current AQMA all of these have continued to show levels above the Air Quality Objective. It is recommended that the locations of the diffusion tubes within the existing AQMA are reviewed and in some cases moved away from the pollution source to provide further information on the drop off of pollution levels with distance from this source.

Due to the decrease in levels of benzene recorded at the two roadside sites over a period of seven years, it is proposed for one of these monitoring locations to be closed and the resources used to expand the network of NO2 diffusion tubes. The locations of these are to be in areas highlighted as having predicted exceedences in the previous detailed assessment and areas that have been identified as require consideration during the next Updating and Screening Assessment. One benzene diffusion tube is proposed to remain at Princess Road.

The majority of monitoring carried out within the borough of Dartford is at locations classified as being roadside, and consideration should be given that these results do not indicate the levels of exposure at the nearest receptor to the pollution source.

As a result of the findings of the Detailed Assessment Dartford Borough Council is to declare AQMAs in areas where exceedences of the air quality objectives have been predicted. Further monitoring will be required in these areas to confirm the findings of the Detailed Assessment. Action plans will be drawn up to try to minimise the effects of air pollution on human health.

6. Appendices

Appendix	
A1	Map showing location of continuous air quality monitoring stations.
A2	Map showing location of continuous air quality monitoring stations.
B	Map showing locations of the diffusion tubes with inset map showing locations within the existing AQMA.
C1	Quality assurance / Quality control information for Benzene diffusion tubes.
C2	Quality assurance / Quality control information for Nitrogen Dioxide diffusion tubes.
D1	Part B industrial processes regulated by Dartford Borough Council.
D2	Map showing the locations of Part B processes in Dartford.
D3	Part A Industrial Processes in the Borough of Dartford regulated by the Environment Agency.
D4	Map showing the location of Part A industrial Processes in Dartford.