



# **TONBRIDGE & MALLING BOROUGH COUNCIL**



## ***ENVIRONMENT ACT 1995 AIR QUALITY PROGRESS REPORT***



***APRIL 2008***



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## **1. INTRODUCTION**

Tonbridge and Malling Borough Council has prepared this Air Quality Progress Report to satisfy its duties under Part IV of the Environment Act 1995 (as amended) relating to local air quality management (LAQM). LAQM plays a key role in the Government's National Air Quality Strategy (NAQS) to achieve the air quality objectives for seven main air pollutants. This report provides the opportunity to review air quality results, identify long term trends and assess the effectiveness of actions to improve local air quality.

In 2004 Tonbridge and Malling was assessed under the Comprehensive Performance Assessment regime as an excellent authority. This status has subsequently been maintained. In accordance with the freedoms introduced for excellent rated authorities the Council has not prepared a separate Air Quality Action Plan Progress Report, but an update on the progress of the implementation of the Action Plan is included here. This is the second Progress Report prepared by the Council. It has been prepared in accordance with guidance LAQM.PRG (03).

## **2. AIR QUALITY MONITORING IN TONBRIDGE AND MALLING**

### **2.1 Monitoring Programme**

Air quality monitoring in Tonbridge and Malling is co-ordinated through the Kent and Medway Air Quality Monitoring Network (KMAQMN), which is part of the Kent and Medway Air Quality Partnership.

The current monitoring programme comprises twenty-six nitrogen dioxide diffusion tube sites. The nitrogen dioxide continuous monitoring site at Tonbridge High Street was closed in September 2004 when the use of the building in which it was located changed. A replacement site commenced operation in 2007.

Ozone and sulphur dioxide diffusion tubes were removed in 2003 as concentrations were considered unlikely to exceed the relevant air quality objectives by the target dates. The sulphur dioxide filter pack sampler located at Fairseat since 2001 as part of the Rural Sulphur Dioxide Monitoring Network was discontinued in February 2006 because the results could not be compared with short-term air quality objectives and indicated a continuing decline in rural background sulphur dioxide levels.

## 2.2 Review and Assessment Update

The Stage 1 (October 1998) and Stage 2 (March 1999) review and assessment showed, with the exception of PM<sub>10</sub> and nitrogen dioxide, that the NAQS pollutants of concern to health are predicted to meet the required standards by the objective target dates.

The Stage 3 and 4 review and assessment (October 2000) indicated that concentrations of PM<sub>10</sub> and nitrogen dioxide were unlikely to meet air quality objectives in the narrow corridor adjacent to the M20 between New Hythe Lane, Larkfield and Hall Road, Aylesford. The nitrogen dioxide annual mean objective was considered more stringent than the PM<sub>10</sub> 24-hour objective and therefore long-term monitoring has focussed on nitrogen dioxide.

An Air Quality Management Area (AQMA) was declared along this stretch of motorway in May 2001. This is referred to as the M20 AQMA. An Air Quality Action Plan (February 2003) was prepared jointly with Maidstone Borough Council, which has similar issues relating to the M20 in its area.

The Updating and Screening Assessment (May 2003) recommended that a Detailed Assessment be carried out for nitrogen dioxide at four busy road junctions:

- A228 Castle Way/London Road, Leybourne
- A26 Tonbridge Road/Red Hill, Wateringbury
- A20 London Road/Station Road, Ditton
- Tonbridge High Street (southern end).

The findings of the Detailed Assessment (October 2004) confirmed the need to declare AQMAs at three of the four road junctions; the declarations were made in May 2005. Modelled nitrogen dioxide concentrations at Castle Way/London Road cross roads indicated air quality objectives at nearby residential properties would be met. Proposals for improving air quality in these AQMAs are included in the Local Transport Plan for Kent and the Tonbridge Central Area Action Plan.

The third round of review and assessment commenced in 2005 with an Updating and Screening Assessment. This identified the need for a Detailed Assessment for nitrogen dioxide at locations on the London Road (A20) corridor in the Medway Gap. The Detailed Assessment, which was informed by additional monitoring, confirmed the need for two additional AQMAs at Larkfield/Ditton and Aylesford and consultation on these is currently taking place.

The next (fourth) round of review and assessment will commence later in the year with an Updating and Screening Assessment which will report in April 2009.

## 2.3 Nitrogen Dioxide

The Council has provided nitrogen dioxide diffusion tube data to the Kent and Medway Air Quality database since 1993. Monitoring for nitrogen dioxide using diffusion tubes is currently being carried out at 26 locations within the Tonbridge and Malling Borough. Two of these locations are classed as urban background sites, five as urban industrial, one as kerbside, and 18 as roadside. They are detailed in Table 2.3.1.

Table 2.3.1. Current diffusion tube locations within the Tonbridge and Malling Borough

Code	Location	Grid Reference		Site Class
81909	New Hythe Lane, Church Farm, Larkfield	570428	158936	Urban Industrial
82038	Wilson Road, Tonbridge	560300	148500	Urban Background
85953	Offham Road, West Malling	567626	157640	Urban Background
85737	Hall Road, Aylesford	572600	158600	Urban Industrial
85742	London Road, Wrotham Heath	563900	158100	Kerbside
85756	Bell Lane, Ditton	570800	158900	Urban Industrial
85757	Station Road, Aylesford	571600	158700	Urban Industrial
85758	Teapot Lane, Aylesford	572000	158600	Urban Industrial
85760	Tonbridge Road/Red Hill Corner, Watringbury	569200	153500	Roadside
85769	Tonbridge Road, Watringbury	569200	153500	Roadside
85770	Red Hill, Watringbury	569200	153500	Roadside
81908	Avebury Avenue, Tonbridge	558800	146100	Roadside
85771	46a High Street, Tonbridge	558900	146300	Roadside
85772	10 High Street, Tonbridge	558900	146200	Roadside
85777	64 High Street, Tonbridge	559000	146300	Roadside
85778	35 High Street, Tonbridge	559000	146300	Roadside
85773	3 Station Road, Ditton	571300	158400	Roadside
85774	516 London Road, Ditton	571400	158400	Roadside
85776	527/529 London Road, Ditton (triplicate 1)	571200	158400	Roadside
85779	527/529 London Road, Ditton (triplicate 2)	571200	158400	Roadside
85780	527/529 London Road, Ditton (triplicate 3)	571200	158400	Roadside
85782	8c Pump Close, Leybourne	568714	158300	Roadside
85783	743 London Road, Larkfield (triplicate 1)	570466	158328	Roadside
85784	743 London Road, Larkfield (triplicate 2)	570466	158328	Roadside
85785	743 London Road, Larkfield (triplicate 3)	570466	158328	Roadside
85786	290 London Road, Aylesford (triplicate 1)	572422	157934	Roadside
85788	290 London Road, Aylesford (triplicate 2)	572422	157934	Roadside
85789	290 London Road, Aylesford (triplicate 3)	572422	157934	Roadside
85790	606 London Road, Ditton (triplicate 1)	570945	158490	Roadside
85791	606 London Road, Ditton (triplicate 2)	570945	158490	Roadside
85792	606 London Road, Ditton (triplicate 3)	570945	158490	Roadside
85909	17 McKenzie Close, Aylesford	572378	157935	Roadside
85910	7 Hall Road, Aylesford	572492	157976	Roadside
85787	70 Hadlow Road, Tonbridge	559013	147013	Roadside

At all roadside monitoring locations diffusion tubes are placed within 0.5 metres of the building façade of residential (or other) properties and are therefore indicative of relevant public exposure. These roadside sites represent 'hot spot' locations where the nitrogen dioxide concentration may have an impact on residents. Diffusion tube locations for all sites discussed in this report are shown in Map 1 on page 17 of this report.

Tonbridge and Malling Borough Council also carry out nitrogen dioxide monitoring using diffusion tubes at two locations on behalf of the Highways Agency. Both locations are adjacent to the M20. One diffusion tube is placed at the end of Teapot Lane, Aylesford, and one is placed at the end of Rowan Close, Aylesford. The Council does not have any involvement with the analysis of these tubes or the results obtained. The Council receives and changes the tubes only on behalf of the Highways Agency.

## **2.4 Monitoring in Air Quality Management Areas (AQMAs)**

Tonbridge and Malling Borough Council continues to monitor the concentration of nitrogen dioxide within four previously declared AQMAs. These cover the areas of:

- M20 between New Hythe Lane, Larkfield, and Hall Road, Aylesford
- Tonbridge High Street (southern end)
- A26 Tonbridge Road/Red Hill junction, Watringbury
- London Road/Station Road junction, Ditton

The M20 AQMA was declared in May 2001. The remaining three AQMAs were declared in June 2005.

Within the M20 AQMA, five diffusion tubes are placed to monitor nitrogen dioxide: one at New Hythe Lane, Larkfield (81909), one at Hall Road, Aylesford (85737), one at Bell Lane, Ditton (85756), one at Station Road, Aylesford (85757), and one at Teapot Lane, Aylesford (85758).

Within the Tonbridge High Street AQMA, five diffusion tubes are placed to monitor nitrogen dioxide: one at the corner of Avebury Avenue (81908) and one at no. 10 (85772), no. 35 (85778), no. 46a (85771) and no. 64 High Street (85777).

Within the A26 Tonbridge Road / Red Hill junction, Watringbury AQMA, three diffusion tubes are placed to monitor nitrogen dioxide: one at the corner of Tonbridge Road and Red Hill (85760), one on Red Hill (85770), and one on the Tonbridge Road, opposite the garage (85769).

Within the London Road / Station Road junction, Ditton AQMA, five diffusion tubes are placed to monitor nitrogen dioxide: one at no. 3 Station Road (85773), one at no. 516 London Road (85774), and three in triplicate at no. 527/529 London Road (85776, 85779 and 85780).

## **2.5 Locations Undergoing Detailed Assessment**

The USA Report 2006, completed by Bureau Veritas on behalf of Tonbridge and Malling Borough Council, identified two further locations where the nitrogen dioxide concentration is predicted to exceed the annual mean objective at the nearest façades. These locations, recommended for Detailed Assessment, were identified using the DMRB screening tool together with kerbside bias adjusted diffusion tube data and in accordance with guidance LAQM.TG(03). They cover the areas of:

- London Road, Aylesford
- London Road, Larkfield/Ditton

The subsequent Detailed Assessment Report 2007, also completed by Bureau Veritas, recommended that additional monitoring be carried out at these sites and that they be considered for declaration as AQMAs.

To this end, diffusion tubes have been placed in triplicate at the façade of no. 290 London Road (85786, 85788 and 85789). One diffusion tube has also been placed at the façade of no. 7 Hall Road (85910), and one at the façade of no. 17 McKenzie Close (85909). Triplicate diffusion tube monitoring at no. 290 London Road commenced in July 2006, and monitoring at no. 7 Hall Road and no. 17 McKenzie Close commenced in May 2007.

Diffusion tubes have also been placed in triplicate at the façade of no. 606 London Road, Ditton (85790, 85791 and 85792) and at the façade of no. 743 London Road, Larkfield (85783, 85784 and 85785). Monitoring commenced at 606 London Road, Ditton in February 2007 and monitoring at 743 London Road, Larkfield commenced in July 2006.

## **2.6 Locations Identified as Potentially Significant**

The 2006 USA Report also identified the Hadlow Road/Cannon Lane junction in Tonbridge as potentially significant due to congestion issues. This location, assessed using the DMRB screening tool, shows that the annual mean objective is likely to be met at this location without the street canyon model scenario. However, this junction is only marginally below the objective. Monitoring is therefore being carried out at the nearest receptor to confirm

compliance. To this end, one diffusion tube has been placed at no. 70 Hadlow Road (85787). Monitoring at this location commenced July 2007.

## **2.7 Additional New Monitoring Locations**

The Castle Way/London Road junction, Leybourne, was highlighted in the 2006 USA Report to show predicted exceedences of the annual mean objective at the kerbside of this junction. This was based on kerbside diffusion tube results and assessed using the DMRB screening tool. However, there is no relevant exposure close to the junction. The kerbside diffusion tube has been removed and instead, one diffusion tube has been placed at the façade of 8c Pump Close, Leybourne (85782), the nearest residential property to the junction, to confirm compliance. Monitoring at this location commenced July 2006.

## **2.8 Diffusion Tube Supply and Analysis**

Until May 2004, diffusion tubes were supplied by Harwell Scientifics using the preparation method of 50% Triethanolamine (TEA) in acetone, and analysed by Kent Scientific Services. In May 2004, however, the tube supplier was changed to Gradko International. Gradko use the same tube preparation method, however, studies have indicated that there are differences in the performance of diffusion tubes from different laboratories. The monthly bias adjustment factors for Gradko tubes were indeed notably higher and more variable than those calculated for Harwell tubes. Hence, in January 2006, the diffusion tube supplier was changed back to Harwell Scientifics and tube analysis was also passed to Harwell Scientifics.

## **2.9 Diffusion Tube Data Analysis**

Nitrogen dioxide diffusion tubes are exposed for four or five whole weeks thus providing a monthly mean nitrogen dioxide concentration value for each monitoring location. This data is then used to calculate the annual mean at each location.

All post 2000 diffusion tube data has been corrected using a bias adjustment factor. There is no bias adjustment factor available for data prior to 2001. Data for years 2001 to 2003, 2005 and 2006 has been corrected using a local bias adjustment factor derived from Kent co-location studies. Due to the discrepancy in diffusion tube preparation and analysis between Harwell Scientifics and Gradko International, 2004 data has been corrected using a separately calculated bias adjustment factor. The national bias adjustment factor for 2006 has been applied to 2007 data as an interim measure as, at

the time of writing this report, no bias factor for 2007 is yet available. Data for 2007 will be adjusted with a local bias adjustment factor when it is available. These results are therefore subject to change.

For locations where only a short period of diffusion tube data is available, due to commencing monitoring part way through the year, the annual mean has been adjusted using the method described in guidance LAQM.TG(03).

## 2.10 Nitrogen Dioxide Diffusion Tube Results, 1997 to 2007

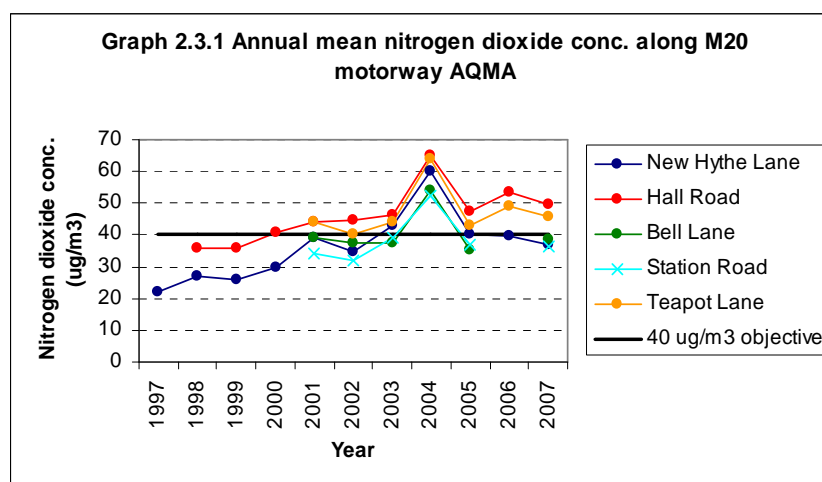
A summary of the annual mean nitrogen dioxide concentration according to diffusion tube results for years 1997 to 2007 for all current diffusion tube locations, is shown in Table 2.3.2. on page 11. Data for years 1997 to 2002 have been calculated by Air Quality Consultants Ltd. Data from 2003 to 2006 has been calculated by Bureau Veritas, formerly Casella Stanger. Data for 2007 has been calculated in-house.

Also shown, for many sites, is the predicted annual mean concentration for the year 2010, based on data from 2006, calculated by Bureau Veritas.

## 2.11 Diffusion Tube Data for Previously Declared AQMAs

Numerical data for diffusion tube locations within all AQMAs can be seen in Table 2.3.2. Below they are also represented graphically and comments are made on any observable trends.

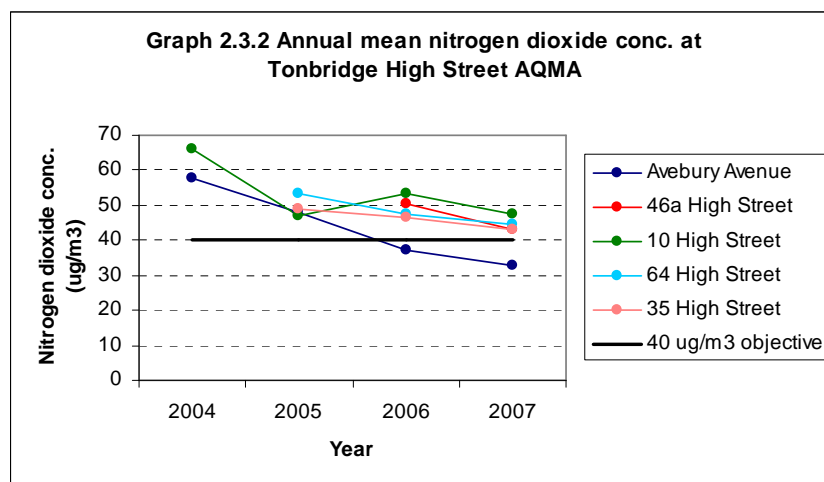
Graph 2.3.1 shows the annual mean nitrogen dioxide concentration at monitoring sites within the M20 motorway AQMA.



The annual mean nitrogen dioxide concentration at all diffusion tube locations has, in recent years, frequently exceeded the annual mean objective. There

is a general upward trend in the concentration of nitrogen dioxide along this section of the M20. Based on 2006 data, the nitrogen dioxide concentration at Hall Road and Teapot Lane is expected to still exceed the annual mean objective in 2010. It is expected to fall below the annual mean objective, however, at New Hythe Lane by 2010.

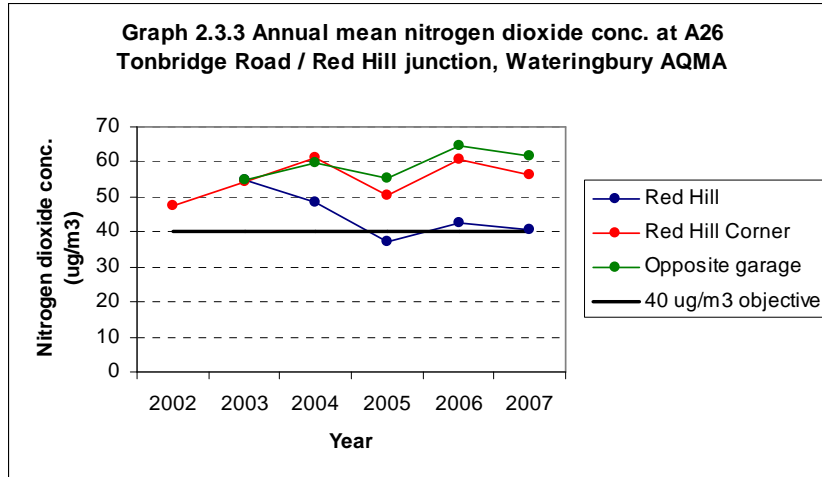
Graph 2.3.2 shows the annual mean nitrogen dioxide concentration at monitoring sites within the Tonbridge High Street AQMA.



With the exception of the corner of Avebury Avenue, the annual mean nitrogen dioxide concentration at all diffusion tube locations have remained above the annual mean objective in recent years. There is a general downward trend in the concentration of nitrogen dioxide in this area. Based on data from 2006 the concentration at all monitoring sites, except Avebury Avenue, are predicted to remain above the annual mean objective in 2010.

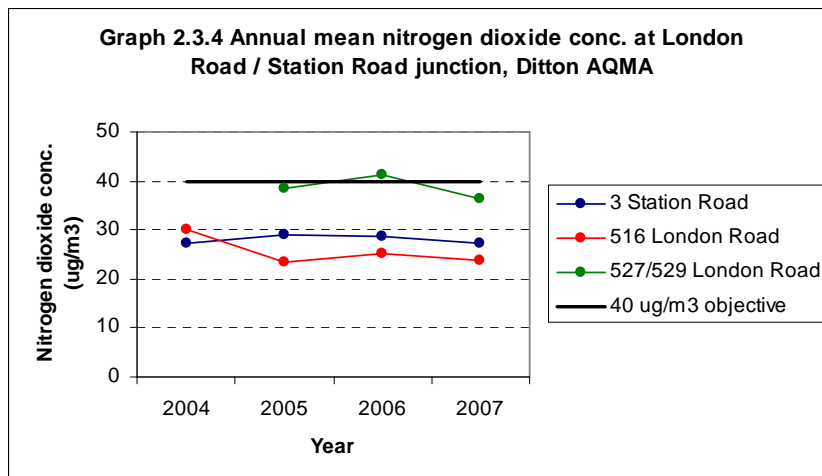
However, an air quality assessment of this area, carried out by Bureau Veritas as part of the Tonbridge Central Area Action Plan 2007, predicts that by 2016 the annual mean objective will be achieved at all locations currently being monitored. This is due to expected reductions in pollutant concentrations with time and improvements in vehicle emissions through national policy measures.

Graph 2.3.3 shows the annual mean nitrogen concentration at monitoring points within the Waterringbury AQMA.



The annual mean nitrogen dioxide concentration at all three diffusion tube sites have remained near to or above the annual mean objective in recent years. A clear overall trend is difficult to ascertain at this location. However, based on data from 2006, the nitrogen dioxide concentration at the corner of Red Hill and the Tonbridge Road opposite the garage, is predicted to remain above the annual mean objective. The nitrogen dioxide concentration is predicted to fall below the annual mean objective on Red Hill.

Graph 2.3.4 shows the annual mean nitrogen dioxide concentration within the London Road/Station Road junction AQMA.



The annual mean nitrogen dioxide concentration at no. 527/529 London Road, has exceeded the annual mean objective in recent years. However, in 2007 it fell below the annual mean objective. The annual mean objective has not been exceeded at other diffusion tube locations within this AQMA. A clear trend is difficult to ascertain at this location. However, based on data from 2006, it is predicted that the concentration at all locations will be below the annual mean objective by 2010.

Monitoring at all diffusion tube sites within the AQMAs will continue as described. Any possible trends in the data must be treated with caution as there is not sufficient long term data to accurately ascertain a trend and the concentration of nitrogen dioxide measured may be affected from year to year by weather conditions.

Table 2.3.2. Annual mean nitrogen dioxide concentration 1997 to 2007 and projected to 2010.

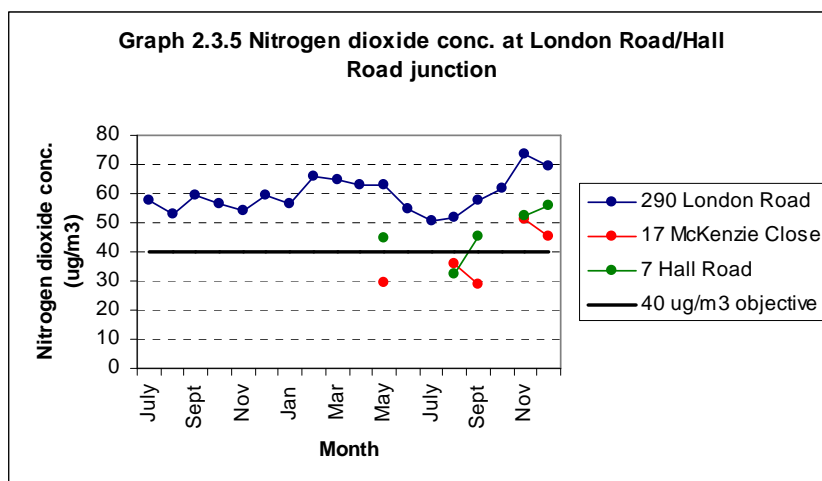
Code	Location	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2006 projected to 2010
81909	New Hythe Lane, Church Farm, Larkfield	22.0	27.0	26.0	30.0	39.0	35.0	43.0	60.2	40.0	39.8	37.1	34.5
82038	Wilson Road, Tonbridge	14.0	14.0	13.0	15.0	19.0	18.7	24.0	20.9	18.3	17.9	18.1	16.0
85737	Hall Road, Aylesford		36.0	36.0	41.0	44.0	44.5	46.4	65.1	47.4	53.6	49.9	46.4
85742	London Road, Wrotham Heath	23.0	29.0	31.0	34.0	37.0	35.6	42.9	52.8	38.0	42.1	40.6	36.5
85756	Bell Lane, Ditton					39.0	37.7	37.4	54.0	35.5		38.5	
85757	Station Road, Aylesford					34.0	32.0	39.3	52.4	36.7		36.1	
85758	Teapot Lane, Aylesford					44.0	40.3	43.9	63.7	42.8	49.2	45.7	42.6
85760	Tonbridge Road/Red Hill, Watringbury					47.0	47.4	54.5	61.0	50.4	60.7	56.3	52.6
85769	Tonbridge Road, Watringbury							54.9	59.8	55.5	64.5	61.4	55.8
85770	Red Hill, Watringbury							54.9	48.7	37.0	42.4	40.7	36.7
81908	Avebury Avenue, Tonbridge	22.0	25.0	28.0	30.0	36.0	31.0	38.8	48.1	32.4	37.3	32.9	32.3
85771	46a High Street, Tonbridge								58.0	47.8	50.2	42.8	43.4
85772	10 High Street, Tonbridge								66.0	47.1	53.5	47.5	46.3
85777	64 High Street, Tonbridge									53.4	47.6	44.6	41.2
85778	35 High Street, Tonbridge									48.9	46.3	43.2	40.1
85773	3 Station Road, Ditton								27.2	28.9	28.6	27.2	24.8
85774	516 London Road, Ditton								30.0	23.4	25.3	23.8	21.9
85776/79/80	527/529 London Road, Ditton (triplicate)								50.8		41.2	36.5	35.7
85782	8c Pump Close, Leybourne										28.0	25.7	24.2
85783/84/85	743 London Road, Larkfield (triplicate)										43.1	38.7	37.3
85786/88/89	290 London Road, Aylesford (triplicate)										53.0	47.6	45.9
85790/91/92	606 London Road, Larkfield (triplicate)											34.9	
85909	17 McKenzie Close, Aylesford											29.8	
85910	7 Hall Road, Aylesford											36.0	
85953	Offham Road, West Malling	14.0	16.0	14.0	17.0	21.0	19.2	22.7	24.2	22.0	20.7	21.1	18.5
85787	70 Hadlow Road, Tonbridge											29.8	

Note: values highlighted in red exceed the 2010 annual mean UK air quality objective of 40µg/m<sup>3</sup>.

## 2.12 Diffusion Tube Data for Locations Undergoing Detailed Assessment

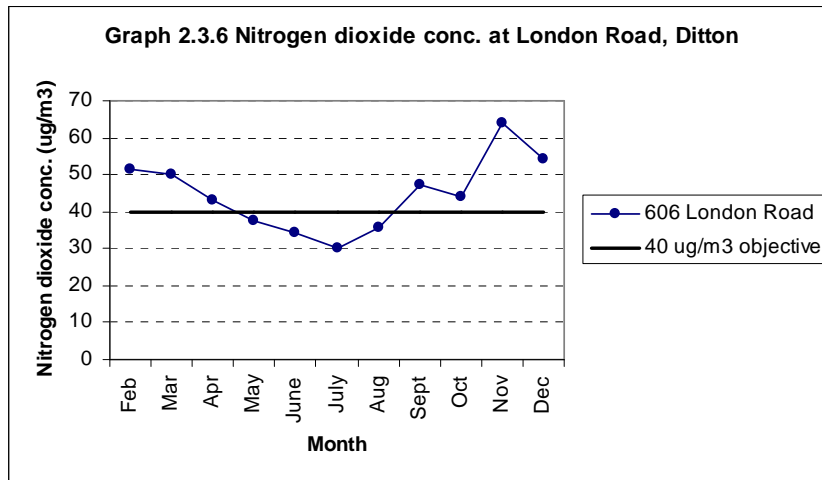
Monthly diffusion tube data for locations undergoing a Detailed Assessment are shown in the graphs below. The graphs show all data obtained since monitoring commenced at these sites up until December 2007.

Graph 2.3.5 shows the monthly nitrogen dioxide concentration at diffusion tube locations around the London Road/Hall Road junction, Aylesford from July 2006 to December 2007. Note that the triplicate tubes placed at the façade of no. 290 London Road are represented as the calculated triplicate mean.



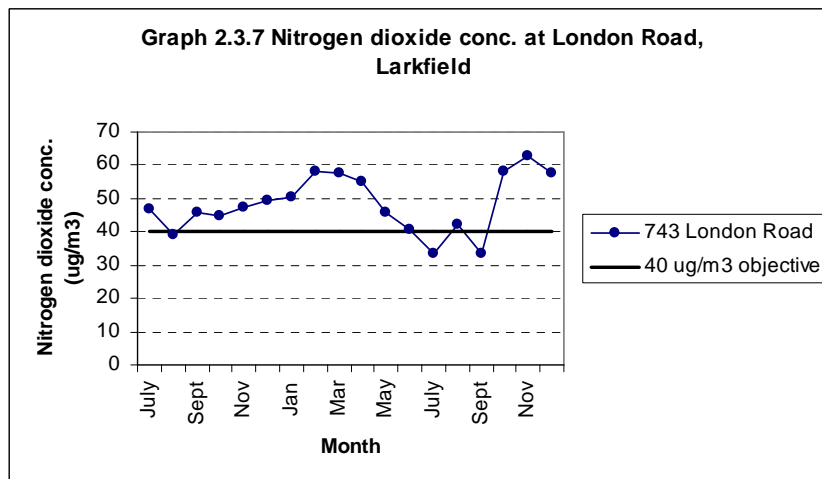
Bias adjustment of the data shows that the annual mean nitrogen dioxide concentration at no. 290 London Road was  $53.0\mu\text{g}/\text{m}^3$  in 2006 and  $47.6\mu\text{g}/\text{m}^3$  in 2007, and is predicted to remain above the annual mean objective in 2010. Bias adjusted data from diffusion tubes at 17 McKenzie Close and 7 Hall Road show that the nitrogen dioxide concentration is lower at these locations further away from the junction, falling below the annual mean objective.

Graph 2.3.6 shows the monthly nitrogen dioxide concentration at no. 606 London Road, Ditton from February 2007 to December 2007. Note that triplicate tubes are placed at this location and are represented as the calculated triplicate mean.



Bias adjustment of the data shows that the annual mean nitrogen dioxide concentration in 2007 was  $34.9\mu\text{g}/\text{m}^3$ . However, as can be seen from Graph 2.3.6 the monthly data is variable and results considerably higher than the  $40\mu\text{g}/\text{m}^3$  annual mean objective are often observed.

Graph 2.3.7 shows the monthly nitrogen dioxide concentration at no. 743 London Road, Larkfield from July 2006 to December 2007. Note that triplicate tubes are placed at this location and are represented as the calculated triplicate mean.

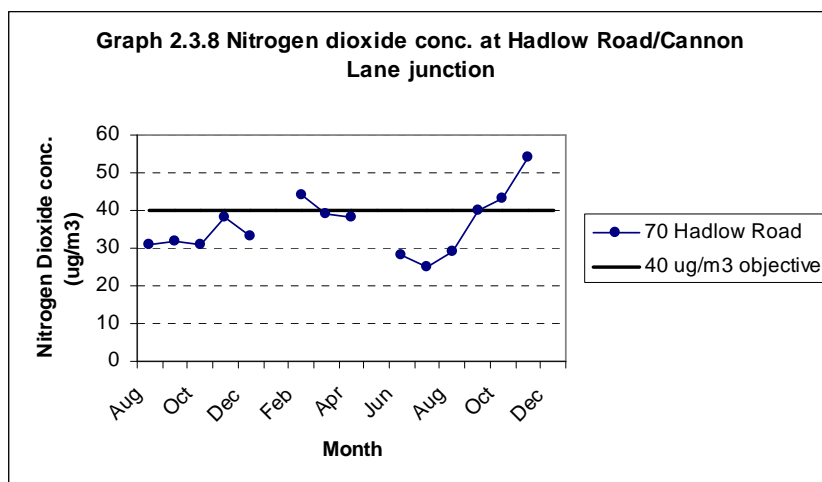


Bias adjustment of the data shows that the annual mean nitrogen dioxide concentration was  $43.1\mu\text{g}/\text{m}^3$  in 2006 and  $38.7\mu\text{g}/\text{m}^3$  in 2007. As can be seen from Graph 2.3.7 the monthly data is variable and results considerably higher than the  $40\mu\text{g}/\text{m}^3$  annual mean objective are often observed. The annual mean nitrogen dioxide concentration is predicted to fall marginally below the annual mean objective by 2010.

Monitoring at the above diffusion tube sites will continue as described. So far there is insufficient data to make any conclusions with confidence. Nitrogen dioxide concentrations may be affected by weather conditions and results obtained at each site vary considerably.

### 2.13 Diffusion Tube Data for Potentially Significant Locations

Graph 2.3.8 shows the monthly nitrogen dioxide concentration at no. 70 Hadlow Road, Tonbridge from August 2006 to December 2007.



Bias adjusted diffusion tube data shows that the annual mean nitrogen dioxide concentration at this location in 2007 was 29.8 $\mu\text{g}/\text{m}^3$ , considerably below the annual mean objective.

Monitoring at the above locations will continue as described. So far there is insufficient data to make any conclusions with confidence. Nitrogen dioxide concentrations may be affected by weather conditions and results obtained at each site vary considerably.

### 2.14 Nitrogen Dioxide Continuous Monitoring - Historical

Tonbridge and Malling Borough Council carry out continuous monitoring of nitrogen dioxide at one location: the south end of Tonbridge High Street within the AQMA. A continuous analyser was installed in April 1997 to more accurately assess the concentration of nitrogen dioxide at this location. It was housed on the first floor of a building on the corner of Avebury Avenue with an air inlet tube protruding out of the building and overhanging the High Street. The analyser remained here until 2004. Towards the end of 2004 it was taken out of service as the building in which it was housed was required for other purposes and it could no longer be accommodated.

Table 2.3.3 shows the annual mean nitrogen dioxide concentration recorded by the continuous analyser when it was in place on the corner of Avebury Avenue from 1997 to 2004.

Table 2.3.3 Annual mean nitrogen dioxide concentration 1997 to 2004

Year	1997	1998	1999	2000	2001	2002	2003	2004
µg/m <sup>3</sup>	53.6	58.0	53.9	48.0	49.0	42.9	47.4	44.0

Historically, the annual mean has remained above the objective at this site. There were no recorded exceedences of the 1-hour objective whilst the analyser was in place from 1997 to 2004.

### **2.15 Nitrogen dioxide continuous monitoring - reinstallation of analyser**

The analyser was reinstalled on Tonbridge High Street, still within the AQMA in July 2007. It is now housed on the first floor of McDonald's Restaurant (nos. 12 -14) similarly as before with an air inlet tube protruding out of the building and overhanging the High Street, 4.3 metres above ground level.

Although the continuous analyser was reinstalled on Tonbridge High Street in July 2007, there was not enough data capture during 2007 to calculate a reliable annual mean. Reliable data will be available from 2008.

There have not yet been any recorded exceedences of the 1-hour objective since its reinstallation in 2007.

## **3. IMPLEMENTATION OF THE ACTION PLANS**

Progress in implementing measures identified in the Air Quality Action Plan, Local Transport Plan for Kent, and Tonbridge Central Area Action Plan are summarised at Appendix 1.

## **4. PLANNING APPLICATIONS**

Tonbridge and Malling is strategically located between London and the Channel Ports. It also is just to the south of the major regeneration area of the Thames Gateway. The borough faces considerable development pressures, which are concentrated in the 28% of the area that is outside the Metropolitan Green Belt. Major developments that have received planning permission in the last few years include:

- A cement works – the first new works in the UK for more than fifty years;
- A waste-to-energy plant - operational;

- 1000 new dwellings at Holborough Quarry, Snodland – development commenced
- 750 new dwellings at Kings Hill, West Malling – development commenced
- 700 new dwellings at Leybourne Grange, Leybourne
- 1000 dwellings at Peters Pit, Wouldham

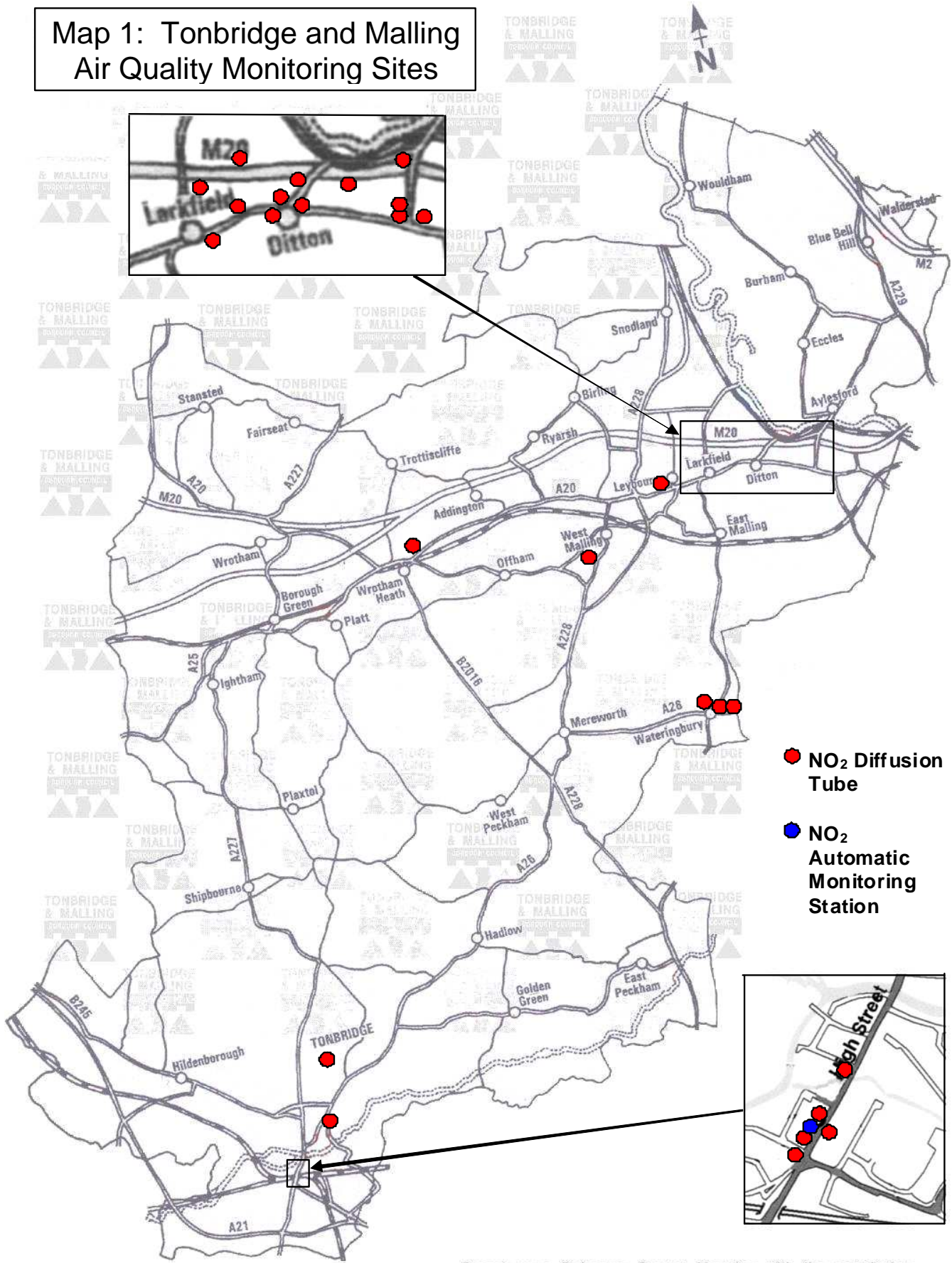
The planning permission for the new cement works is subject to a Section 106 agreement requiring the provision of off-site continuous air quality monitoring. Planning policies relevant to air quality are at Appendix 2.

## **5. TRANSPORT**

The proposals for residential development at Holborough Quarry, Kings Hills and Leybourne Grange were determined by the First Secretary of State following a joint public inquiry. The grant of planning permission for the three schemes is subject to conditions and agreements which are providing:

- improvements to Junction 4 of the M20;
- the construction of a by-pass to Leybourne;
- bus priority schemes on the A20 and at Kings Hill;
- pedestrian/cycle pathways.

**Map 1: Tonbridge and Malling Air Quality Monitoring Sites**



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## Appendix 1: Air Quality Action Plan – Summary of Actions

Key TMBC – Tonbridge and Malling Borough Council, RK – Rouse Kent KCC – Kent County Council, HA – Highways Agency LA – Local Authorities, KP – Kent Police, PO – Private Operators S – short term (0-2 years), M – medium term (2-5 years), L – long term (5+ years)	Action plan measure /target	Original (2003) time scale	Progress with measure	Comments
<b>National/M20 Actions</b>				
Extend/improve rail freight and passenger infrastructure and service	Govt/ KCC	M-L	High Speed 1 (Channel Tunnel Rail Link) fully opened in November 2007, including international station at Ebbsfleet in north Kent.	Transfer of Eurostar passenger services to High Speed 1 increases capacity of exiting lines to accommodate international freight.
Speed restriction and enforcement	Fixed HA/KP	M	} Variable speed restrictions } introduced on M20 between } junctions 4-7 in spring 2008.	Highways Agency proposing to install two continuous air quality analysers to monitor the impact of variable speed restrictions.
	Variable HA/KP	L		
Information / advisory signs	HA	S	Variable message signs introduced on M20 in 2007	

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<p>Enhanced screening</p>	<p>HA</p>	<p>M</p>	<p>Approximately 1200 metres of additional barriers provided on M20 between junctions 4-5 in 2005-07.</p>	<p>Further 860 metres of barriers proposed in 2008-09 subject to funding.</p>
<p><b>Borough - Wide Actions</b></p>				
<p><b>Planning</b></p>				
<p>Development Control – assessment of air quality impacts of proposed developments</p>	<p>TMBC/ KCC</p>	<p>On-going</p>	<p>Applicants are required to undertake assessments where appropriate.</p>	
<p>Development Plan review – enhanced policies to improve air quality</p>	<p>TMBC/ KCC</p>	<p>S-M</p>	<p>The Local Development Framework Core Strategy (2006) contains a core policy relevant to air quality.</p>	<p>The emerging “Managing Development and the Environment Development Plan Document” will consider the need for additional policies/guidance on air quality.</p>

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<p><b>Transport Planning</b></p>				
<p>Improve public transport services</p>	<p>PO/KCC</p>	<p>S-M</p>	<p>Implemented improvements include new bus services, improved frequency of bus services, 'Freedom Pass' for secondary school children to encourage use of public transport and reduce 'school run' car journeys.</p>	<p>Work has commenced on preparation of a public transport strategy for Tonbridge and Tunbridge Wells, reflecting the hub status of these towns in the South East Plan. The study will assist in establishing a strategy for providing an enhanced public transport system to address local congestion, sustainability and air quality issues.</p>
<p>Improved public transport infrastructure</p>	<p>KCC</p>	<p>M-L</p>	<p>Implemented improvements include enhanced bus/rail interchange at West Malling station; improved bus stops/shelter</p>	<p>Improvements part-funded by developer contributions.</p>

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<p>Enhanced provisions for cycling and walking</p>	<p>KCC/ TMBC</p>	<p>S-L</p>	<p>and real time displays on A20 corridor; new bus lanes on A20 corridor.</p> <p>Tonbridge to Penshurst Place Cycle Route - 5 mile route opened in 2005, almost entirely traffic free.</p> <p>Healthy Walks - at Leybourne Lakes and Haysden Country Parks, led by qualified volunteers.</p> <p>Enhanced walking provision at Haysden Country Park.</p> <p>Dedicated cycle path separate from the traffic along the West Malling Bypass (KCC scheme).</p>	<p>Kent County Council has drafted a Cycling Strategy for Tonbridge and Malling to replace the Borough Council's own strategy 'Putting the Wheels in Motion'. The draft Strategy was produced by Sustrans working in partnership with Borough and County Council officers and local cyclists.</p>

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<p><b>Green Transport Initiatives</b></p> <p>Promote use of Kings Hill car share scheme</p> <p>Advice to businesses on travel plans</p> <p><b>Controls on Domestic Emissions</b></p> <p>Enforcement of statutory nuisance controls</p> <p>Encourage/assist home energy efficiency improvements</p>	<p>TMBC RK</p> <p>TMBC/ KCC</p> <p>TMBC</p> <p>TMBC</p>	<p>S-M</p> <p>S-M</p> <p>On-going</p> <p>On-going</p>	<p>The Borough Council introduced a car sharing scheme in 2006.</p> <p>On-going advice provided and travel plans required pursuant to planning permission where appropriate.</p> <p>On-going enforcement in relation to unauthorised bonfires etc.</p> <p>Energy efficiency has improved by 13% in the period April 2003 to</p>	

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<p>Information and advice</p>	<p>TMBC</p>	<p>On-going</p>	<p>March 2007, and by 26% since April 1996.</p> <p>Comprehensive range of advice and practical assistance available through links with the Kent Energy Centre, Kent Action to Save Heat (KASH) and the Home Improvement Agency.</p>	
<p><b>Controls on Industrial Emissions</b></p> <p>Implementation of IPPC and LAAPC</p>	<p>EA TMBC</p>	<p>On-going</p>	<p>On-going implementation / enforcement of controls on prescribed processes. Dry cleaners brought within scope of LAPPC from 2007.</p>	

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<p>Planning controls</p>	<p>TMBC KCC</p>	<p>On-going</p>	<p>On-going implementation of planning policies relating to air quality – see Appendix ?</p>	
<p>Enforcement of statutory nuisance controls</p>	<p>TMBC</p>	<p>On-going</p>	<p>On-going enforcement as appropriate.</p>	
<p><b>Local Air Quality Management</b></p> <p>Air quality monitoring</p> <p>Continued and enhanced partnership working</p>	<p>TMBC LA</p> <p>TMBC LA/HA KCC EA</p>	<p>On-going</p> <p>On-going</p>	<p>On-going monitoring coordinated through the Kent and Medway Air Quality Partnership. See section ? for results/trends.</p> <p>The Kent and Medway Air Quality Partnership provides an ongoing forum for the discussion and coordination of air quality issues.</p>	<p>Five year monitoring contract competitively tendered in 2006. New contractor – AEA Technology – operating monitoring network from April 2007.</p>

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<p><b>Promotional Activities</b></p> <p>Improve dissemination of air quality information e.g. development of TMBC Web site</p> <p>Vehicle emission testing</p> <p>Work with Health Authorities on information/advice on health effects</p>	<p>TMBC</p> <p>TMBC</p> <p>TMBC</p>	<p>S</p> <p>S-M</p> <p>S-M</p>	<p>The air quality page on the TMBC website is regularly updated and also includes a link to the Kent and Medway Air Quality Monitoring Network site <a href="http://www.kentair.org">www.kentair.org</a> which gives comprehensive, real-time and historic information on local air quality.</p> <p>Some limited promotional vehicle emissions testing has been undertaken but it was concluded that the input was disproportionate to the outcome.</p> <p>On-going</p>	

## Appendix 2: Air Quality Planning Policies

### 1. The South East Plan 2006

#### Policy NRM7 Air Quality

Local authorities and other relevant bodies should seek an improvement in air quality in their areas so that there is a significant reduction in the number of days of medium and high air pollution by 2026. Local Development Documents and development control can help to achieve improvements in local air quality through:

- i. Ensuring consistency with Air Quality Management Plans
- ii. Reducing the environmental impacts of transport and congestion management, and support the use of cleaner fuels
- iii. Mitigating the impact of development and reduce exposure to poor air quality through design, particularly for residential development in areas which already, or are likely to, exceed national air quality objectives
- iv. Encouraging the use of best practice during construction activities to reduce the levels of dust and other pollutants.

### 2. Kent and Medway Structure Plan 2006

#### Policy NR5: Pollution Impacts

The quality of Kent's environment will be conserved and enhanced. This will include the visual, ecological, geological, historic and water environments, air quality, noise and levels of tranquillity and light intrusion.

Development should be planned and designed to avoid, or adequately mitigate, pollution impacts. Proposals likely to have adverse implications for pollution should be the subject of a pollution impact assessment.

In assessing proposals local authorities will take into account:

- (a) impact on prevailing background pollution levels; and
- (b) the cumulative impacts of proposals on pollution levels; and
- (c) the ability to mitigate adverse pollution impacts; and
- (d) the extent and potential extremes of any impacts on air quality, water resources, biodiversity and human health.

Development which would result in, or significantly contribute to, unacceptable levels of pollution, will not be permitted.

**Policy NR6: Development Sensitive to Pollution**

Development which would be sensitive to adverse levels of noise, air, light and other pollution, will not be supported where such conditions exist, or are in prospect, and where mitigation measures would not afford satisfactory protection.

**Policy NR7: Air Quality Management Areas**

The local authorities are required to:

- (a) review and assess air quality and, where necessary, declare Air Quality Management Areas;
- (b) work towards improving air quality in Air Quality Management Areas through preparation of an Air Quality Action Plan.

The scale and character of development in, or adjoining such areas, should be controlled so as not to adversely affect this improvement.

**3. Local Transport Plan for Kent 2006-11**

**Policy EHC 1 Air Quality**

KCC will work with partners to seek a reduction in traffic pollution on the local road network.

**4. Tonbridge and Malling Local Development Framework: Core Strategy – September 2007**

**POLICY CP1**

- 3. The need for development will be balanced against the need to protect and enhance the natural and built environment. In selecting locations for development and determining planning applications the quality of the natural and historic environment, the countryside, residential amenity and land, air and water quality will be preserved and, wherever possible, enhanced.

**3. Tonbridge and Malling Local Development Framework: Tonbridge Central Area Action Plan – September 2006**

**POLICY TCA2**

- 4. Development within the Central Area will be required to:
  - h) have regard to air quality in the design and layout of development.

The improvement of the Town Centre for pedestrians is at the heart of the Council's regeneration vision. In addition improvements to public transport facilities will be sought in order to encourage more people to use buses and trains for their journeys. The adopted Kent County Council Transport Strategy for Tonbridge, which is integral to the Central Area Master Plan and to the AAP, identifies a comprehensive range of measures aimed at bringing about improvements, including:

- Deterrent measures in the High Street
- Improvements to air quality.

#### POLICY TCA12

1. Proposals will be brought forward at the following junctions, and where necessary land will be safeguarded, to maximise their capacity and manage traffic flows in order to achieve greater pedestrian priority and easier bus, cycle and disabled access in the High Street:

- a) Vale Road/High Street, including the widening of Vale Road;
- b) Bordyke/High Street;
- c) Vale Road/Vale Rise;
- d) Pembury Road/Quarry Hill Road Junction.

2. Throughout the Central Area the existing signing strategy will be reviewed in order to encourage traffic to use alternative routes to the High Street.

3. Land for the completion of the Lansdowne Road Link will be safeguarded to enable the introduction of greater pedestrian priority and environmental enhancements in Bank Street and Castle Street.

In addition, outside the Central Area the construction of the London Road/Hadlow Road Link will need to be brought forward to reduce through traffic using the High Street and facilitate pedestrian improvements as well as improve traffic conditions in the Conservation Area. The junction of Hadlow Road and Cannon Lane (also outside the Tonbridge AAP) will also need improvement prior to the construction of the Link Road. Furthermore, the progressive upgrading of the A228 corridor, including the construction of the Colts Hill Link and other improvements, will enable through traffic destined for Tunbridge Wells to be diverted away from the A26 through the centre of Tonbridge and the village of Hadlow.

#### Pedestrian Priority Areas

#### POLICY TCA13

Proposals will be brought forward to achieve greater pedestrian priority in the following areas:

- a) The High Street, the environmental quality of which will be improved through street enhancements, improved crossing facilities, designated disabled driver parking, management of service vehicle access and the provision of wider pedestrian footpaths.

## Travel Plans

The primary aim of a Travel Plan is to reduce the number of regular journeys made by car, particularly by single occupants, in order to make more efficient use of the highway network, to improve air quality and the overall environmental quality of the Central Area.

### POLICY TCA18

All new development within the Central Area will be required to prepare, implement and monitor the effectiveness of travel plans relating to the development proposed.

## GLOSSARY

$\mu\text{g}/\text{m}^3$  = micrograms per cubic metre

$\text{NO}_2$  = nitrogen dioxide

$\text{PM}_{10}$  = fine particle matter less than 10 microns diameter

AQMA = Air Quality Management Area

DfT = Department for Transport

DEFRA = Department for Environment, Food and Rural Affairs

KMAQMN = Kent and Medway Air Quality Monitoring Network

LAQM = Local Air Quality Management

NAQS = National Air Quality Strategy

TMBC = Tonbridge and Malling Borough Council

USA = Updating and Screening Assessment

DMRB = Design Manual for Roads and Bridges