

# Slough Draft Air Quality Action Plan

Annex C of Provisional Second Local Transport Plan

July 2005

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## 1 Background

### 1.1 Air quality legislation

**1.1.1** The National Air Quality Strategy (NAQS) sets objectives for individual pollutants with timescales for compliance. The objectives are health based and were advised by two committees, EPAQS (Expert Panel on Air Quality Standards) and COMEAP (Committee on the Medical effects of Air Pollutants). These objectives are similar to those developed by the European Union through the Framework Directive on Ambient Air Quality and a series of 'daughter directives' that set limits for individual pollutants.

**1.1.2** The Environment Act 1985 places an obligation on every local authority in England and Wales to review local air quality, identify any areas where the national air quality standards and objectives may be exceeded and to work towards delivering the objectives set out in the NAQS.

**1.1.3** National and European legislation has already done a lot to control emissions from vehicles. Advances in engine technology have also reduced vehicle emissions over time. However, local factors such as traffic volumes, road layouts and proximity of housing are major factors in determining whether or not the air quality objectives of the NAQS are exceeded in any specific location.

### 1.2 The review of air quality in Slough

**1.2.1** Following national guidance the review process consists of several stages, with each stage being more detailed than the stage before it. If the results of the review and assessment suggest that a national air quality standard and objective will be breached in the area, then the local authority must declare an air quality management area and devise an action plan for air quality improvement.

**1.2.2** We completed stages 1,2, and 3 of the first round of the review and assessment process in 2000. The conclusion was that it was unlikely that the national air quality standards would be breached by the objective years of 2004 and 2005, so there was no need to declare an air quality management area.

**1.2.3** The second round of the process started with an update and screening report which was completed in 2003. The report concluded that a more detailed assessment was required for two pollutants, particulate matter (PM10) and nitrogen dioxide.

**1.2.4** The 2004 Detailed Assessment Report showed that it is likely that the annual objective for nitrogen dioxide will be exceeded in areas close to the M4, and the top of the A4 London Road close to M4 Junction 5.



## 2 Slough's Air Quality Management Areas

### 2.1 Slough's AQMAs

**2.1.1** In June 2005, two Air Quality Management Areas (AQMAs) were declared, one for the M4 corridor across Slough's southern boundary, and the second for the A4 at Brands Hill. These are shown in Figure C2.1. The areas are designated in relation to a likely breach of the nitrogen dioxide (annual mean) objective as specified in the Air Quality Regulations (England) (Wales).

#### AQMA Order 1 – M4 Corridor

**2.1.2** The designated area incorporates land adjacent to the M4 motorway along the north carriageway between Junction 7 and Junction 5, and also the south carriageway between junction 5 and Sutton Lane.

#### AQMA Order 2 – A4

**2.1.3** The designated area incorporates a stretch of the A4 London Road east of junction 5 of the M4 motorway up until Sutton Lane.

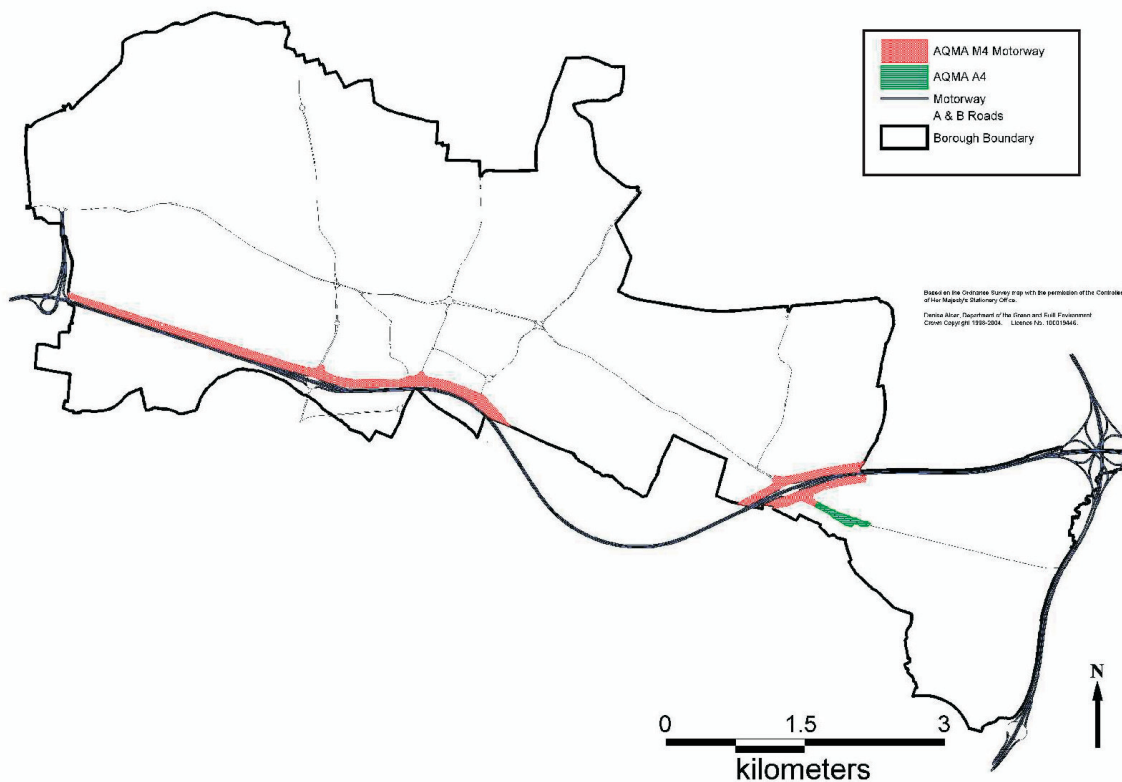
### 2.2 Sources of pollution

**2.2.1** In order to develop an action plan that is cost effective and proportionate it is essential to understand how these sources contribute to concentrations in the AQMA. As part of the Further Detailed Assessment Report a source apportionment was carried out. Table C2.1 shows the sources of contribution to the two AQMAs.

**2.2.2** This reveals that the main source of the air quality exceedences of nitrogen dioxide (NO<sub>2</sub>) is road traffic (typically around 37% to 74%), particularly from the motorway but also from some of Slough's main roads. The contribution to emissions from Heavy Goods Vehicles (HGVs) is 33% on Slough's main roads and 69% on the M4 corridor.

**2.2.3** The second highest contributor to the exceedences is from background sources. Air quality in Slough includes locally generated pollutants, but also pollutants from London, Heathrow, Europe and neighbouring urban areas. Dispersion models used in air quality assessments can only predict ground level concentrations arising from those sources which have been input into the model. In all situations there will be an additional pollutant component arising from those sources which have not been included as mentioned above, these are described as background sources.

**Figure C2.1: Slough's Air Quality Management Areas 2005**



**2.2.4** The assessment work in Slough estimates that background contributions of nitrogen oxides comprise between 24 and 44% within the AQMAs. These emissions are clearly beyond the control of the council.

### 2.3 Quantity and scale of exceedences

**2.3.1** Table C2.2 shows the quantity and scale of exceedences in the two AQMAs. The greatest percentage improvement is required in the AQMA along the M4, followed by the AQMA A4 London Road and Brands Hill.

**2.3.2** Modelled predictions have shown that the nitrogen dioxide annual mean is unlikely to be exceeded by 2010 in the AQMA Order 2 – A4, but it is likely that exceedences will still remain in areas along the M4 in AQMA Order 1 – M4.

**2.3.3** The AQMA including the M4 corridor has approximately 1286 people living within the AQMA boundary whilst the AQMA A4 has 53 people living within its boundary.

**Table C2.1: Sources of air pollution in the AQMAs (Cate For Slough Borough Council (2004) Further Assessment)**

Area	NO <sub>2</sub> ug/m <sup>3</sup>	% NO <sub>x</sub> improvement required	% Contribution: major road sources	% Contribution: motorway sources
1. Spackmans	48	22	3.06	60.52
2. Paxton Avenue	44	13	3.60	55.46
3. Winvale	59	42	1.90	71.79
4. Grampian Way	48	21	10.52	51.65
5. Ditton Road	42	5	1.79	52.72
6. Brands Hill	40	0	39.32	11.40
7. London Road	50	26	53.74	9.78

Note: Areas 1 -5 are in the M4 AQMA and areas 6 – 7 in the A4 AQMA

**Table C2.2: Areas of “worst case” exceedance and % improvement in air quality required**

Area	Pollutant	Objective	Modelled “worst case” annual average	Improvement required in terms of NO <sub>2</sub>	Monitored “worst case” annual average*	Improvement required in terms of NO <sub>2</sub>
1. Spackmans	NO <sub>2</sub>	40	48.2	17	-	-
2. Paxton Avenue	NO <sub>2</sub>	40	44.2	10	42	5
3. Winvale	NO <sub>2</sub>	40	59.4	33	45	11
4. Grampian Way	NO <sub>2</sub>	40	47.7	16	49	18
5. Ditton Road	NO <sub>2</sub>	40	41.7	4	42	5
6. Brands Hill	NO <sub>2</sub>	40	39.9	0	51	22
7. London Road	NO <sub>2</sub>	40	49.7	20	48	17

Note: Areas 1 -5 are in the M4 AQMA and areas 6 – 7 in the A4 AQMA \*After bias adjustment, highest annual average from 2002-2003

## 3 Developing an action plan for Slough

### 3.1 Benefits of Integrating Air Quality Action Plans and LTPs

**3.1.1** There are a number of advantages of incorporating an Air Quality Action Plan (AQAP) within the LTP:

- road transport is a major source of local air pollution. Slough's AQMAs are traffic related so it makes sense to integrate those action plan measures which deal with traffic management, congestion relief etc into the LTP;
- it increases communication across local authority departments i.e. environmental health and transport planners have to work together on the LTP and this ensures air quality is being dealt with in a more corporate and multi-disciplinary way; and
- it assists with funding schemes that benefit air quality.

**3.1.2** For this reason Slough's AQAP has been integrated into the LTP. The transport policies and proposals in the LTP have been considered in the development of the air quality action plan. Similarly, the impact of LTP options on air quality (amongst other issues) has been fundamental in its development.

**3.1.3** Action plans must be prepared for each AQMA which will consider all the pollutant sources that contribute to the nitrogen dioxide exceedance so that a proportionate and cost effective response to the air quality problem can be made.

#### Climate change

**3.1.4** Many of the measures proposed within our AQAP will deliver wider environmental and other benefits, including noise and greenhouse gas emissions.

### 3.2 AQMA Order 1 – M4

**3.2.1** AQMA 1 is a corridor along the M4. The M4 is the responsibility of the Highways Agency (HA) and it is motorway traffic that is the primary contributor to poor air quality in the designated area. It is therefore not appropriate to integrate air quality action plans within the LTP. However, many of the measures within the LTP and this air quality action plan will help to improve air quality within this AQMA. A separate Action Plan will be developed within this AQMA in consultation with the Highways Agency and progress reported in future LTP progress reports.

### 3.3 AQMA Order 2 – A4

**3.3.1** The second AQMA, Order 2, includes a small stretch of the A4. This is a recently de-trunked road that now falls under the responsibility of Slough Borough Council. The major source of poor air quality in this area is traffic on the A4 itself. An action plan for this area is therefore closely linked to the actions in the LTP. It is possible that a cause of the exceedance along the A4 is actually linked to the M4 AQMA and is due to traffic queuing to access the M4 at junction 5. Whilst developing separate action plans for the two AQMAs, there will still be a need to consider them together as many actions will impact on both areas and are therefore relevant in both.

**3.3.2** The main focus of this action plan will therefore be the area described in AQMA Order 2 – A4.

### 3.4 Slough Town Centre

**3.4.1** Whilst only two AQMAs have been declared our recent work also indicates that there are a number of locations along the A4 in the centre of Slough where levels nitrogen dioxide are high, in fact, only just below the air quality objective level. This area is therefore particularly sensitive and it is important that air quality is not allowed to deteriorate further.

**3.4.2** Given the significance of road traffic in contributing to nitrogen dioxide exceedances within the two AQMAs we recognise that the mechanisms in the Action Plans, and across Slough generally, must focus on reducing traffic levels, managing traffic speeds and reducing congestion. These are all outcomes Slough's Local Transport Plan is seeking to achieve.

**3.4.3** We recognise the need to address congestion and pollution issues in the town centre, whilst at the same time promoting its economic vitality and attractiveness. As a result our Local Transport Plan is based on a balanced local transport strategy which seeks to promote improved public transport, walking and cycling to the town centre, whilst better managing demand for parking and road space.

**3.4.4** In line with national and regional planning policy we are promoting additional housing and commercial development in locations where public transport accessibility is good. New development within the centre of Slough is being promoted to develop our role as a regional hub.

### 3.5 Limits on capacity of Slough Borough Council to influence local air quality

**3.5.1** A substantial amount of the NO<sub>x</sub> emissions from road traffic in Slough arise from traffic on the M4 or passing through Slough on the strategic road network. Much of this traffic is not under the direct control of Slough Borough Council. Also as described above the second highest contributor to the exceedences in Slough is from background sources. As a result, whilst locally we can introduce measures to improve air quality, background sources may increase, which is beyond our control.

**3.5.2** The M4 is the responsibility of the Highways Agency. It will be necessary to consult the Agency, our neighbouring authorities and other interested parties during the development of our Action Plan and ensure that the Plan is coordinated and realistic irrespective of the organisation responsible for delivering a particular part of it.

**3.5.3** Recognising the significance of through/strategic traffic in the Borough contributing to poor air quality we propose to be fully involved in discussions around any implementation measures that may arise from proposals such as:

- the Thames Valley Multi Modal Study;
- the M4 Route Management Strategy;
- Orbit/M25 Widening and other related schemes;
- Crossrail;
- Heathrow Third Runway;
- possible extension of Central London Congestion Charging to Heathrow;
- National Road User Charging; and
- London Low Emission Zone Study.

### 3.6 Lobbying our partners

**3.6.1** It is also important to recognise the role of national government and other key national and local partners in delivering solutions to air quality problems in Slough and wider regional and national air quality problems. We will lobby for our partners to play their part in delivering measures that promote better air quality. For example we will lobby for:

- rail operators and the Department of Transport to increase or at least maintain the frequency of train services stopping at stations within the Borough in order to help tackle private car dependency;
- for continued national government measures to help the development of less polluting vehicle technologies and fuels, and for financial incentives to encourage their use; and
- air quality to continue to be a key consideration when long term infrastructure projects such as Crossrail, extra housing provision or a third runway at Heathrow are discussed or consulted upon.





## 4 Slough's draft air quality action plan

### 4.1 Slough's main work areas

**4.1.1** The information on air quality and the proposals outlined within this report and the provisional LTP represent Slough's Draft Air Quality Action Plan (AQAP). Once the provisional LTP has been submitted further consultation will take place as we prepare to submit our final LTP in March 2006. Specific consultation on the draft AQAP will also take place after July 2005.

**4.1.2** Much of our efforts outlined in the LTP focus on delivering a balanced range of transport schemes and initiatives that will deliver air quality benefits whilst also addressing our other key transport objectives. As a small unitary authority we must focus on schemes that deliver a wide range of benefits. Few schemes are proposed within our LTP solely on the grounds of their air quality benefits.

**4.1.3** Within this draft AQAP we have identified the policies and proposals within the LTP that will contribute toward addressing the air quality problems described above. It also includes other non-transport actions that the council will undertake that will deliver air quality benefits e.g. public awareness raising campaigns through the Local Agenda 21 process.

**4.1.4** Slough's LTP is described in thirteen strategy components which we believe will be required to achieve our local transport vision and objectives. Many of these strategy components are also fundamental within our AQAP. These components are:

- TC** town centre regeneration, including measures relating to the Heart of Slough project;
- TM** TM traffic management and intelligent transport systems
- BS** BS bus strategy (including community transport);
- RS** RS rail strategy;
- CY** CY cycling strategy;
- WA** WA walking strategy;
- PS** PS parking strategy;
- TP** TP Travel Plans and school travel strategy;
- FM** FM freight management;
- RS** RS road safety strategy;

**HM** HM highway maintenance and management;

**SL** SL street lighting; and

**LU** LU land use planning.

**4.1.5** The actions described within this report will be used to inform the final development of the AQAP over the next 6 to 9 months. Our final AQAP will be submitted with the final LTP in July 2006.

**4.1.6** We are also developing an Air Quality Strategy. Whilst road traffic is the primary source of the predicted exceedences of the nitrogen dioxide annual objective in the AQMAs, and will be tackled through Action Plans, a Strategy will enable other sources of pollution to be considered. It will also help make improvements where possible, target those areas close to exceedences such as the town centre, and any other areas where the air quality is most likely to deteriorate. The Strategy will provide the framework within which Council policies that impact on air quality rest. The Strategy can inform the LTP process by highlighting specific transport and non-transport policies on air quality, as applicable.

**4.1.7** Our proposed actions on air quality can be summarised in three work areas:

#### Work area (1)

##### General measures (GEN-1 to GEN-30) to improve air quality in Slough.

- actions to reduce emissions from vehicles;
- actions to reduce traffic volumes; and
- actions to improve management of traffic and traffic speeds.

#### Work area (2)

##### Specific measures (A4-1 to A4-4) to tackle air quality problems in AQMA Order 2 – A4.

- Actions and partnership work to address the specific air quality problems in AQMA Order 2 – A4.

### Work area (3)

#### Partnership work to tackle air quality problems in AQMA Order 1 – M4.

- A separate Action Plan will be developed in consultation with the Highways Agency and progress reported in future LTP progress reports.

**4.1.8** Actions for the first two work areas are described in Tables C4.1 and C4.2. The tables also describe the likely degree of impact of each measure, the estimated timescale associated with each, the magnitude of cost and some of the wider impacts of the measures.

**4.1.9** We recognise that it will be important to consider any actions proposed to tackle air quality problems on the motorway in the context of what we are trying to achieve in the A4 AQMA and our efforts to improve air quality elsewhere in Slough, particularly in the town centre. We need to ensure actions proposed to address a problem in one area do not create an air quality problem elsewhere.

#### 4.2 Regional air quality strategy

**4.2.1** We are also developing a regional strategy in conjunction with the London Borough of Hillingdon, London Borough of Hounslow and Spelthorne District Council to cover the Heathrow region. The development and publication of this area-based Air Quality Strategy for the Heathrow region represents a significant way forward for securing future air quality improvements across the whole area.

**4.2.2** It is envisaged that the development of this strategy will provide a focus not only for the four local authorities involved, but for all organizations, bodies and agencies responsible for securing wider environmental and health improvements that include air quality. This include the Highways Agency, Environment Agency, The South East England Development Agency (SEEDA), the Government Office for London, the Government Office for the South East, the Primary Care Trust and the Greater London Authority.

#### 4.3 Key partnerships and co-operation

**4.3.1** Partnership working will be fundamental to improving air quality in Slough, particularly given the nature of the AQMAs identified and the sources of pollution. Our key partners in developing and delivering our action plan will be:

- the Highways Agency;
- BAA Heathrow;
- neighbouring local authorities, including TfL; and
- local bus operators;

**4.3.2** Our partnership work on air quality will largely be taken through existing groups and partnership bodies, including:

- the Heathrow Transport Forum;
- the Heathrow Bus and Rail Group;
- the Heathrow Employer Travel Plan Group;
- the Heathrow Air Quality Working Group (London Borough of Hillingdon, LB of Hounslow, Spelthorne, Slough Borough Council and BAA Heathrow);
- the Thames Valley Multi Modal Implementation Group;
- the Slough Bus Quality Partnership; and
- the Buckinghamshire, Slough, Windsor and Maidenhead and Bracknell Joint Transport Policy Group

**4.3.3** We will work with our neighbouring local authorities to ensure that our air quality action plans are complementary. We also act as consultees to other neighbouring authority's existing or emerging AQAPs. This process also allows us to explore opportunities to promote joint initiatives and identify any potential conflicts.

#### 4.4 Work Area 1: General measures to improve air quality in Slough

##### Action to reduce emissions from vehicles

##### Encouraging use of cleaner vehicles and fuels

**4.4.1** Whilst the contribution to emissions from our own vehicle fleet is relatively small we need to lead by example and look for every possible opportunity to make improvements to our fleet, trial new low emission technology where possible and ensure vehicle maintenance is excellent.

**4.4.2** We will need to work with local businesses to promote the use of cleaner technology on a Borough and regional basis e.g. freight operators signing up to the Clean Vehicle Programme. We will also monitor and promote national schemes and grant systems that encourage the use of alternative fuels.

**4.4.3** Through our Local Agenda 21 process we will continue to promote and raise awareness of cleaner fuels, non car modes, and environmental events. We will also continue to promote the national dirty diesel hotline service to allow the public to report highly polluting vehicles.

**4.4.4** We will also work with neighbouring authorities on joint initiatives and publicity campaigns to promote cleaner technology and fuels. Some initiatives we will investigate include:

- joint publicity campaigns;
- area-wide Vehicle Emission Testing Programmes; and
- driver training.

**4.4.5** We will continue our work on the development of a regional air quality strategy for Heathrow and our wider partnership work described in 1.4.20 above.

**4.4.6** Through the Slough Bus Quality Partnership and the Heathrow Bus and Coach Group we will strive to increase the provision of low or zero emission buses used in the area and specifically through the AQMA.

### Action to reduce traffic volumes

#### Existing land use policies

**4.4.7** Effective land use policies LU will be key in reduce traffic volumes and promoting greater use of public transport, walking and cycling. The Council's planning and land use policies are set out in its Local Plan that was adopted in 2004. A key policy thrust within this document is promoting development in locations that are accessible by non-car modes. It also seeks to support the vitality of existing sustainable locations such as the town centre.

**4.4.8** Other key policies within the local plan that have important air quality benefits are:

- parking standards restraining parking provision;
- a requirement for Transport Assessments;

- a requirement that a consideration of the air quality impact of any new development is made (Policy EN29); proposals for development which would result in significant deterioration of air quality will not be permitted unless means of mitigating the impact can be clearly demonstrated and achieved;
- a requirement for travel plans to be developed, implemented and monitored;
- developers to contribute toward measures to promote public transport, walking and cycling measures; and
- car free residential developments.

#### Emerging land use policies

**4.4.9** We are currently working on the development of our Local Development Framework (LDF). Again it will focus on promoting new development in locations accessible by non car modes. The policies described above will continue to be promoted. We will explore new policies that could form components of our air quality action plan, including:

- seeking the provision of alternative refueling facilities in all new developments; and
- promoting alternative refueling infrastructure.

#### Slough's Local Transport Plan

**4.4.10** Our Local Transport Plan (LTP) contains a wide range of policies and schemes that will contribute to improving air quality in Slough. A number of these are described briefly below and within Tables C4.1 and C4.2.

**4.4.11** Our parking strategy **PS** seeks to restrain and reduce demand for long stay parking in Slough Town Centre to promote greater use of public transport, walking and cycling.

**4.4.12** Creating safe, environmentally friendly and sustainable neighbourhoods is a priority within our vision. We want to improve satisfaction with Slough as a place to live. As part of this a focus of our Corporate Plan and LTP will be revitalising our Town Centre **TC** and building towards Slough as a regional transport, economic and cultural hub. Improving public realm along the High Street is a vital component of this process and will help support the economic vitality of the town centre. As the hub of our transport network, easily accessible by all modes of transport, it is vital we support and develop its sustainability.

**4.4.13** Our partnership work with First Berkshire in delivering our bus strategy **BS** will be key in promoting greater use of public transport. Within this context we will also promote cleaner buses on the local network.

**4.4.14** Our cycling strategy **CY** includes a programme of actions: implementing cycle routes and facilities, greater provision of cycle parking. Similarly our walking strategy **WA** sets out a programme of schemes to deliver significant improvements to key pedestrian routes across the borough. Work on these strategies is complemented by work the council is undertaking to develop and implement its Rights of Way Improvement Plan (ROWIP).

**4.4.15** We are also working to deliver Safer Routes to School across the Borough that will promote greater walking and cycling to school. Employer and School Travel Plans **TP** are being also being developed. We will continue our work with BAA on the development of the Heathrow Travel Plan as many residents in Slough work at Heathrow.

**4.4.16** Promoting better management of HGVs on the local road network will be a key action in improving local air quality and will therefore form an important objective of our work to develop a freight strategy **FM** for Slough. This work will involve engaging with local businesses and freight operators and will also allow us to promote the use of cleaner technology and fuels. Existing European regulations on engine standards will promote a reduction in emissions as a matter of course.

**4.4.17** As part of this work we will investigate our potential involvement with the existing West London Freight Quality Partnership (WLFQP) which is producing a freight strategy for the Heathrow area.

#### Action to improve management of traffic and traffic speeds

**4.4.18** Improving the management of traffic in Slough **TM**, particularly along the A4, will be fundamental if we are to both reduce congestion and improve air quality along this corridor and in the town centre. We will be investing in our Urban Traffic Management and Control (UTMC) system and other new Intelligent Transport Systems (ITS), particularly focusing on this corridor. We believe we can reduce queuing, improve the reliability of journey times and promote quicker bus journey times along this corridor. All will improve air quality.

**4.4.19** Other traffic and parking management measures such as 20mph Zones and Controlled Parking Zones will help us remove unnecessary traffic from residential areas and improve the flow of traffic on key local routes.

#### 4.5 Work Area 2: Specific measures to tackle air quality problems in AQMA – A4

**4.5.1** As stated above the traffic using the M4 is the fundamental source of the air pollution in Slough's two AQMAs. As a result we recognise that a core component of our action plan will be consultation and partnership working with the Highways Agency to develop a realistic programme of measures that coordinates with their work.

**4.5.2** We have identified that there may be a number of specific minor traffic management schemes at M4 Junctions 5 that may help reduce congestion and reduce emissions in those specific areas. We will investigate possible initiatives in consultation with the HA and consider bringing them forward in our final action plan. Further traffic surveys in the area would further assist our understanding of congestion problems in this area.

**4.5.3** We have also identified potential improvements to the pedestrian and cycling network and environment at M4 Junction 5 that would provide a Safer Route to School. We will investigate their provision.



Key: Timescale: Long = 5 to 10 years; Medium = 2 to 5 years; Short = Less than 2 years  
 Cost: ££££ = Greater than £1 million; £££ = £500k - £1 million; ££ = £100k - £500k; £ = Less than £100k

**Table C4.1: Proposed air quality actions (Work area 1: General measures to improve air quality)**

	Action/measure	Responsibility	Impact on air quality (NOx)	Timescale	Cost	Wider non-air quality impact
<b>Action to Reduce Emissions from Vehicles</b>						
GEN-1	Audit to ensure Council's Vehicle Fleet is maintained to the highest standards and within emission standards.	Slough Borough Council (Transport Manager)	Low	Medium	££	Positive operational benefits.
GEN-2	Investigate trials for new technology where appropriate and act as a point of information for businesses and major fleet operators in the area.	Slough Borough Council (Transport Manager)	Low	Medium	££	Positive image for council.
GEN-3	Investigate joint initiatives with neighbouring authorities to minimize emissions, including joint publicity campaigns, area wide vehicle emission testing programmes and driver training.	Slough Borough Council (Environment Policy and Services)	Low	Short to Medium	£	Positive operational and fuel efficiency benefits.
GEN-4	Work with our partners in the development of a Regional Air Quality Strategy for Heathrow.	Slough Borough Council (Environment Policy and Services)				Wider partnership and best practice benefits.
GEN-5	Work in partnership with local bus operators and BAA to strive for the provision of low or zero emission buses in the area.	Slough Borough Council (Transport Policy) Transport Operators	Medium	Short to Medium	£££	Improved public transport image. Climate Change Benefits.
GEN-6	Ensure developments generating significant additional freight movements are subject to an air quality assessment before implementation.	Slough Borough Council (Transport & Planning)	Medium to High	Medium	£	Consideration of wider environmental and sustainability issues, including climate change.
	<b>LU</b>					
GEN-7	Consider a planning policy that seeks the provision of alternative refueling facilities in all new developments where possible, for example by providing electric vehicle recharging points.	Slough Borough Council (Transport & Planning)	Medium	Medium	£	N/A
	<b>LU</b>					
GEN-8	Promote National Dirty Diesel Hotline.	Slough Borough Council (Environmental Policy and Services)	Low	Low	£	None
GEN-9	Promotion, education and awareness raising through the Local Agenda 21 process – including publicity material to promote non car modes/ environmental awareness/car free days/cleaner fuels etc.	Slough Borough Council (Environment Policy and Services)	Low	Short	£	Wider transport and health benefits. Climate Change Benefits.
GEN-10	For continued national government measures to help the development of less polluting vehicle technologies and fuels, and for financial incentives to encourage their use.	Slough Borough Council (Environment Policy and Services)	Low	Short	N/A	None

Key: Timescale: Long = 5 to 10 years; Medium = 2 to 5 years; Short = Less than 2 years

Cost: ££££ = Greater than £1 million; £££ = £500k - £1 million; ££ = £100k - £500k; £ = Less than £100k

**Table C4.1: Proposed air quality actions (Work area 1: General measures to improve air quality)**

	Action/measure	Responsibility	Impact on air quality (NO <sub>x</sub> )	Timescale	Cost	Wider non-air quality impact
<b>Action to Reduce Traffic Volumes</b>						
GEN-11	Continue to promote major developments in areas well served by public transport. <b>LU</b>	Slough Borough Council (Transport & Planning)	Medium	Short	£	Wider transport and health benefits. Noise and Climate Change Benefits.
GEN-12	To continue to lobby for air quality to continue to be a key consideration when long term infrastructure projects such as Crossrail, extra housing provision or a third runway at Heathrow are discussed or consulted upon.	Slough Borough Council (Transport & Planning)	Low to Medium	Short	N/A	N/A
GEN-13	Support the sustainable economic regeneration of the town centre (through schemes such as the High Street Enhancement) as a destination for commercial and leisure activity. <b>TC</b>	Slough Borough Council & Key Partners/ Stakeholders	Medium	Short	££££	Wider economic, transport, security, urban realm and streetscape benefits.
GEN-14	Apply adopted restrictive parking standards to all new development proposals. <b>LU PS</b>	Slough Borough Council (Transport & Planning)	Medium	Short	£	Wider transport and environmental benefits. More intensive use of space. Noise and Climate Change Benefits. Congestion Benefits.
GEN-15	Require the development of Transport Assessments and Environmental Assessments for all major developments. <b>LU</b>	Slough Borough Council (Transport & Planning)	Low	Short	£	Wider consideration of transport and environmental issues. Noise and Climate Change Benefits.
GEN-16	Ensure Travel Plans are a requirement for all new business developments. <b>LU TP</b>	Slough Borough Council (Transport & Planning)	Medium	Short	£	Wider transport and health benefits. Noise and Climate Change Benefits.
GEN-17	Seek contributions from developers through S106 for public transport, walking and cycling schemes. <b>LU</b>	Slough Borough Council (Transport & Planning)	Low to Medium	Short	£	Wider transport and health benefits. Noise and Climate Change Benefits. Road Safety Benefits. Congestion Benefits.
GEN-18	Support the development of car-free house schemes in appropriate locations. <b>LU</b>	Slough Borough Council (Transport & Planning)	Low to Medium	Short	£	Wider transport and health benefits. Noise and Climate Change Benefits. Road Safety Benefits. Congestion Benefits.

Key: Timescale: Long = 5 to 10 years; Medium = 2 to 5 years; Short = Less than 2 years  
 Cost: ££££ = Greater than £1 million; £££ = £500k - £1 million; ££ = £100k - £500k; £ = Less than £100k

**Table C4.1: Proposed air quality actions (Work area 1: General measures to improve air quality)**

Action/measure	Responsibility	Impact on air quality (NO <sub>x</sub> )	Timescale	Cost	Wider non-air quality impact
GEN-19 Review parking standards as part of LDF review. <b>LU</b> <b>PS</b>	Slough Borough Council (Transport & Planning)	Medium to High	Medium	£	Wider transport and environmental benefits. More intensive use of space. Noise and Climate Change Benefits. Road Safety Benefits. Congestion Benefits.
GEN-20 Introduce Council staff travel plan. <b>LU</b>	Slough Borough Council (Transport & Planning)	Low to Medium	Short	£	Wider transport and health benefits. Noise and Climate Change Benefits. Road Safety Benefits. Congestion Benefits.
GEN-21 Implement Slough's Parking Strategy measures to reduce long stay parking provision within Slough Town Centre and better manage short and medium stay parking. <b>TC</b> <b>PS</b>	Slough Borough Council (Transport & Planning)	Medium	Short	£	Wider transport and environmental benefits. Noise and Climate Change Benefits. Road Safety Benefits. Congestion Benefits.
GEN-22 Implement Bus Strategy measures to promote greater use of the local bus network, including further bus priority measures on key bus routes. <b>BS</b>	Slough Borough Council First	Medium	Short to Medium	££££	Wider transport and environmental benefits. Noise and Climate Change Benefits. Congestion Benefits.
GEN-23 Lobby Department for Transport and Rail operators to increase or at least maintain the frequency of train services stopping at stations within the Borough in order to help tackle private car dependency.	Slough Borough Council (Transport & Planning)	Low to Medium	Short	N/A	None
GEN-24 Implement Cycling Strategy measures to promote more cycling in Slough. <b>CY</b>	Slough Borough Council (Transport & Planning)	Low	Short to Medium	£££	Wider transport, environmental and health benefits. Noise and Climate Change Benefits. Congestion Benefits.
GEN-25 Implement Walking Strategy measures to promote more walking in Slough	Slough Borough Council (Transport & Planning)	Low	Short to Medium	£££	Wider transport, environmental and health benefits. Noise and Climate Change Benefits. Congestion Benefits.

Key: Timescale: Long = 5 to 10 years; Medium = 2 to 5 years; Short = Less than 2 years

Cost: ££££ = Greater than £1 million; £££ = £500k - £1 million; ££ = £100k - £500k; £ = Less than £100k

**Table C4.1: Proposed air quality actions (Work area 1: General measures to improve air quality)**

Action/measure	Responsibility	Impact on air quality (NO <sub>x</sub> )	Timescale	Cost	Wider non-air quality impact
GEN-26 Promote Safer Routes to School to encourage more walking and cycling. <b>WA CY TP</b>	Slough Borough Council (Transport & Planning)	Low	Short to Medium	£££	Wider transport, environmental and health benefits. Noise and Climate Change Benefits. Road Safety Benefits. Congestion Benefits.
GEN-27 Development of travel plans for schools and local businesses. <b>TP</b>	Slough Borough Council (Transport & Planning)	Low to Medium	Short	£	Wider transport, environmental and health benefits. Noise and Climate Change Benefits. Road Safety Benefits. Congestion Benefits.
GEN-28 Develop and implement a Freight Strategy in partnership with key stakeholders. <b>FM</b>	Slough Borough Council (Transport & Planning) Slough Estates Other Partners	Low to Medium	Short to Medium	££	Wider transport and environmental benefits. Noise and Climate Change Benefits. Congestion Benefits.
<b>Action to Improve Management of Traffic and Traffic Speeds</b>					
GEN-29 Development of UTC (SCOOT) and ITS on A4 and other routes to optimize signal operations, reduce delays and manage queuing. <b>TM</b>	Slough Borough Council (Transport & Planning)	Medium	Short	££	Reduced congestion and improved journey time reliability.
GEN-30 Promote CPZs across Slough to better manage on-street parking and reduce unnecessary delays to traffic and public transport. <b>PS TM</b>	Slough Borough Council (Transport & Planning)	Low	Short to Medium	£££	Transport and community benefits Road Safety Benefits. Congestion Benefits.

**Table C4.2: Proposed air quality actions (Work area 2: specific measures to tackle air quality problems in AQMA Order 2 – A4)**

Action/measure	Responsibility	Impact on air quality (NO <sub>x</sub> )	Timescale	Cost	Wider non-air quality impact
<b>Action and partnership work in the AQMA</b>					
A4-1 Work in partnership with the Highways Agency to investigate measures to smooth flows onto and off the M4 at Junctions 5 <b>TM</b>	Slough Borough Council (Transport & Planning) Highways Agency	Medium	Short to Medium	£	Wider transport and environmental benefits
A4-2 Investigate measures to reduce delays and queuing at Junction 5 through improved signing and junction markings <b>TM</b>	Slough Borough Council (Transport & Planning) Highways Agency	Medium	Short to Medium	£	Wider transport and environmental benefits.
A4-3 Improve cycling and walking links across junction 5 to provide a Safer Route to School <b>WA CY TP</b>	Slough Borough Council (Transport & Planning) Highways Agency	Low	Short Term	££	Wider transport, environmental and health benefits.
A4-4 Installing a traffic monitoring site on the A4 in the AQMA to improve the data for future air quality assessments	Slough Borough Council (Environment Policy and Services)	Low	Short Term	£	N/A



## 5 Monitoring progress

### 5.1 Indicators

**5.1.1** Table C5.1 shows the indicators we are proposing to use to monitor progress in improving air quality in Slough generally and specifically within the declared AQMA – A4. The table shows the 2005 baseline, our proposed target for each of these indicators and the trajectories for the LTP2 period.

**5.1.2** Trajectories have been shown only for the indicators relating to traffic flow, speed and bus patronage. The 2004 and 2005 baseline figures and trajectories will be added for each indicator when they become available. Annual trajectories have not been set for the concentration indicator as outside influences such as the weather can affect results in a single year. Our targets are to keep air quality within National Standards.

**5.1.3** We will continue monitoring air pollution levels at our existing permanent air quality monitoring stations (town centre and Colnbrook). A further new permanent site has been installed near the M4 in Chalvey. Data will become available from this monitoring station in our final LTP submission in March 2006.

**5.1.4** We have specifically installed a new permanent traffic monitoring site on the A4 at Brands Hill which will provide traffic flow and speed information within the AQMA. Data from this new monitoring site will become available in late 2005. We are also proposing to monitor bus patronage through the AQMA (services 75/76 and 81 to Heathrow).

**Table C5.1: Air quality indicators for Slough and the AQMA (ug/m3)**

Indicator	Baseline		Target				
	2004	2005	2006	2007	2008	2009	2010
General for Slough							
Town Centre NO2 (annual mean)	34	tbc	-	-	-	-	<40
Colnbrook NO2 (annual mean)	31	tbc	-	-	-	-	<40
M4 Chalvey NO2 (annual mean)	N/A	tbc	-	-	-	-	<40
Specific for AQMA – A4							
Brands Hill NO2 (diff. tube)	48	tbc	-	-	-	-	<40
London Road NO2 (diff. tube)	51	tbc	-	-	-	-	<40
Vehicle Flow (2-Way) AADT	tbc	tbc	tbc	tbc	tbc	tbc	tbc
Vehicle Speed (mph)	tbc	tbc	tbc	tbc	tbc	tbc	tbc
Bus Patronage (services 75/76/81)	tbc	tbc	tbc	tbc	tbc	tbc	tbc

## 5.2 Risks

**5.2.1** Part of the work undertaken in producing this draft plan has been identifying some of the risks to delivering our targets. We have outlined these in the following sections:

### Changing air quality standards

**5.2.2** Legislation on air quality is changing all the time and over the period of this plan there may be a need to revise our targets in line with any new legislation;

### Better traffic data

**5.2.3** The air quality modelling work undertaken to date has been based on available traffic data from across Slough. As a result of this work, and other work on our LTP2, we are collecting more and better traffic data, particularly in the AQMA – A4. This will result in future modelling exercises being more accurate and modifying our understanding of levels of air pollution.

### Economic growth

**5.2.4** General patterns of economic growth clearly impact on levels of traffic growth and freight movements. Linked to this international oil prices will impact on economic growth and travel patterns.

### Major new infrastructure/development

**5.2.5** There are a wide range of major infrastructure projects or development proposals which could impact significantly on levels of background concentrations in the Slough area and within the AQMA. A number of these are listed below, but the list is by no means exhaustive. discussion about future levels of house development in the South East and longer term infrastructure projects such as CrossRail or a Third Runway at Heathrow will impact on air quality in the longer term.

- Heathrow Terminal 5;
- BAA Logistic Centre;
- London Congestion Charging Extension;
- Highways Agency Route Management Strategy; and
- Low Emission Zones in London and/or Heathrow.

