

Dartford Borough Council

Local Air Quality Management – Action Plan

Dartford Town and Approach Roads Air Quality Management Area,
A226 London Road Air Quality Management Area, and
Bean Interchange Air Quality Management Area.

2009

CONTENTS

	Page
Executive Summary	2
1 Introduction and Aims of the Action Plan	4
1.1 Project Background	4
1.2 Legislative Background	4
1.3 Scope of the Action Plan	4
1.4 Reporting of Action Plan	6
2 Overview of Air Quality in Dartford	7
3 Existing Policies & Strategies to Improve Air Quality	15
3.1 Local Plan / Local Development Framework	15
3.2 Dartford Borough Council Local Agenda 21 (LA21) Strategy	16
3.3 Kent Thameside Community Strategy (2003)	17
3.4 Dartford Borough Council Corporate Plan (2007 -2008)	17
3.5 Kent Environment Strategy (2003)	17
3.6 Kent Local Transport Plan for Kent 2006-11	19
3.7 Kent and Medway Structure Plan 2006	20
3.8 Route Management Strategies	22
3.9 South Coast Multi-Modal Study (2002)	22
3.10 Draft South East Plan (Regional Spatial Strategy) (2006)	23
4 Financing	24
5 Consultation	25
6 Direct and Indirect Measures	26
6.1 Direct Measures for A282 Tunnel Approach Road AQMA	27
6.2 Direct Measures for the Dartford Town Centre and Approach Road AQMA, A226 London Road AQMA and Bean Interchange AQMA	28
6.3 General Borough-wide Measures to Improve Air Quality	36
Energy Management	40
7 Implementation and Monitoring	44
8 Defra Action Planning Requirements Compliance Checklist	45
9 Glossary of Terms	46
10 References	47

EXECUTIVE SUMMARY

This Air Quality Action Plan is the culmination of the second round of local air quality review and assessment for Dartford Borough Council (DBC). The process of Local Air Quality Management (LAQM) review and assessment has been set down in Part IV of the Environment Act 1995, which forms part of the Government's response to European Directives on Air Quality to which the UK Air Quality Strategy responds.

The first round of review and assessment resulted in the declaration of an Air Quality Management Area (AQMA) along the A282 Dartford Tunnel Approach Road for nitrogen dioxide and particulates (PM₁₀) largely due to road traffic emissions from the A282. An Air Quality Action Plan is already in place for this AQMA, which was drawn up in 2002 in partnership with the Highways Agency to tackle the A282 Trunk Road emissions. Relevant measures from this Action Plan will be incorporated into this Plan to enable review of the previous Plan measures and ensure that there is consistency between the two Plans. This Air Quality Action Plan aims to encompass the wider Dartford Air Quality issues, in addition to the declared AQMAs.

The results of the second round review and assessment showed exceedences of Air Quality Objectives in addition to those identified in the first round. Exceedences of the NO₂ annual mean Objective were predicted at relevant receptors along the:

- Dartford Town Centre and approach roads,
- A226 London Road, and the
- Bean Interchange (A2).

In compiling this Action Plan, Government guidance LAQM.PG (03) and guidance from the National Society for Clean Air has been referred to, alongside guidance provided by the Department for Environment, Food and Rural Affairs through its Air Quality Action Plan Help Desk.

The aim of this Action Plan is to identify how Dartford Borough Council will use its existing powers and work together with other organisations in pursuit of the annual mean Air Quality Objective for nitrogen dioxide. Measures are proposed to improve air quality both within the three second round AQMAs, existing A282 Trunk Road AQMA, and across the Borough as a whole.

Kent County Council is responsible for the management of the local road network and as such is responsible for the direct actions proposed for two of the three second round AQMAs in order to reduce road traffic emissions. Dartford Borough Council will work together with the local transport authority Kent County Council (KCC), to improve air quality within the AQMAs and throughout the Borough. Dartford Borough Council will continue to work with the relevant transport authority for the A282, the Highways Agency, to improve air quality within the A282 Dartford Tunnel Approach Road AQMA. In addition, Dartford Borough Council will work together with the Highways Agency with respect to improvements within the Bean Interchange (A2) AQMA.

The direct measures proposed for the second round AQMAs are:

- Encourage modal shift through cycleway/ footpath improvements
- Traffic Management improvements– Dartford Town Centre UTMC
- Junction Improvements: St Clements A226/B255

- Improve emissions Standards for Council Fleet and Public Service Vehicles
- Bus Service Improvements and Priority
- Improvements to public transport interchanges
- Installation of Real Time Passenger Information
- Improvements to Bean Interchange

The general measures to improve air quality across the whole Borough are:

- DBC will develop a Council's Staff Travel Plan and encourage uptake of sustainable modes of transport
- DBC will continue to work together with KCC to encourage the uptake of Employer and School Travel Plans within the Borough.
- DBC will continue to work with KCC to improve the facilities for cycling and walking within Dartford and encourage greater uptake.
- DBC Environmental Health Department will continue to work closely with the Planning Department to ensure that air quality is taken into account in the planning process when located in or close to the AQMA or in areas marginally below air quality objectives.
- DBC will continue to work together with developers to improve sustainable transport links serving new developments.
- DBC will develop, through the Kent & Medway Air Quality Partnership, supplementary planning guidance to assist with air quality assessments of development proposals
- DBC will continue their commitment to local air quality monitoring within the Borough to ensure a high standard of data is achieved to assess against air quality objectives
- DBC will make details of the Action Plan measures and annual progress reports available on the Website to ensure broad access to the consultation and implementation process.
- DBC will continue to work together the Kent and Medway Air Quality Partnership on promotional activities to raise the profile of air quality in Dartford
- DBC will continue to inspect all of its permitted industrial processes to ensure compliance with the PPC Regulations 2000 and will continue to enforce the Environmental Protection Act 1990 Part III and Clean Air Act 1993 to prevent nuisance emissions from unregulated processes.
- DBC will continue to work together with the Kent Energy Centre to promote and implement energy efficiency measures in Dartford

The proposed actions will help work towards the NO₂ annual mean objective in the three second round AQMAs, in addition to NO₂ and PM₁₀ objectives in the A282 Trunk Road AQMA.

1 INTRODUCTION AND AIMS OF THE ACTION PLAN

1.1 Project Background

Dartford Borough Council has drawn up, with the assistance of Bureau Veritas, a Local Air Quality Management Action Plan for the three Air Quality Management Areas within DBC identified through the second round of review and assessment of air quality. The Action Plan is required to be undertaken as part of the local authority's statutory duties as defined within Part IV of the Environment Act, 1995.

Bureau Veritas has undertaken previous review and assessment reports for DBC, which includes the Further Assessment (2006).

1.2 Legislative Background

The latest Air Quality Strategy (AQS)¹ released in July 2007 provides the overarching strategic framework for air quality management in the UK and contains national air quality standards and objectives established by the Government to protect human health. The objectives for ten pollutants (benzene, 1,3-butadiene, carbon monoxide, lead, nitrogen dioxide, sulphur dioxide particulates - PM₁₀ and PM_{2.5}- and ozone) have been prescribed within the Air Quality Strategy based on The Air Quality Standards (England) Regulations 2007². The Objectives set out in the AQS for the protection of human health are presented in Table 1 below.

The Air Quality Standards (England) Regulations 2007² came into force on 15th February 2007. This brings together in one statutory instrument the Governments requirements to fulfil separate EU Daughter Directives through a single consolidated statutory instrument which is fully aligned with proposed new EU Air Quality Directive (CAFE – Clean Air For Europe)³.

The Environment Act 1995 gives local authorities duties and responsibilities that are designed to secure improvements in air quality, particularly at the local level. Part IV of the Act requires each local authority within the UK to periodically review and assess air quality in its area, and determine whether the prescribed objectives are likely to be achieved by the relevant future year. Where it appears that the air quality objectives will not be met by the designated target dates local authorities must declare an Air Quality Management Area (AQMA) and develop action plans in pursuit of the air quality objectives. Following the declaration in Tunbridge Wells, TWBC is required to develop an Action Plan for the A26 AQMA within 12 – 18 months.

Policy Guidance LAQM.PG(03) was published by the Government in 2003, which included guidance on the development of action plans. The NSCA have published guidance 'Air Quality Action Plans (2000)' and 'Air Quality: Planning for Action (2001)'. These guidance documents have been taken into account in development of this Action Plan for TWBC, alongside guidance provided by the Department for Environment, Food and Rural Affairs through its Air Quality Action Plan Help Desk, which provides examples of best practice and an Action Plan appraisal checklist.

¹ The Air Quality Strategy for England, Scotland, Wales and Northern Ireland (2007), Published by Defra in partnership with the Scottish Executive, Welsh Assembly Government and Department of the Environment Northern Ireland

² The Air Quality Standards Regulations 2007, Statutory Instrument No 64, The Stationary Office Limited

³ <http://ec.europa.eu/environment/air/cafe/index.htm>

Table 1: UK Air Quality Standards and Objectives

Pollutant	Objective	Concentration measured as	Date to be achieved by and maintained thereafter
Benzene	16.25 $\mu\text{g}/\text{m}^3$	running annual mean	31st December 2003
	5 $\mu\text{g}/\text{m}^3$	running annual mean	31st December 2010
1,3-Butadiene	2.25 $\mu\text{g}/\text{m}^3$	running annual mean	31st December 2003
Carbon monoxide	10 mg/m^3	maximum daily running 8 hour mean	31st December 2003
Lead	0.5 $\mu\text{g}/\text{m}^3$	annual mean	31st December 2004
	0.25 $\mu\text{g}/\text{m}^3$	annual mean	31st December 2008
Nitrogen dioxide	200 $\mu\text{g}/\text{m}^3$, not to be exceeded more than 18 times a year	hourly mean	31st December 2005
	40 $\mu\text{g}/\text{m}^3$	annual mean	31st December 2005
Particles (PM_{10})	50 $\mu\text{g}/\text{m}^3$, not to be exceeded more than 35 times a year	24 hour mean	31st December 2004
	40 $\mu\text{g}/\text{m}^3$	annual mean	31st December 2004
Particles ($\text{PM}_{2.5}$)	25 $\mu\text{g}/\text{m}^3$	Annual mean	2020
	Target of 15% reduction in concentrations at urban background ⁴	annual mean	In urban areas between 2010 and 2020
Sulphur dioxide	266 $\mu\text{g}/\text{m}^3$, not to be exceeded more than 35 times a year	15 minute mean	31st December 2005
	350 $\mu\text{g}/\text{m}^3$, not to be exceeded more than 24 times a year	hourly mean	31st December 2004
	125 $\mu\text{g}/\text{m}^3$, not to be exceeded more than 3 times a year	24 hour mean	31st December 2004
Polycyclic aromatic hydrocarbons	0.25 ng/m^3 B(a)P ⁵	Annual average	31st December 2010
Ozone	100 $\mu\text{g}/\text{m}^3$, not to be exceeded more than 10 times a year	8 hour mean	31 December 2005

1.3 Scope of the Action Plan

The purpose of the Action Plan is to provide the means through which the local authority through joint working with the County Council, Highways Agency and other relevant organisations can deliver viable measures that will work towards achieving the Air Quality Objectives within an AQMA. The aim is also to encourage active participation in the achievement of action plan measures by consulting the local community and raising awareness of air pollution issues.

Local authorities are required to prepare a written Action Plan for an AQMA, setting out the action plan measures they intend to take forward and the potential costs and

⁴ 25 $\mu\text{g}/\text{m}^3$ is a concentration cap combined with 15% reduction

⁵ Benzo(a)Pyrene

benefits of these measures. The Further Assessment provides the technical backup for the measures to be included within the Action Plan. The Action Plan should refer to the findings of the Further Assessment in terms of source apportionment (i.e. where emissions are coming from) so that action plan measures are targeted appropriately.

The Action Plan should contain simple estimates of the costs and benefits and timescales for implementing the proposed action plan measures, so that measures can be prioritised for implementation and subsequently monitored. The Action Plan should also indicate how far the measures will work towards achieving the Objectives.

1.4 Reporting of Action Plan

The Dartford Town and Approach Roads AQMA, A226 London Road AQMA and Bean Interchange AQMA have been declared during the second round of air quality review and assessment due to road traffic emissions. The A282 Dartford Tunnel Approach Road has already been subject to declaration during the first round of review and assessment.

Kent County Council (KCC) is the relevant transport authority for roads on the local network and is working jointly with DBC on transport measures within the Borough. County Councils have a duty under section 86 (3) of the Environment Act 1995 to put forward proposed actions which they themselves can implement to work towards meeting the air quality objectives in AQMAs. KCC have included measures within the air quality section of the 2nd Local Transport Plan (LTP). The Highways Agency is the relevant transport authority for the motorways and trunk roads and is working in partnership with Dartford Borough Council on action plan measures for the A282 Dartford Tunnel Approach Road AQMA. The Highways Agency is also the relevant transport authority for the A2 Trunk Road and therefore is responsible for direct actions within the Bean Interchange AQMA.

The Action Plan reflects the relevant organisational responsibilities for actions within the AQMAs and proposed measures (Section 7) are reported as:

- Direct actions proposed for the AQMAs in Dartford (responsibility of KCC and the Highways Agency in partnership with DBC);
- Indirect actions Borough-wide to improve air quality throughout the Dartford area, including the AQMAs (responsibility of DBC and KCC).

2 OVERVIEW OF AIR QUALITY IN DARTFORD

The main source of air pollution in the Borough is road traffic emissions from major roads, notably the M25/A282 Dartford Tunnel Approach Road, A2 Trunk Road and a number of strategic urban roads approaching Dartford town centre. Other pollution sources, including industrial, commercial and domestic sources, also make a contribution to background pollution concentrations.

A summary of DBC's second round of review and assessment of air quality, which commenced in 2003, is shown in Table 2. The individual stages are summarised briefly with respect to outcome below:

- *Updating and Screening Assessment*

The Updating and Screening Assessment (2003) was the first phase of the second round review and assessment. Similar to Stage One of the previous round, there was consideration of the seven pollutants of concern to health and an assessment was made as to whether Air Quality Objectives for these pollutants would be met. Dartford Borough Council completed this in May 2003, with the conclusion that a Detailed Assessment was required for the nitrogen dioxide (NO₂) annual mean Objective in Dartford Town Centre (Highfield Road/Instone Street), along the A226 London Road (through Greenhithe and Swanscombe), the A206 University Way, and five heavily trafficked junctions with nearby relevant exposure:

- Bean Interchange
- A226/B255 St Clement's Way
- A226 East Hill/Park Road
- A226 The Brent/Watling Street/St Vincents Road
- A225 Lowfield Street/Princes Road.

A Detailed Assessment of fine particulates (PM₁₀) was also required at the busy A226/B255 St Clement's Way junction in Greenhithe.

All other Air Quality Objectives were expected to be met.

- *Detailed Assessment*

The Detailed Assessment (2004) considered the nitrogen dioxide (NO₂) and fine particle (PM₁₀) annual mean objective at the eight locations identified in the Updating and Screening Assessment, through dispersion modelling using ADMS-Roads and additional monitoring undertaken at relevant receptor locations.

The results showed that there were predicted exceedences of the NO₂ annual mean Objective identified at the nearest receptors to all eight locations assessed and predicted exceedences of the PM₁₀ 24hr mean Objective identified at the nearest receptors to A226/B255 St Clement's Way.

The Detailed Assessment concluded that Dartford Borough Council should consider declaring Air Quality Management Areas (AQMAs) for those roads and junctions assessed on the basis of the potential exceedences in the assessment areas as highlighted in the Detailed Assessment Report, where exposure criteria were fulfilled. The detailed assessment also recommended that on the basis that the assessment was highly precautionary, façade-mounted NO₂ diffusion tube monitoring should be

employed on the nearest receptors to those junctions where predicted annual mean NO₂ values were within one standard deviation of the Objective. The Department for Environment, Food and Rural Affairs (DEFRA) accepted the Detailed Assessment conclusions.

The eight areas identified through the Detailed Assessment modelling to be exceeding the air quality objectives were:

For nitrogen dioxide annual mean objective:

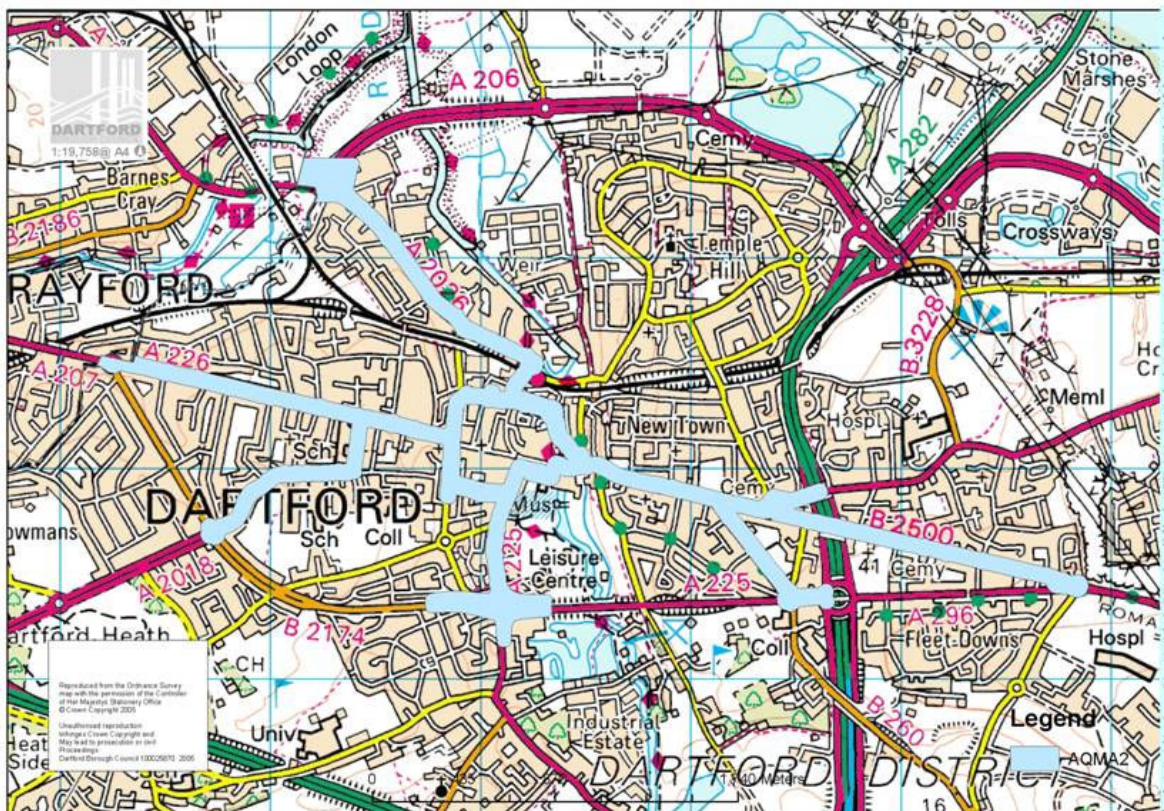
- Dartford Town Centre (Highfield Road/Instone Street)
- Along the A226 London Road (through Greenhithe and Swanscombe)
- A206 University Way/Burnham Road junction
- Bean Interchange
- A226/B255 St Clement's Way
- A226 East Hill/Park Road
- A226 The Brent/Watling Street/St Vincents Road
- A225 Lowfield Street/Princes Road.

For particulates (PM10) 24 hour mean objective:

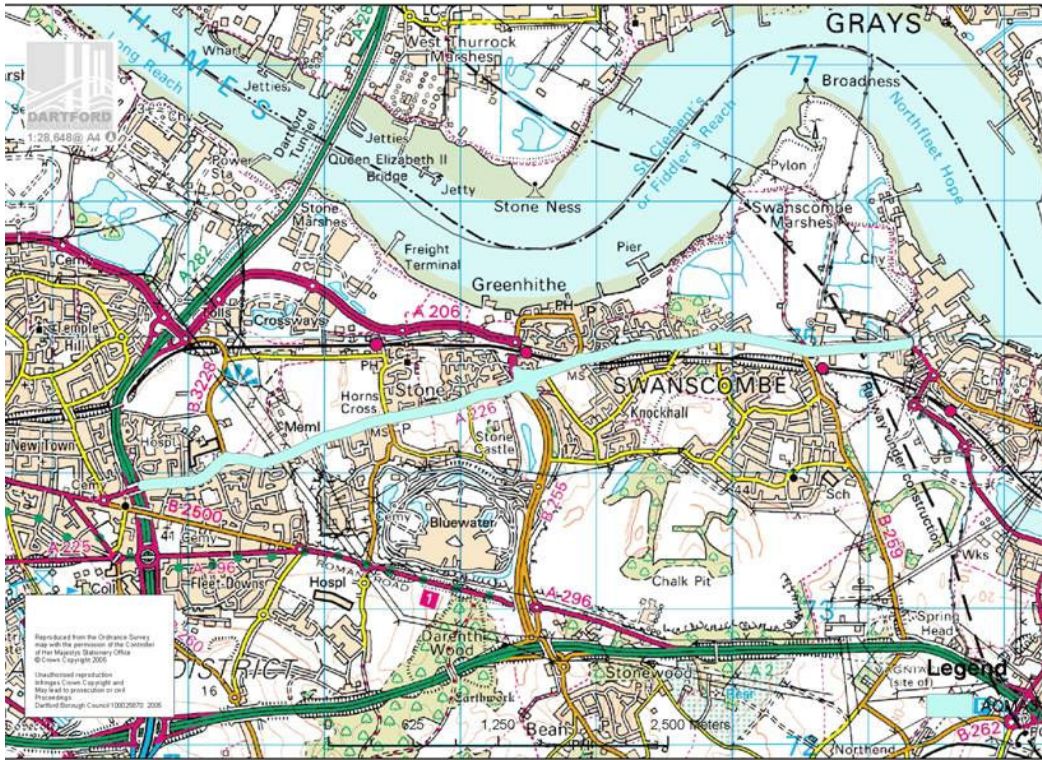
- A226/B255 St Clement's Way

DBC consolidated these areas of predicted exceedences into three main areas which focused on the main urban road network in the Dartford area. DBC declared the three areas as AQMAs in August 2006, as shown below.

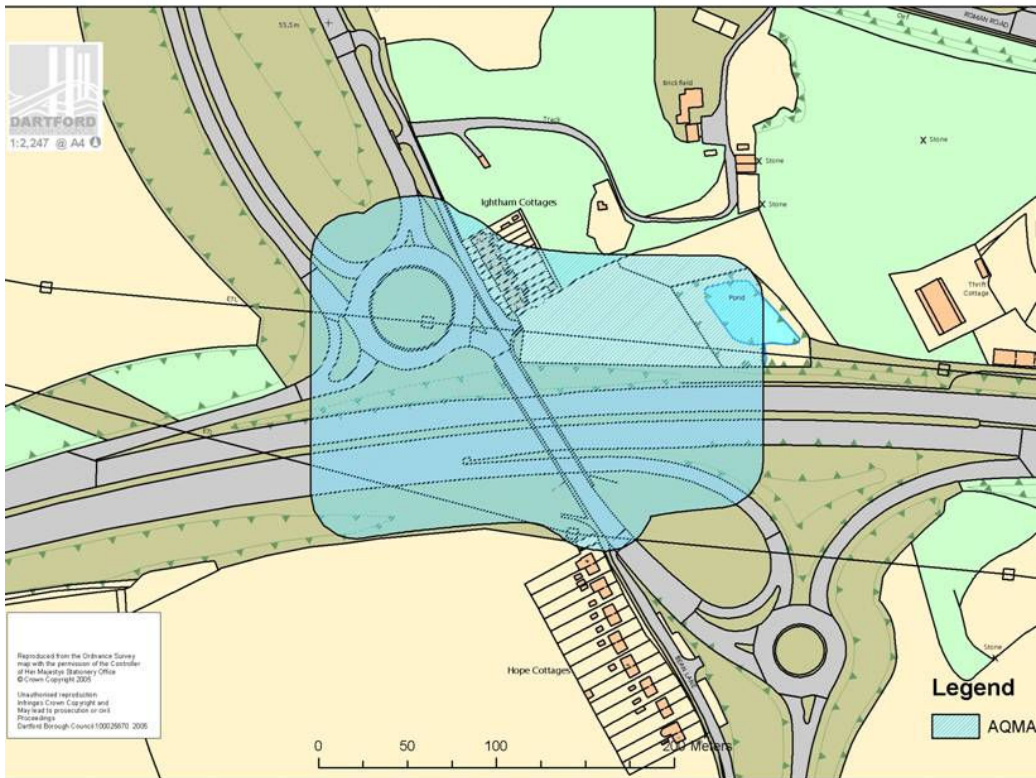
Dartford Town Centre and Approach Roads AQMA (For NO₂ Annual Mean Objective)



A226 London Road AQMA (For NO₂ Annual Mean Objective and PM₁₀ 24 Hour mean objective)



Bean Interchange AQMA (For NO₂ Annual Mean Objective)



- *Further Assessment*

The results of the source apportionment work from the Further Assessment indicate that road traffic emissions are the main source of NO_x emissions in the AQMAs. The HDV class vehicles are contributing disproportionately to NO_x emissions in the AQMA areas; contributing approximately half of NO_x from road traffic but being a relatively small proportion (%) of the vehicle fleet. With respect to PM₁₀ emissions, background sources are the most significant source of emissions, with local road traffic emissions contributing 33%.

Source apportionment of NO_x/PM₁₀ concentrations at building façades within the AQMAs

AQMA	NO _x concentrations 2005	%	µg/m ³
Bean Interchange AQMA	Background	16.6	33.6
	Road traffic	83.4	168.5
Ightham Cottages (x=558619, y=172775)	HDV*	57.7	116.5
	LDV*	25.7	52.0
London Road AQMA	Background	26.2	37.7
	Road traffic	73.8	106.2
Ingress Park (x=559068, y=174855)	HDV*	51.7	74.4
	LDV*	22.1	31.8
London Road AQMA	Background	18.5	37.7
	Road traffic	81.5	165.7
Ivy Villas (x=558482, y=174679)	HDV*	53.7	109.1
	LDV*	27.8	56.6
Dartford Town Centre and approach roads AQMA	Background	36.7	41.9
	Road traffic	63.3	72.2
	HDV*	47.5	54.2
	LDV*	15.8	18.1
Burnham Road (x=553272, y=175279)			
	Background	38.2	59.7
	Road traffic	61.8	96.7
	HDV*	28.0	43.8
Dartford Town Centre and approach roads AQMA			
	Background	38.2	59.7
	Road traffic	61.8	96.7
	HDV*	28.0	43.8
Princes Road/Lowfield Street junction (x=554080, y=175279)			
	LDV*	33.8	52.9
Dartford Town Centre and approach roads AQMA	Background	36.9	59.7
	Road traffic	63.1	102.2
	HDV*	40.6	65.8
Instone Street/Highfield Road junction (x=553941, y=173882)			
	LDV*	22.5	36.5
Dartford Town Centre and approach roads AQMA	Background	53.3	59.7
	Road traffic	46.7	52.3
	HDV*	25.6	28.6
A226/Park Road junction (x=555101, y=173841)			
	LDV*	21.1	23.7
Dartford Town Centre and approach roads AQMA	Background	44.4	59.7
	Road traffic	55.6	74.6
The Brent/Watling Street junction (x=555406, y=173810)	HDV*	25.6	34.3
	LDV*	30.0	40.3

AQMA	PM₁₀ concentrations 2005	%	µg/m³
London Road AQMA Ivy Villas (x=558482, y=174679)	Background	67.0	23.8
	Road traffic	33.0	11.8
	HDV*	16.5	5.9
	LDV*	16.5	5.9
<i>*As proportion of road traffic emissions contribution</i>			

The maximum predicted concentrations of NO_x/NO₂ at worst case receptors and required reduction in NO_x emissions for the 3 AQMAs are shown below. The maximum predicted concentration of PM₁₀ at the worst case receptor and required reduction in PM₁₀ emissions for the London Road AQMA are also shown below

(1) Bean Interchange AQMA

The maximum NO_x reduction required within the Bean Interchange AQMA at the façade is 81.5 µg/m³ (equivalent to a 40% improvement in NO_x) and NO₂ reduction is 10.8µg/m³ (equivalent to a 21% improvement in NO₂) in 2005.

By 2010 (the EU Limit target date), through the implementation of national policies, the NO_x/NO₂ concentrations are predicted to reduce as follows. In 2010, the maximum NO_x reduction required within the Bean Interchange AQMA at the façade is 26.5 µg/m³ (equivalent to a 17% improvement in NO_x) and NO₂ reduction is 3.7µg/m³ (equivalent to a 9% improvement in NO₂).

Consequently, the formulation of an Action Plan should aim to reduce the levels of NO_x/NO₂ within the AQMA by this amount.

(2) A226 London Road AQMA

Two main hotspots were considered along London Road, where monitored concentrations and modelled predictions have shown exceedences of the annual mean NO₂ objective.

St Clements Way junction: A226/B255

The maximum NO_x reduction required at the St Clement's Way junction at the façade is 89.0 µg/m³ (equivalent to a 44% improvement in NO_x) and NO₂ reduction is 12.1µg/m³ (equivalent to a 23% improvement in NO₂) in 2005.

By 2010 (the EU Limit target date), through the implementation of national policies, the NO_x/NO₂ concentrations are predicted to reduce as follows. In 2010, the maximum NO_x reduction required at the St Clement's Way junction at the façade is 34.7 µg/m³ (equivalent to a 22% improvement in NO_x) and NO₂ reduction is 4.9µg/m³ (equivalent to a 11% improvement in NO₂).

The maximum PM₁₀ reduction at the St Clement's Way junction at the façade is 3.7µg/m³ on the annual mean, to achieve a number of exceedences <35 (from the maximum predicted of 52). By 2010 (the EU Limit target date), through the implementation of national policies, the PM₁₀ 24 hour mean objective is predicted to be met.

Consequently, the formulation of an Action Plan should aim to reduce the levels of NO_x/NO₂ and PM₁₀ within the AQMA by this amount.

Ingress Park, London Road

The maximum NO_x reduction required at the Ingress Park/London Road junction at the façade is 29.5 µg/m³ (equivalent to a 20% improvement in NO_x) and NO₂ reduction is 4.5µg/m³ (equivalent to a 10% improvement in NO₂) in 2005.

By 2010 (the EU Limit target date), through the implementation of national policies, the NO₂ annual mean objective is predicted to be met. Using the LAQM.TG(03) adjustment factors, the annual mean objective is predicted to be met by 2009 at this location.

PM₁₀ Objectives are predicted to be met in 2005 and 2010 at this location.

(3) Town Centre and Approach Roads AQMA

Burnham Road/University Way Junction

The maximum NO_x reduction required at the Burnham Road/University Way junction at the façade is 5.3 µg/m³ (equivalent to a 5% improvement in NO_x) and NO₂ reduction is 0.9µg/m³ (equivalent to a 2% improvement in NO₂) in 2005.

By 2010 (the EU Limit target date), through the implementation of national policies, the NO₂ annual mean objective is predicted to be met. Using the LAQM.TG(03) adjustment factors, the annual mean objective is predicted to be met by 2006 at this location.

A225 Lowfield Road/ Princes Road Junction

The maximum NO_x reduction required at the Lowfield Street/Princes Road junction at the façade is 65.3 µg/m³ (equivalent to a 42% improvement in NO_x) and NO₂ reduction is 11.2µg/m³ (equivalent to a 22% improvement in NO₂) in 2005.

By 2010 (the EU Limit target date), through the implementation of national policies, the NO_x/NO₂ concentrations are predicted to reduce as follows. In 2010, the maximum NO_x reduction required at the Lowfield Street/Princes Road junction at the façade is 20.9 µg/m³ (equivalent to a 17% improvement in NO_x) and NO₂ reduction is 3.6µg/m³ (equivalent to a 8% improvement in NO₂).

Instone Street/Highfield Road

The maximum NO_x reduction required at the Instone Road/Highfield Road junction at the façade is 70.8 µg/m³ (equivalent to a 44% improvement in NO_x) and NO₂ reduction is 12.0µg/m³ (equivalent to a 23% improvement in NO₂) in 2005.

By 2010 (the EU Limit target date), through the implementation of national policies, the NO_x/NO₂ concentrations are predicted to reduce as follows. In 2010, the maximum NO_x reduction required at the Instone Road/Highfield Road junction at the façade is 25.2 µg/m³ (equivalent to a 20% improvement in NO_x) and NO₂ reduction is 4.3µg/m³ (equivalent to a 10% improvement in NO₂).

A226 East Hill/Park Road Junction

The maximum NO_x reduction required at the East Hill/Park Road junction at the façade is 68.7 µg/m³ (equivalent to a 43% improvement in NO_x) and NO₂ reduction is 11.7µg/m³ (equivalent to a 23% improvement in NO₂) in 2005.

By 2010 (the EU Limit target date), through the implementation of national policies, the NO_x/NO₂ concentrations are predicted to reduce as follows. In 2010, the maximum NO_x reduction required at the East Hill/Park Road junction at the façade is 23.3 µg/m³ (equivalent to a 19% improvement in NO_x) and NO₂ reduction is 4.0µg/m³ (equivalent to a 9% improvement in NO₂).

A226 The Brent/Watling Street/St Vincents Road Junction

The maximum NO_x reduction required at the Brent/Watling Street/St Vincents Road Junction at the façade is 101.2 µg/m³ (equivalent to a 53% improvement in NO_x) and NO₂ reduction is 16.1µg/m³ (equivalent to a 29% improvement in NO₂) in 2005.

By 2010 (the EU Limit target date), through the implementation of national policies, the NO_x/NO₂ concentrations are predicted to reduce as follows. In 2010, the maximum NO_x reduction required at the Brent/Watling Street/St Vincents Road Junction at the façade is 48.2 µg/m³ (equivalent to a 32% improvement in NO_x) and NO₂ reduction is 7.8µg/m³ (equivalent to a 16% improvement in NO₂).

Consequently, the formulation of an Action Plan should aim to reduce the levels of NO_x/NO₂ within the AQMA by this amount.

Table 2: Summary of the second round review and assessment process for DBC

Source	Updating Screening Assessment (2003)	and	Detailed Assessment (2004)	Further Assessment (2006)
Road Traffic	SO ₂		<p>Exceedences of the annual mean NO₂ annual mean Objective resulted in declaration of the Dartford Town Centre and Approaching Roads AQMA and Bean Interchange AQMA due to road traffic emissions.</p> <p>Exceedences of both the annual mean NO₂ annual mean Objective and 24 hour mean PM₁₀ Objective resulted in declaration of the A226 London Road AQMA.</p>	<p>Further assessment of NO₂ and PM₁₀ in AQMAs.</p> <p>Support for continuance of three AQMAs – Action Plan required.</p>
	NO ₂	→		
	PM ₁₀	→		
	Carbon monoxide			
	Benzene			
	1,3 Butadiene			
	Lead			

3 EXISTING POLICIES AND STRATEGIES TO IMPROVE AIR QUALITY

There are a number of related policies and strategies at the local and regional level that can be tied in directly with the aims of the Air Quality Action Plan, and will help contribute to overall improvements in air quality across the Borough.

3.1 Local Plan / Local Development Framework

The Planning and Compulsory Purchase Act 2004 has introduced a new national planning system which has seen Local Plans replaced by Local Development Frameworks (LDFs) which will comprise of a series of inter-related Local Development Documents (LDDs). The new proposals are intended to speed the plan-making process up by producing more focused, flexible, and slimmer plans. A Strategic Environmental Assessment/ Sustainability Appraisal needs to be undertaken alongside plan preparation and also a Statement of Community Involvement. This Statement will identify how the Council intends to consult on the plan, in particular engaging those groups that are traditionally hard to reach.

The new Act makes transitional arrangements for local planning authorities to transfer from local plans to LDFs. Current adopted local plan policies can be “saved”, which means that they can still be used as the statutory basis for determining planning applications.

The Dartford Local Plan 2nd Review (September 2002) is the current Local Plan, which details planning policy and development criteria with respect to all development in the Borough. It is fundamental to the achievement of the aims of the Air Quality Action Plan to have a Local Plan that recognises the importance of air quality in terms of the environmental impact of development and the need for sustainable transport measures. Dartford Local Plan 2nd Review incorporates relevant policies of the Kent Structure Plan and addresses air quality issues the following policies (summarised):

Air Quality

NR10 Air Quality: Minimisation of Pollutants

Development proposals will only be permitted 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 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 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 meet National Air Quality Standards and that short and medium term impacts can be minimised to an acceptable level.

Cycling and Walking

Policy T4 – Planning permission will not be granted for a development that would prejudice the implementation or operation of the cycle route network.

Policy T15 – Cycle parking facilities must be provided in all new development proposals.

Policy T16 – Planning permission will only be granted if the layout of the proposed development minimises the need for car-borne travel and promotes walking, cycling and public transport.

Transport Schemes

Policies T1-T3 – relate to the safeguarding of land for the Fastrack Public Transport System, the Channel Tunnel Rail Link and Other Transport Schemes.

Policy DD1 – Outlines the public transport requirements which must be considered for all new developments including a specification of residential density and maximum distance to public transport stop.

Energy Efficiency

Policy DD11 – Planning permission will only be granted if the proposed development is designed to optimise water and energy conservation and minimise pollution.

Dartford Town Centre Area Action Plan

Cabinet in July 2007 agreed that the Dartford Town Centre Area Action Plan – Preferred Options document be approved for public consultation. Town Centre Area Plan includes redevelopment proposals for the town centre including various road layouts to improve congestion/air quality.

This submission document will be presented to Government following agreement of Cabinet and General Assembly of the Council. It follows consultation on the earlier document and takes into account the responses from that consultation. A decision by Cabinet is due 24th April 2008 and by General Assembly of the Council 28th April 2008.

3.2 Dartford Borough Council Local Agenda 21 (LA21) Strategy

LA21 originated from the Earth Summit in Rio de Janeiro in 1992. It incorporates the concept of sustainable development – meeting current needs without compromising the needs of future generations. The LA21 process enables communities to take an active role in conserving their local environment and improving their quality of life. DBC finalised its LA21 Strategy in May 2001 and this set out core aims and actions which can be tied in directly with the Air Quality Action Plan aim to improve local air quality.

These core aims include:

- Improving air quality and minimising pollution
- Making better use of natural resources and reduction of waste
- Safeguarding Habitat and Wildlife

- Improving Transport

The LA21 Strategy aims have largely been incorporated into the Kent Thameside Community Strategy and DBC Corporate Plan 2003 - 2007.

3.3 Kent Thameside Community Strategy (2003)

The Community Strategy (2003) has been drawn up for Kent Thameside, which includes the Boroughs of Dartford and Gravesham, by the Kent Thameside Local Strategic Partnership. The Strategic Partnership includes representatives from the Borough Councils, as well as a wide range of community organisations. The Environment is listed as a key issue within the Strategy and the Strategy promotes sustainable development and transport in the area. One of the objectives is to:

'act to address local air quality issues where necessary and traffic pollution in particular. This will include promotion of clean fuel technology, Green Travel Plans and influencing the patterns of development to help reduce the number of dwellings impacted by poor air quality. In addition, we will continue to work with firms to monitor and control industrial emissions'.

3.4 Dartford Borough Council Corporate Plan (2007 - 2008)

The Dartford Corporate Plan sets out actions and targets with the aim of making Dartford "the place of quality and choice, a place where people choose to live, work and enjoy their leisure time." To support the Council's vision, there are five priority service area themes. The themes cover: citizenship and community, regeneration, leisure time, environment and housing. Important aims outlined in the Corporate Plan which have implications in terms of improving air quality include:

- Ensure that development in Dartford is sustainable;
- Ensure the Local Development Framework policies meet sustainability appraisal criteria, as required by the Planning and Compulsory Purchase Act 2004, including the development of specific targets relating to the sustainable use of resources. Target: 95% of Local Development Framework Policies meet sustainability appraisal criteria.

3.5 Kent Environment Strategy (2003)

The Kent Environment Strategy was drawn up by Kent County Council in partnership with the District Authorities. The objectives of the Strategy relevant to air quality are shown below in Table 3.

Table 3: Kent Environment Strategy Objectives for Air Quality

What?	Why?	Who?	When?
Meeting National Air Quality Objectives			
Develop and implement strategies and action plans to work towards achieving the National Air Quality Objectives.	To reduce the risks on health and the environment from high levels of pollution.	DCs & MC assisted by KMAQP	Prepare, implement and revise AQMA Action Plans from 2002; designation of further AQMAs as necessary
Reducing the impact on environmental health			
Establish and disseminate information about Nitrogen Dioxide (NO ₂), Sulphur Dioxide (SO ₂), Carbon Monoxide (CO), Particulates (PM ₁₀ and PM _{2.5}) and Ozone (O ₃) levels.	To provide a better understanding of air pollution, determine trends, inform the future action required and raise the awareness of those susceptible to high levels of pollution.	Kent and Medway Air Quality Monitoring Network (DCs & MC)	- Monthly and annual monitoring reports - Daily bulletins via the internet (www.kentair.org.uk)
Planning new development appropriately			
Incorporate air quality policies in the Kent and Medway Structure Plan and District Council Local Plans informed by the Kent and Medway Air Quality Model's (KMAQM) predictions of the air quality impacts associated with cumulative effects of proposed new development.	To minimise the impact on air quality from future development across Kent, particularly in areas identified as having poor air quality.	KCC, DCs & MC	- KMSP - Draft on deposit 2003 Local Plan Review – ongoing - Ongoing use of the KMAQM to inform planning application decisions
Raise awareness and encourage greater interaction amongst the relevant decision-makers including environmental health, transport and land use planning officers.	To ensure that the impact of development on air quality is appropriately assessed.	KMAQP	Ongoing
Regulate industrial processes through Integrated Pollution Prevention Control (IPPC) and Local Air Pollution Control (LAPC) and raise environmental standards through the use of environmentally friendly technology.	To minimise the impact of current and proposed industrial processes and associated emissions such as volatile organic compounds.	EA, District Councils, DCs & MC	- Ongoing IPPC and LAPC regulation - Raised environmental standards as part of 4 year review of IPPC and LAPC authorisations - Ongoing through planning application decisions
Incorporate more sustainable forms of transport, incentives and traffic management measures into the Local Transport Plan (LTP).	To move towards methods of transport which cause less pollution and promote walking, cycling and public transport.	KCC in consultation with DCs & MC	Strengthen policies in Local Transport Plan by 2004
Tackling transboundary pollution			
Tackle transboundary pollutants (i.e. ozone and particles) at a regional level by sharing information and working together with neighbouring authorities in the UK and northern France.	To address pollution at a regional level as airborne pollution does not recognise local authority boundaries.	KCC on behalf of the KMAQP	Ongoing through transnational projects

The Kent Environment Strategy Progress Report (2007) provides an update with respect to progress with actions relating to air quality, as shown below:

- Despite reductions in some air pollutants, overall air quality in Kent is showing no clear improvement
- Long-standing problems have been exacerbated by traffic growth, increased ozone pollution from distant sources and extreme weather such as heat waves which are becoming more likely as a result of global warming
- The identification of new Air Quality Management Areas (AQMAs) is an indication of the problem – but only a first step in solving it
- The effort going into ‘monitoring and action planning’ is still not being matched by ‘implementation’ of actual measures to improve air quality
- Reducing emissions from HGV and car traffic remains the key challenge to improve air quality

The Kent Partnership will be reviewing the Kent Environment Strategy in 2007 and publishing a revised Strategy early in 2008.

3.6 Kent Local Transport Plan for Kent 2006-11

In 1998, the Government published a Transport White Paper "A New Deal for Transport" which outlined their commitment to a more integrated and sustainable transport system with greater emphasis on alternative forms of transport to the private car. The Government also introduced a system of Local Transport Plans (LTPs) which each highway authority had to prepare every five years which would outline their aims to improve local transport and the funding they required to do this. In the second round of LTPs 2006-11, the Government outlined four shared priorities for local transport, one of which was air quality and required LTPs to consider improvements to the transport network which would reduce air pollution in all declared Air Quality Management Areas.

The Local Transport Plan for Kent 2006-11 which was submitted in March 2006, aims to "stabilise and, where possible, reverse the adverse effect of transport and its infrastructure on the natural and built environment and on local communities". Specifically, the LTP contains an air quality policy "to seek a reduction in traffic pollution on the local road network". A target to reduce air pollution has also been set in the LTP to "reduce the annual average level of NO₂ emissions at Kent's AQMAs to 40µg/m³ by 2010/11."

The proposed schemes for the Borough of Dartford within the 2nd LTP focus on the integration of public transport (rail, bus and taxi), development of a new Thames River crossing east of Dartford to improve links to London and its airports, and development of the Dartford-Gravesend 'Fastrack' bus link. The Plan includes proposals for a number of schemes beneficial to the quality of life within Dartford and the surrounding Boroughs which will be funded using revenues from the Dartford Tunnel. Schemes focus upon increasing security in public areas and on public services and replacing or refurbishing public transport fleets. The 2nd LTP also includes measures to support Travel Plans including Safer Routes to Schools and workplace travel plans, new cycle routes, the implementation of a walking strategy,

improved access to railway stations, interchanges and circulation and parking improvements in the town centre.

Relevant proposed schemes likely to have both a direct and indirect impact on local air quality within the AQMAs are incorporated within the 2nd LTP and form the foundation for this Action Plan.

3.7 Kent and Medway Structure Plan 2006

The Kent and Medway Structure Plan, produced jointly by Kent County Council and Medway Council, was adopted in July 2006 and provides for development and change in Kent and Medway up to 2021. The Structure Plan policies will provide the foundation for the Tunbridge Wells Local Development Framework, together with the emerging South East Plan. This will replace the Structure Plan when adopted.

There are three policies relating to air quality in the Kent and Medway Structure Plan:

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.”

With respect to transport policies and proposed schemes, there are a number of proposals of direct relevance to transport emissions in the Dartford AQMAs and wider Borough:

Policy TP2: Assessment Criteria for Transport Proposals

“Proposals for enhancing the transport network in Kent and Medway will be assessed according to their social, transport, economic and environmental effects with specific regard to:.....the likely effects on air quality and carbon dioxide emissions...”

Policy TP7: Further Thames Crossing

“The strategic planning and transport authorities (Kent County Council and Medway Council) will seek to ensure that Government investigates fully, and quickly, the need for, and location of, a further multi modal crossing of the River Thames for passengers and freight, taking into account:

- the transport, economic and regeneration benefits to Kent;
- the balance of beneficial and adverse impacts on Kent communities and the well being of settlements including potential air quality and noise impacts;
- the protection of the nationally and internationally important natural environment to the east of Gravesend;
- the ability to integrate a crossing with the existing road and rail network in Kent and the impacts associated with any consequential links with these networks.

In reaching a judgement as to whether there is a net benefit to Kent of a further crossing the strategic planning authorities will take into account the criteria of Policy TP2.”

Policy NK1: Dartford and Gravesham

“At, and between, the principal urban areas of Dartford and Gravesend/Northfleet, major mixed use developments based on previously developed or other damaged land will be comprehensively planned, including appropriate measures to integrate new development with existing communities, and phased in conjunction with the provision of new highway and public transport infrastructure, community services and facilities, air quality management initiatives, flood defences, and water resources and wastewater treatment infrastructure”

“Proposals for the main strategic development locations should contribute to enhancing the quality of the built, open and natural environment, including provision of elements of the Green Grid, and support a pattern, form and density of development that reflects accessibility to existing and planned public transport provision”

Table TP6: Existing or Predicted Problems on the Motorway & Trunk Road Network Requiring Integrated Transport Solutions

1) TRANSPORT CORRIDOR LINKS TO OTHER POLICIES/COMMENTS POSSIBLE START SCHEMES INCLUDED IN THE REGIONAL TRANSPORT STRATEGY (2004)

A2 Bean Interchange

To provide access between the major development sites in Kent Thameside and the A2

Possible Start Date 2008-2010

2) ROADS SUBJECT TO EXISTING CONGESTION

A282 Dartford Crossing

Possible Start Date Post 2016

3) ADDITIONAL TRANSPORT CORRIDORS POTENTIALLY UNDER PRESSURE IN THE SUSTAINABLE COMMUNITIES PLAN GROWTH AREAS OF KENT THAMES GATEWAY A2 (M25 – M2)

Future growth in the Thames Gateway could put this section of the improved A2 under pressure. Possible Start Date Post 2016.

Table TP8: Other Strategic Transport Schemes to be Promoted Through Local Transport Plans

1) SCHEMES IN SUSTAINABLE COMMUNITIES PLAN GROWTH AREAS OF KENT THAMES GATEWAY

Kent Thameside: Fastrack Future Phases (including North Dartford, Stone, Eastern Quarry, Northfleet Riverside, Ebbsfleet, Swanscombe Peninsula, Thames Way)

To link new development in Kent Thameside to the Fastrack core network provided by Phase 1, started in 2004, Phasing 2005 to 2018

Kent Thameside: London Road/St. Clements Way Junction

To facilitate development of Eastern Quarry, Stone Castle, St Clements Way and Swanscombe Peninsula. Possible Start Date 2009.

3.8 Route Management Strategies

Route Management Strategies are “*techniques developed by the Highways Agency to provide a framework for managing individual trunk routes as part of wider traffic networks. RMS's will interlock with Local Transport strategies (set out in Local Transport Plans) within the context established by Regional Planning guidance (Ref para 3.1.34 "A New Deal For Transport: Better for Everyone")*”

In the Dartford area, there are three strategies of relevance: the A2 Bean-Cobham Route Management Strategy Phase 2; the A2/A282/M25 Route Management Strategy and the Dartford-Thurrock River Crossing Route Management Strategy.

In the A2 Bean-Cobham Route Management Strategy, widening of the road to four lanes with hard shoulders is proposed in order to alleviate congestion. The strategy highlights the issue of air quality along this stretch of the A2 and predicts the improvements to be highly beneficial to the air quality of the area.

In the A2/A282/M25 Route Management Strategy issues identified with respect to Dartford include the problems of heavy congestion at Junction 2 of the M25. The Junction 2 improvements, includes improvements to junction slips in addition to widening of the A2 from the M25 to Bean Interchange (AQMA).

The Dartford – Thurrock River Crossing Route Management Strategy relates to the control of traffic flow within and approaching the crossing and the implications in terms of reducing congestion and road safety.

3.9 South Coast Multi-Modal Study (2002)

The South Coast Corridor Multi Modal Study aims to identify and investigate congestion, safety and environmental problems of transport along the south coast between Southampton and Thanet (Kent), and propose measures aimed at resolving these problems and improving access to and between regeneration areas and other areas of economic activity.

With respect to Dartford, the Study highlights the importance of pursuing measures to reduce congestion in the South Coast corridor, notably proposed improvement schemes to the A2 / A282 in Dartford.

3.10 Draft South East Plan (Regional Spatial Strategy) (2006)

The South East England Regional Assembly (SEERA) submitted the draft South East Plan to Government on 31st March 2006. The draft Plan provides a framework for the region for the next 20 years to 2026. Consultation on behalf of an independent panel of inspectors ran from 31 March until 23 June 2006. The Examination in Public ran from 28 November 2006 until 30 March 2007 and is expected to lead to Government approval of a final South East Plan in early 2008.

Specifically, with respect to Dartford, the number of dwellings proposed for Dartford Borough is 15,700 over 20 years, of which the majority are to be located within Dartford itself. In addition, new employment locations will be provided if required to keep employment and housing growth in balance in Dartford.

Proposals are made within the draft Plan to assist with the development proposals:

- A2 / A282 Improvements / junction improvements / new link, Cost (£79m), 2006-2011;
- London Road / St Clements Way Junction improvements, Cost (£10m), 2006-2011;
- Kent Thameside Fastrack Scheme, Cost (£14m), 2006-2021.

4 FINANCING

Direct measures proposed for the three second round AQMAs are the responsibility of Kent County Council (KCC), and will largely be funded through LTP bids, in addition to revenue from the Dartford Crossing.

Indirect general measures to improve air quality in the area will be funded by DBC, such as air quality monitoring and promotional activities, or by KCC through the Kent LTP. The LTP has allocated funding to a number of schemes in the Borough of Dartford that tie in with Action Plan measures to improve air quality in the area.

LTP2 2006/7 – 2010/11 Funding allocations (proposed):

- Dartford town centre UTMC - £50,000
- Safer Routes to School - £170,000
- Everards Link/Greenhithe station improvements - £1,250,000
- St Clements junction (A226/B255) improvements - £1,100,000
- Real Time passenger information (RTPI) - £180,000
- Cycleway/footway improvements, Princes Road - £230,000
- Dartford rail station improvements - £35,000
- Swanscombe rail station improvements - £250,000

Dartford Crossing Revenue – Supplementary bid details (proposed):

- Completion of Greenhithe Station Improvements - £500,000
- Upgrade of Kent Bus System to facilitate real time passenger information (RTPI) - £95,000
- RTPI signs in Kent Thameside £270,000

Annual funding for Quality Partnerships, Safer Routes to School, Cycle Strategy and Walking Strategy has been made available through LTP bids. DBC will work together with KCC to review current bids for the area in the light of the findings of the review and assessment of air quality. Additional bids will be made as necessary to secure further improvements in air quality.

5 CONSULTATION

Under Schedule 11 of the Act, Local Authorities are required to consult on their draft LAQM Action Plan. It is important for the success of the Action Plan to have involvement by all local stakeholders including local residents, community groups and local businesses in the drawing up the Action Plan in addition to their active participation in achieving the action plan measures. The Action Plan has been drawn up having due regard to comments from relevant environmental health and transport representatives from DBC and KCC, as part of the DBC Air Quality Working Group.

The draft Action Plan has been sent to the following statutory and non-statutory consultees:

- The Secretary of State
- The Highways Agency
- The Environment Agency
- Kent County Council
- Primary Care Trusts
- DBC Air Quality Working Group
- DBC Councillors and Officers
- Neighbouring local authorities
- Local residents within the AQMAs
- Relevant local businesses, community groups and forums
- Other relevant local stakeholders

All comments from both Statutory and non-statutory consultees received on the draft Action Plan will be considered and incorporated where appropriate into the current Action Plan. The time period of the consultation will be a minimum of 8 weeks.

6 DIRECT AND INDIRECT MEASURES

The sections below outline the direct measures for the AQMAs in Dartford and indirect measures to improve air quality throughout the Borough.

Direct measures to reduce NO₂ and PM₁₀ concentrations within the A282 Tunnel Approach Road AQMA have been proposed within the adopted Action Plan for this first round AQMA. These have been reviewed within section 7.1

Direct measures to reduce NO₂ and PM₁₀ concentrations within the second round AQMAs concentrate on the dominant sources of emissions – road traffic on the local road network and the A2 Trunk Road (for the Bean Interchange AQMA), and are set out in section 7.2.

Indirect measures target those general emissions within an area that aim to further reduce background levels of pollution above and beyond that likely to be achieved by existing national and international agreements. The general measures are set out in section 7.3.

6.1 Direct Measures for A282 Tunnel Approach Road AQMA

Dartford Borough Council already has an adopted Action Plan in place for the A282 Dartford Tunnel Approach Road AQMA. Direct measures for this AQMA are the responsibility of the Highways Agency. Progress with these actions has been reported to Defra annually, although to date no direct action for this AQMA has been undertaken.

The direct measures that have been considered for this AQMA are reviewed below.

Action 1: Lobbying Central Government for national actions a) to c) on the A282

- a) Improved existing rail freight
- b) New rail freight infrastructure
- c) New Lower Thames Crossing

There are also currently no firm proposals for a Lower Thames Crossing, and considerable further work will need to be carried out to evaluate the options for such a proposal and what effect such options will have. It is unlikely that a Lower Thames Crossing will be implemented within the next 10 years.

Action 2: Speed restriction and enforcement

The Highways Agency has reported that a scheme is being implemented to speeds in the AQMA for northbound traffic between north of the J1b and the Dartford crossing toll plaza. Active traffic management systems trials are being undertaken in other motorway AQMAs and therefore further speed controls may be investigated in future.

Kent Police Safety Camera Team has stated that the A282 does not meeting current Department For Transport criteria and there are no plans to install cameras on this road.

Action 3: Use of variable message signs

No action undertaken to date.

Action 4: Assessment of the impact of the Dartford Crossing toll system

No action undertaken to date.

Action 5: Improved screening

No action undertaken to date.

Highways Agency proposals:

The M25/A282/A2 Junction improvements & A2 widening to Bean Interchange are currently under construction. The proposals are aimed at improving traffic flow and capacity of the M25/A282/A2 junction and the A2 between this junction and the Bean Interchange for Bluewater. There are no significant air quality impacts predicted to occur at properties within the A282 AQMA.

6.2 Direct Measures for the Dartford Town Centre and Approach Road AQMA, A226 London Road AQMA and Bean Interchange AQMA

The following provides the outcome of discussions with DBC, KCC and the Highways Agency representatives with respect to a number of action plan measures that have been proposed to reduce NO_x/NO₂ and PM₁₀ emissions in the three second round AQMAs in pursuit of the Air Quality Objectives.

Action 1: Encourage modal shift through cycleway/footpath improvements

The 2nd LTP proposes cycleway/footway improvements along Princes Road to extend the existing cycle network and encourage greater usage. Construction of cycle/footway facilities would be on the south side of Princes Road between Darenth Road and Lowfield Street. This has the potential for air quality benefits within the Dartford Town Centre and Approach Roads AQMA, through encouraging modal shift, notably at the busy A296 Princes Road/A255 Lowfield junction, which currently suffers from congestion and poor air quality.

As part of the integrated transport strategy, improved pedestrian links are also proposed within Dartford Borough to Bluewater shopping centre and Dartford leisure centre from surrounding communities. Encouraging modal shift from the private car for journeys to Bluewater shopping centre has the potential to improve air quality in the Bean Interchange AQMA, where the major contributor to traffic flows is Bluewater shoppers.

Objective	Encourage modal shift through cycleway/footway improvements and reduce the use of the car for short journeys into the town centre and to Bluewater.
Responsibility	KCC
Air Quality Impacts	Low
Non Air Quality Impacts	Health benefits through exercise; reduced congestion; improved journey times
Perception	Likely to be perceived as positive
Cost-effectiveness & Feasibility	Cost – Low (£230,000) High feasibility and cost-effectiveness
Funding	LTP
Timescale	2007/8 – 2009/10

Action 2: Traffic Management improvements– Dartford Town Centre UTMC

There are proposals within the 2nd LTP which have the potential to improve local air quality through improvements to signalisation (linked to UTMC) and junction improvements in Dartford Town Centre.

The 2nd LTP includes proposals for Dartford Town Centre improvements to the Dartford Ring Road system. This scheme forms part of a large-scale development proposal to regenerate Dartford Town Centre and would have a direct impact on the Dartford Town Centre and Approach Roads AQMA notably on streets such as Instone Street and Highfield Road, where congestion is a major cause of elevated NO₂ annual mean concentrations.

The financing of the Dartford Town Centre regeneration programme has yet to be agreed. Although the UTMC scheme was originally proposed for year one of the 2nd LTP (2006/7), the timescale is therefore likely to be longer term (2008/9 at the earliest).

The UTMC scheme would include all the traffic signals on the Dartford Ring Road:

- Hythe Street/Westgate Road
- Home Gardens/East Hill
- West Hill/Highfield Road

As well as Princes Road/Lowfield Street, Darenth Road/Princes Road and Princes Road/Shepherds Lane junctions.

Objective	To smooth traffic flow through improvements to junctions in order to reduce emissions from stop, start driving. Should tackle congestion hotspots.
Responsibility	KCC/Developer
Air Quality Impacts	Moderate – Dartford Town Centre and Approach Roads AQMA. Air quality improvements will largely be localised, where NO _x emissions are due to low speeds and congestion.
Non Air Quality Impacts Perception	Improvements in journey times; potential for public transport improvements Likely to be perceived as positive as part of the overall regeneration scheme for Dartford town centre
Cost-effectiveness & Feasibility	£50,000 (LTP bid) Additional costs?
Funding	LTP/Developer
Timescale	2008/9

Action 3: Junction Improvements: St Clements A226/B255

The A226/B255 St Clements junction is a significant traffic node within the Borough, which suffers from congestion at peak times and poor air quality. Proposed large-scale development in the area is likely to exacerbate the congestion and air quality issues. This junction is within the A226 London Road AQMA.

There are proposals within the 2nd LTP to improve the A226/B255 junction (with assistance from developer funding) through grade separation to ease congestion and improve local air quality.

Objective	To smooth traffic flow through improvements to junctions in order to reduce emissions from stop, start driving. Should tackle congestion hotspots.
Responsibility	KCC/Developer
Air Quality Impacts	High – A226 London Road AQMA, notably in the vicinity of the B255/A226 junction where significant stop/start movements occur due to congestion.
Non Air Quality Impacts Perception	Improvements in journey times; potential for public transport improvements Likely to be perceived as positive
Cost-effectiveness & Feasibility	Cost – High High cost-effectiveness and feasibility
Funding	LTP
Timescale	2006/7 – 2009/10

Action 4: Improve emissions Standards for Council Fleet and Public Service Vehicles

This measure would lead to reductions in emissions of NO_x by improving emissions standards of vehicles in the public service sectors. Bus Quality Partnerships are already established in Kent, in Canterbury and Thanet Districts. The potential to explore improvements in emissions standards in Kent Thameside is high, notably through the proposed Fastrack public transport system. With respect to taxi emissions, consideration could be given to setting minimum emissions standards for taxis through the licensing system.

The scope for improvements in the Council fleet and for contractor vehicles is being investigated through the Council Travel Plan. The Government is keen for local authorities to demonstrate their commitment to delivering cleaner air by leading by example and therefore the implementation of a Council Travel Plan is a key measure to take forward in the Plan.

Objective	Reduce NO _x emissions within the AQMAs, through improvement in emissions standards of Council vehicles, buses and taxis. To be achieved through promotion of Energy Saving Trust (EST) grants, Quality Partnerships, contract review and licensing
Responsibility	DBC/KCC/Transport operators
Air Quality Impacts	Low – Moderate (dependant on level of uptake).
Non Air Quality Impacts	Socio-economic implications of increased costs to transport operators, contractors and DBC. Likely to be viewed as positive by majority of local stakeholders.
Perception	Potential negative perception by taxi drivers due to economic implications.
Cost-effectiveness & Feasibility	Cost-effectiveness & Feasibility to be investigated.
Funding	TBC
Timescale	TBC

Action 5: Bus Service Improvements and Priority

The development of the Fastrack network with road prioritisation will help to increase public transport patronage. Work by KCC, DBC & Arriva has already begun to improve feeder bus services and increase patronage. The first stage of construction of Fastrack started in 2004/05 with progress ahead of schedule. New infrastructure (improved bus stops) and vehicles are in place for improved local services in Dartford. The Fastrack network has the potential for air quality benefits in all AQMAs on the local road network.

The Everards Link Phase 2 proposal is a new dedicated busway to complete the missing section between Greenhithe station and the Riverside development sites within the Swanscombe Peninsular development proposals. This will also improve linkage to the Ingress park development. The Everards Link Phase 2 proposal has the potential for air quality benefits in the A226 London Road AQMA.

Proposals for the North Dartford development (2007) also include Fastrack infrastructure with a dedicated bus link across the M25 toll booths. This will be developer funded.

Objective Responsibility	Improve public transport uptake. Reduce car use and congestion. KCC/Developers/Public transport operators
Air Quality Impacts	Low to Moderate; dependant on uptake.
Non Air Quality Impacts	Potential reduction in noise; reduced congestion; safer roads
Perception	Likely to be perceived as positive.
Cost-effectiveness & Feasibility	Cost- High.
Funding	LTP Major bid/Developers
Timescale	TBC

Action 6: Improvements to public transport interchanges

The 2nd LTP includes proposals to remodel Greenhithe station to allow for bus laybys for pickup/drop off. A bus lane is proposed to run from the station under The Avenue into Ingress Park as part of Fastrack. The bus lane will join the A226 at Craylands Lane junction. This forms part of Phase 2 and 3 of the Fastrack network.

The Dartford Crossing Revenue supplementary bid proposed schemes includes the completion of Greenhithe station improvements for 2006/7.

Improvements of Greenhithe station as a rail/bus interchange will further encourage modal shift and lead to potential air quality benefits in the A226 London Road AQMA, including the St Clements A226/B255 junction and Bean Interchange AQMA.

The 2nd LTP also includes improvements to Dartford and Swanscombe rail stations. This includes improvements to long-distance coach facilities at Dartford and pedestrian access improvements at Swanscombe.

Objective Responsibility	Improve public transport uptake. Reduce car use and congestion. KCC/Developers/Public transport operators
Air Quality Impacts	Low to Moderate; dependant on modal shift.
Non Air Quality Impacts	Potential reduction in noise; reduced congestion; safer roads
Perception	Likely to be perceived as positive.
Cost-effectiveness & Feasibility	Cost- Moderate.
Funding	LTP
Timescale	2006/7 – 2010/11

Action 7: Installation of Real Time Passenger Information

The Dartford Crossing Revenue Supplementary bid and 2nd LTP integrated transport programme bid includes proposed schemes for Real Time Passenger Information (RTPI) signs in Kent Thameside (2007/8). The aim is to create more accessible bus services to increase patronage on important routes through better information provision and shelters. The development of RTPI will be to cover three bus routes in and around Dartford. Also the provision of bus borders, kerbs and piers. These will be on existing routes not part of the Fastrack system.

- 1) Dartford to New Barn - A225 Lowfield Street, Princes Road, B260 to New Barn.
- 2) Dartford to Wilmington - A225 Lowfield Street, Hawley Road, B258 Church Road, High Road to Wilmington.
- 3) Dartford to Sutton at Hone - A225 Lowfield Street, Hawley Road, Main Road to Sutton at Hone.

Objective	Encourage modal shift through improved information provision and reduce car use and congestion.
Responsibility	KCC
Air Quality Impacts	Low
Non Air Quality Impacts	Reduced congestion; improved public information provision; Increase bus patronage.
Perception	Likely to be perceived as positive
Cost-effectiveness & Feasibility	Costs – Low.
Funding	Dartford Crossing Revenue Supplementary bid LTP integrated transport programme
Timescale	2007/8

Action 8: Improvements to Bean Interchange

The Highways Agency is the transport authority responsible for the Bean Interchange off the A2 Trunk Road. Works currently being undertaken at Junction 2 of the M25/A282/A2 are likely to impact on the Bean Interchange AQMA.

The M25 Junction 2 is heavily trafficked and delays occur, with queues at peak hours extending back onto the main carriageways. Much development has taken place and is planned to take place in Kent Thameside, and this will lead to additional traffic. Conflicts occur between traffic bound for the Dartford Crossings and local traffic accessing Dartford. The A2 east of Junction 2 (towards Bean Interchange) is expected to have insufficient capacity to meet the need of future traffic demand.

The proposals provide direct free flow connections between the A282 and the A2 east of the interchange and widening of the A2 within existing highway boundaries to Bean interchange.

Improvements to Bean Junction itself are not proposed as part of this Highways Agency scheme, although the improvements to the A2 traffic flows are likely to have a small positive impact on air quality in the AQMA.

The Highways Agency is working in partnership with the local authority and developers towards the provision of access to the A2 for the large-scale development proposed at Eastern Quarry and it is intended that arrangements resulting from this will also help solve current congestion problems at the Bean Interchange Junction. This scheme has yet to be investigated.

Objective	To reduce congestion and improve traffic flows
Responsibility	Highways Agency/ Developer
Air Quality Impacts	Low –moderate (dependant on scheme proposed)

Non Air Quality Impacts		Reduction in noise and congestion; safer roads.
Perception		Likely to be perceived as positive
Cost-effectiveness	&	Cost-effectiveness and feasibility to be investigated
Feasibility		
Funding		TBC
Timescale		TBC

Direct Measures considered for inclusion in the draft Action Plan but dismissed at this stage on the grounds of cost-effectiveness and feasibility

Low Emission Zone (LEZ) or Clear Zone

A Low Emission Zone (LEZ) is a geographic zone defined for an area where vehicles of an acceptable emissions standard (normally Euro III) can enter and move around. The concept is held widely as a way of achieving air quality objectives within large urban area where economies of scale can be achieved with respect to set-up and operating costs. Further consideration to the implementation of an LEZ within Dartford is dismissed on the grounds of cost alone.

A Clear Zone is a defined urban area, usually a City, which exploits new technologies and operational approaches to improve quality of life and support economic growth, whilst minimising the adverse impacts of its transport systems. The implementation of a Clear Zone within Dartford is dismissed on the grounds of cost-effectiveness.

Road User Charging or Workplace Parking Levy

The Transport Act 2000 gave local authorities powers to introduce road user charging or workplace parking levy schemes. The revenue generated from such schemes would be used to improve local transport in the area.

The costs of introducing a road charging scheme can be offset by the revenue that is generated. Area wide charging is likely to be more costly than a designated route. The feasibility of area wide schemes is being considered in the regional Multi-modal Studies and it is unlikely that they will be introduced in the short term to achieve the air quality objective. Any scheme in Kent could only be introduced on a co-ordinated basis that dealt with all urban centres and did not give economic advantage to one over the other.

Based on charging workers for parking at their place of work, the implementation of a workplace parking levy could reduce the number of private vehicles entering Dartford. The proposal is considered likely to be controversial and unpopular with voters due to the economic implications for the local workforce. This has therefore been dismissed at this stage on the ground of feasibility. Future consideration to such schemes may be required if other action plan proposals do not deliver sufficient air quality improvements.

Roadside Emissions Testing

Under new powers of authority (Roadside Vehicle Emissions (Fixed Penalty) Regulations 2002) local authorities are able to undertake roadside emissions testing of vehicles. The aim is to identify those vehicles that make a disproportionate contribution to emissions through poor maintenance with on-the-spot fines for those that fail. The scheme of a formal roadside emissions testing programme is not considered viable for stand-alone authorities and has therefore been dismissed as a possibility for inclusion in the current action plan. The air quality impact of such schemes is also low and therefore cost-effectiveness is low. The use of voluntary vehicle emissions testing as a promotional tool is being explored through the Kent and Medway Air Quality Partnership.

Idling Engine Emissions

The Road Traffic (Vehicle Emissions)(Fixed Penalty) (England) Regulations 2002 permit all English local authorities to take action against drivers who leave their

vehicle engines running unnecessarily when parked. The local authority can issue a fixed penalty (£20) to any driver blatantly running their engine unnecessarily and who refuses all reasonable requests to switch off.

Tackling congestion and the volume of traffic passing through the town centre and approach roads will be the main deliverer of air quality improvements in Dartford. Idling emissions from parked vehicles are not considered a significant issue to warrant introducing specific measures with necessary resource implications. The proposal has therefore been dismissed on the ground of cost-effectiveness.

A Summary of the direct measures for the three AQMAs is shown in Table 4.

The ranking of options has been based on professional judgement through the assessment of a number of considerations; including the costs and benefits of all the options, feasibility and acceptability, and whether they will achieve the Air Quality Objective. It is likely that the NO₂ annual mean Objective will only be achieved through a combination of measures.

At this stage the impact assessment is qualitative. Quantitative air quality impact assessment of the principal 2nd LTP measures will be undertaken when relevant information on the detailed schemes becomes available.

The costs are provided as:

- 'Low' (up to £1 million);
- 'Moderate' (between £1 million – £5 million); and,
- 'High' (greater than £5 million).

The benefits are provided as:

- 'Low' (<0.2µg/m³);
- 'Moderate' (between 0.2 – 1 µg/m³); and,
- 'High' (greater than 1 µg/m³).

6.3 General Borough-wide Measures to Improve Air Quality

These are general measures that can be implemented by DBC, or which DBC can feed into, aimed at improving the air quality throughout the Borough. They will reduce background pollution concentrations and indirectly will work towards achieving the Air Quality Objectives within the AQMAs.

1. Transport measures

Sustainable Travel Plans

A Travel Plan is a general term for a package of measures tailored to the needs of an organisation to introduce greener, cleaner and sustainable travel choices and reduce the reliance on the car. It involves the development of a set of mechanisms, initiatives and targets that together can enable an organisation to reduce the impact of travel and transport on the environment. This will include the consideration of alternative fuels.

School Travel Plans

The 2nd LTP Objective is for all schools in Kent to have a school travel plan and increase the number of children walking and cycling to school by 2010. Annual funding allocations are made to support the 'Safer routes to school' schemes and support School Travel Plans. A School Travel Plan Advisor has been appointed for West Kent to support schools with implementation of their Travel Plans.

Employer Travel Plans

The 2nd LTP Objective is to approach all major employers in Kent with more than 200 personnel and offer assistance to establish Green Travel Plans and assist in the implementation of 10 Green Travel Plan's per year.

Council Staff Travel Plan

DBC do not have an adopted Council Travel Plan to help manage and reduce the Council's impact on the environment and improve travel choices for staff. However, quarterly staff travel surveys are undertaken with resultant actions i.e. promoting season ticket loans and the Kent car share data base. A 'Green Commitment' for DBC is currently being developed which will include consideration to staff/company travel. DBC intend to build upon their current staff travel survey work by producing and adopting a Council Travel Plan to allow greater consideration to the Council's contribution to air quality and to lead by example. Actions and targets aimed at improving uptake of more sustainable modes within the Council will be considered within the Travel Plan.

Measure 1: DBC will develop a Council's Staff Travel Plan and encourage uptake of sustainable modes of transport

Measure 2: DBC will continue to work together with KCC to encourage the uptake of Employer and School Travel Plans within the Borough.

Cycle and Walking Strategies

Regional strategies are in place to improve cycling and walking facilities throughout Kent and increase uptake.

DBC is working with KCC on progress with cycle routes in the area. There are proposed cycling schemes within the 2nd LTP which include new routes along the A227 between Meopham and Dartford, the A225, as an extension to Sutton at Hone Primary's Safer Routes to School, as well as new walking and cycling facilities on the south side of Princes Road between Darenth Road and Lowfield Street. There are also a number of pedestrian schemes proposed aimed at improving pedestrian access to facilities, e.g. leisure centres and shopping, and improving pedestrian safety, notably as part of the Safe Routes to Schools scheme.

Measure 3: DBC will continue to work with KCC to improve the facilities for cycling and walking within Dartford and encourage greater uptake.

2. Land Use Planning

Section 4.1 summarises the main Dartford Local Plan 2nd Review (2002) policies which will contribute to improvements in air quality. Policies have been incorporated to ensure developments with the potential to cause environmental impacts are adequately assessed and to refuse development proposals where there are unacceptable impacts. As a material planning consideration, it is important that air quality is taken fully into account in planning decisions and it is therefore recommended that the current air quality policies are safeguarded within the emerging Dartford Local Development Framework.

Measure 4: DBC Environmental Health Department will continue to work closely with the Planning Department to ensure that air quality is taken into account in the planning process when located in or close to the AQMA or in areas marginally below air quality objectives.

Land use planning has a key role in delivering sustainable transport systems within the area by influencing the location, scale, density, design and mix of development and encouraging alternative modes of travel. DBC is working in partnership with Gravesham Borough Council and Kent County Council on the Fastrack public transport network which will serve proposed large-scale developments, such as the North Dartford, Eastern Quarry, Swanscombe Peninsular and Ebbsfleet developments.

Measure 5: DBC will continue to work together with developers to improve sustainable transport links serving new developments.

To provide support to local plan policies, the development of supplementary planning guidance for air quality assessments of developments and, in particular, for development which may impact on an AQMA is recommended in the Policy Guidance LAQM.PG(03).

Measure 6: DBC will develop, through the Kent & Medway Air Quality Partnership, supplementary planning guidance to assist with air quality assessments of development proposals

3. Local Air Quality Management and Pollution Control

Air quality monitoring

The air quality monitoring network in DBC provides more accurate information and understanding of air quality within the Borough. Continuous monitoring stations are installed at three sites within the Borough to monitor NO₂ and PM₁₀ concentrations so that modelled predictions can be verified and the progression of action plan measures can be monitored and assessed. This is supplemented by NO₂ passive diffusion tube sites throughout the Borough, a large number of which are within the AQMAs. DBC is also part of the Kent and Medway Air Quality Monitoring Network, which was set up in 1997 and provides information on a wide range of pollutants through the County.

Measure 7: DBC will continue their commitment to local air quality monitoring within the Borough to ensure a high standard of data is achieved to assess against air quality objectives

Promotion and Education

It is important that information on air quality is provided in a clear and accessible way. The Council web site <http://www.Dartford.gov.uk> and the Kent and Medway Air Quality Partnership web site <http://www.kentair.org.uk> provide details on air quality within the Borough and summaries of LAQM Review and Assessment Reports are available for viewing.

Measure 8: DBC will make details of the Action Plan measures and annual progress reports available on the Website to ensure broad access to the consultation and implementation process.

DBC is a member of the Kent and Medway Air Quality Partnership, which was formed in 1992. The members of the Partnership are shown below.



The major aims and objectives of the Partnership are:

- To facilitate a co-ordinated approach throughout Kent and Medway to the Local Air Quality Management (LAQM) obligations placed on local authorities under the Environment Act 1995.
- To compile, update and maintain an Emissions Inventory of air pollution sources in and around Kent, to assist with the LAQM process.
- To comment on and influence the economic, planning and transport policies within the county so that air quality issues are properly considered and dealt with.
- To gain an understanding of the health implications associated with poor air quality and the extent to which air quality threatens the health of Kent and Medway's communities.
- To work with national agencies, neighbouring authorities and European partners to promote an awareness of air quality issues and to participate in joint initiatives to further the knowledge and understanding of air quality issues.
- Liaise with DEFRA and government bodies to assist with the implementation of the National Air Quality Strategy.

Measure 9: DBC will continue to work together the Kent and Medway Air Quality Partnership on promotional activities to raise the profile of air quality in Dartford

Pollution Control

Prescribed Industrial Processes are regulated by DBC and the Environment Agency under the Environmental Protection Act 1990 Part I A & B and subsequent Pollution Prevention and Control (PPC) Regulations 2000. There are 26 permitted Part B Processes in Dartford regulated by DBC and five A1 Processes regulated by the Environment Agency.

With regard to nuisance emissions from unregulated processes, Statutory Nuisance is enforced by Environmental and Public Health Services under the Environmental Protection Act 1990 Part III and this controls smoke, dust, fumes or gas emissions from commercial and domestic premises which are causing a nuisance or are prejudicial to health. Bonfire leaflets have been produced and these are distributed when nuisance smoke problems arise.

Smoke Control Areas

The majority of Dartford Borough is within a Smoke Control Area and therefore emissions from domestic chimneys are controlled. This controls domestic smoke emissions by requiring people to burn only smokeless fuel and is enforced by Environmental Health under the Clean Air Act 1993.

Measure 10: DBC will continue to inspect all of its permitted industrial processes to ensure compliance with the PPC Regulations 2000 and will continue to enforce the Environmental Protection Act 1990 Part III and Clean Air Act 1993 to prevent nuisance emissions from unregulated processes.

Energy Management

○ Dartford Borough Council Energy Use

DBC has a Green Housekeeping Policy, which includes measures to reduce energy consumption in all its buildings. The Dartford Energy Group was established in 2002 to identify energy use within the Council. An inventory of energy use and CO₂ emissions has been undertaken to establish a baseline and set appropriate indicators. Investigations will continue into the measures available to assist with energy efficiency and the reduction of CO₂ emissions. Once the Council has assessed its own contribution to emissions, other organisations within the community will be targeted.

○ Domestic energy use

The Kent Energy Centre was set up in 2000 to provide energy efficiency advice to all sectors within the County. DBC are working in partnership with the Kent Energy Centre to promote increased energy efficiency in residential properties in the Borough. An annual Home Energy Survey is sent to residents; with advisory leaflets on help available e.g. grant schemes. The energy savings can be calculated on a 12 monthly basis and includes the likely costs of improvement works to residents.

Dartford Borough Council Housing Department provides advice direct to residents and information on grant schemes including discounts on loft insulation and cash back on condenser boiler installation. DBC also have a planned maintenance programme for Council housing stock to increase energy efficiency. This scheme is aimed at replacing windows, roof insulation and cavity wall insulation.

The Kent Energy Centre is co-ordinating the implementation of the Kent Health & Affordable Warmth Strategy (2001) on behalf of all Kent local authorities including DBC, which aims to tackle fuel poverty and promote energy efficiency measures. There is a Comprehensive Energy Savings Programme which includes projects such as distribution of energy efficient light bulbs, as well as promoting uptake of grants for improving energy efficiency and insulation. All these measures will lead to improvements in domestic energy efficiency throughout the Borough.

○ Building Control

Building Control can contribute to the development of policies for air quality improvement through the promotion of emission-reducing technologies in new developments and buildings. The Council's Building Control Service has policies in place to improve energy efficiency in buildings, as described below.

The Building Control Service has a statutory responsibility to ensure that new building works within the Borough meet minimum technical standards in relation to health, safety, welfare and energy conservation, as prescribed under the Building Regulations 1991. The Legislation sets out substantive requirements and technical guidance to achieve minimum standards. This technical guidance is contained in Approved Documents giving general guidance as well as practical guidance about some of the ways of meeting the requirements of the Regulations. Approved Document L, "Conservation of Fuel and Power" requires reasonable provision to be made for the conservation of fuel and power in buildings by:

- limiting the heat loss through the fabric of the building;
- controlling the operation of the space heating and hot water systems;
- limiting the heat loss from hot water vessels and hot water service pipe work;
- limiting the heat loss from hot water pipes and hot air ducts used for space heating; and
- installing in buildings artificial lighting systems, which are designed and constructed, to use no more fuel and power than is reasonable in the circumstances and making reasonable provision for controlling such systems.

Part L of the Building Regulations identifies the legal minimum a development needs to meet in terms of energy efficiency in the UK. However, in Kent developers should additionally look to meet more stringent demands to satisfy the aims of the Kent and Medway Structure Plan (Policy SP1 and NR1) and the overarching aim of reducing CO₂ emissions, improving energy efficiency and increasing the proportion of energy generated from renewable sources. Many of these options have direct synergies with the improvement of local air quality

The Planning Department request Ecohomes rating in new houses being built and encourage energy efficient development.

Measure 11: DBC will continue to work together with the Kent Energy Centre to promote and implement energy efficiency measures in Dartford

A summary of the proposed general Borough-wide measures to improve air quality is provided in Table 5.

Table 4 Summary of direct measures proposed for the AQMAs

Action	Description	Organisation responsible	Date to be achieved by	Cost/ Funding	Air quality improvement in AQMAs	Other potential impacts	Rank (based on cost-effectiveness)
1	Encourage modal shift through cycleway/footpath improvements	KCC	2007/8 - 2009/10	Low LTP	Low	Health benefits through exercise; reduced congestion; improved journey times	8
2	Traffic Management improvements—Dartford Town Centre UTMC	KCC	2008/9	To be confirmed LTP/ Developer	Moderate (Dartford Town and Approach Roads AQMA)	Improvements in journey times; potential for public transport improvements	2
3	Junction Improvements: St Clements A226/B255	KCC	2006/7 - 2009/10	High LTP/ Developer	High (A226 London Road AQMA)	Improvements in journey times; potential for public transport improvements	1
4	Improve emissions Standards for Council Fleet and Public Service Vehicles	DBC/ Transport operators	Ongoing	To be confirmed	Low - Moderate (dependent on level of uptake)	Socio-economic implications of increased costs to transport operators, contractors and DBC	5
5	Bus Service Improvements and Priority	KCC	2010/11	High LTP bid/ developers	Low - Moderate (dependent on level of modal shift)	Increase bus patronage; reduced congestion; safer roads; potential reduction in noise	4
6	Improvements to public transport interchanges	KCC	2006/7 - 2010/11	Moderate LTP	Low - Moderate (dependent on level of modal shift)	Increase public transport patronage; reduced congestion; safer roads; potential reduction in noise	3
7	Installation of Real Time Passenger Information	KCC	2007/8	Low LTP/ Dartford Crossing Revenue	Low	Increase bus patronage; improved public information provision; reduced congestion.	7
8	Improvements to Bean Interchange	Highways Agency	To be confirmed	High	Low - moderate (dependant on scheme proposed)	Reduction in noise and congestion; safer roads.	6

The costs are provided as: 'Low' (up to £1 million); 'Moderate' (between £1 million – £5 million); and, 'High' (greater than £5 million).
The air quality improvements are provided as: 'Low' (<0.2µg/m³); 'Moderate' (between 0.2 – 1 µg/m³); and, 'High' (greater than 1 µg/m³).

Table 5 Summary of Proposed General Borough-wide Measures to Improve Air Quality

Proposed measure	Description	Organisation responsible	Indicator	Date to be achieved by
1	DBC will develop a Council's Staff Travel Plan and encourage uptake of sustainable modes of transport	DBC	% modal shift to car share/public transport/walking/cycling	December 2008
2	DBC will continue to work together with KCC to encourage the uptake of Employer and School Travel Plans within the Borough.	DBC	No. of travel plans in place	Ongoing
3	DBC will continue to work with KCC to improve the facilities for cycling and walking within Dartford and encourage greater uptake.	DBC	%modal shift to cycling/walking No. miles new cycle lanes/routes	Ongoing
4	DBC Environmental Health Department will continue to work closely with the Planning Department to ensure that air quality is taken into account in the planning process when located in or close to the AQMA or in areas marginally below air quality objectives.	DBC	No. planning applications with air quality conditions/assessments	Ongoing
5	DBC will continue to work together with developers to improve sustainable transport links serving new developments.	DBC	No. planning applications where improvements secured	Ongoing
6	DBC will develop, through the Kent & Medway Air Quality Partnership, supplementary planning guidance to assist with air quality assessments of development proposals.	DBC/ K&MAQP	Completion of a Supplementary Planning Document	December 2008
7	DBC will continue their commitment to local air quality monitoring within the Borough to ensure a high standard of data is achieved to assess against air quality objectives.	DBC	No. monitoring sites; % data capture	Ongoing
8	DBC will make details of the Action Plan measures and annual progress reports available on the Website to ensure broad access to the consultation and implementation process.	DBC	Availability of recently published reports on the Website	Ongoing
9	DBC will continue to work together the Kent and Medway Air Quality Partnership on promotional activities to raise the profile of air quality in Dartford.	DBC/K&MAQ P	No. promotional activities undertaken with the Partnership	Ongoing
10	DBC will continue to inspect all of its permitted industrial processes to ensure compliance with the PPC Regulations 2000 and will continue to enforce the Environmental Protection Act 1990 Part III and Clean Air Act 1993 to prevent nuisance emissions from unregulated processes.	DBC	% Permitted processes meeting inspection and upgrade targets	Ongoing
11	DBC will continue to work together with the Kent Energy Centre to promote and implement energy efficiency measures in Dartford.	DBC	% improvement in energy efficiency SAP rating	Ongoing

7 IMPLEMENTATION AND MONITORING

DBC will work jointly on the action plan measures with the relevant partners including Kent County Council, the Highways Agency, transport operators, schools and local businesses. To secure the necessary air quality improvements there must be involvement by all local stakeholders and DBC will actively work to encourage community participation in the process.

The implementation and effectiveness of the Action Plan will be carefully monitored through monitoring of NO₂ and PM₁₀ at relevant locations within the AQMAs. In addition, traffic flow changes on the key roads will also be assessed through the review and assessment process, and the uptake of local measures such as Travel Plans will be monitored. Indicators have been provided for the general measures to be undertaken by the Council to monitor progress annually.

The Action Plan will be integrated and aligned as far as possible with the LTP, through future progress reporting, to provide additional support to the proposed measures and allow the principal measures to be monitored. This will enable the success of proposed action plan measures to be assessed and additional measures proposed within the LTP bidding process as appropriate. Annual trajectories have been set within the 2nd LTP for the principal measures to enable progress to be monitored.

There will be regular review and assessment of the action plan proposals to evaluate progress and this will be reported annually through LAQM and 2nd Local Transport Plan progress reports.

8 DEFRA ACTION PLANNING REQUIREMENTS COMPLIANCE CHECKLIST

WORK AREA	CONSIDERED/INCLUDED	LOCATION ACTION COMMENTS	IN PLAN/
Adherence to Guidelines and Consideration of Policies			
Statutory Consultees consulted?	Yes	Page 25	
Consulted with other Local Authorities and internal departments?	Yes	Page 25	
Statement of Pollutant causing AQMA?	Yes	Pages 8-9	
Principle sources of pollutants identified?	Yes	Pages 8-10	
Have other local authorities' plans and policies been considered?	Yes	Pages 15-23	
Options timetable included?	Yes	Pages 42-43	
Have options been costed?	Yes	Page 24 and 42	
Have the impacts been assessed?	Qualitatively	Page 42	
Checklist of Measures			
Have options been considered?	Yes	Pages 42-43	
How many options considered?	8 direct measures & 11 general measures	Pages 42-43	
Transport impacts assessed?	Qualitatively	Page 42	
Have air quality impacts been assessed modelled or measured?	Qualitatively	Page 42	
Have socio-economic impacts been assessed?	Qualitatively	Page 42	
Have other environmental impacts been assessed?			
Have costs been considered?	Yes	Page 24 and 42	
Appropriateness and Proportionality			
Do measures seem appropriate to the problem?	Yes, transport actions proposed for road traffic emissions source		
Have the measures been assessed?	Qualitatively	Page 42	
Are the measures likely to succeed?	If implemented, will contribute to reducing pollutant emissions in the AQMAs and borough		
Have wider impacts been assessed?	Qualitatively	Page 42	
Was the costing method appropriate?	Costs largely derived through LTP funding proposals and existing budgets		
Is it likely that the AQMA objective will be met?	No, exceedences expected beyond 2010	Pages 11-13	
Do the chosen options comply with Government Policies?	Yes		
Implementation			
Are measures realistic?	Yes, based on existing plans and strategies		
Have responsibilities been assigned to the relevant party?	Yes	Pages 42-43	
Does the assigned party have the necessary powers?	Yes		
Is the financing secure and identify who pays?	Yes	Pages 42-43	

9 GLOSSARY OF TERMS

Abbreviation	Full name
AQMA	Air Quality Management Area
AQS	Air Quality Strategy
BAT	Best Available Technology
CTRL	Channel Tunnel Rail Link
DBC	Dartford Borough Council
DEFRA	Department for Environment, Food and Rural Affairs
DETR	Department for Transport and Regions
DOE	Department of the Environment
HGV	Heavy goods vehicles
KCC	Kent County Council
K&MAQN	Kent & Medway Air Quality Network
K&MAQP	Kent & Medway Air Quality Partnership
LA21	Local Agenda 21
LAQM	Local air quality management
LDD	Local Development Documents
LDF	Local Development Framework
LEZ	Low Emission Zone
LTP	Local Transport Plan
NAQS	National Air Quality Strategy
NO ₂	Nitrogen dioxide
NO _x	Oxides of nitrogen
NSCA	National Society for Clean Air
PM ₁₀	Fine particle matter less than 10µm diameter
RTPI	Real time passenger information
µg/m ³	Micrograms per cubic metre
UTMC	Urban Traffic Management Control
VMS	Variable Message Signage

10 REFERENCES

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