

Consultation Draft Air Quality Action Plan

March 2006



South Bucks
District Council

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1. Introduction

Air pollution is not a new problem. As early as 1273, the use of coal in London was prohibited because of its impact upon health. Historical legislation has numerous references to the control of pollution from the combustion of coal.

The Industrial Revolution was based on the use of coal as an energy source. As industrialisation occurred in the South East, emissions of sulphur dioxide and smoke increased and air quality was dramatically affected.

Early control was provided for by the Alkali Acts. The first Act to be laid before parliament was the Alkali Act 1863, which made no attempt to control smoke, but required 95% of the offensive emissions to be arrested. The early Alkali Acts were consolidated into the Alkali etc Works Regulation Act 1906. This Act covered "noxious and offensive gases" from a number of highly polluting industrial sources.

The 'pea souper' smogs that occurred in the 1950's were a result of heavy industry and power stations, plus domestic coal burning, at a time when coal fires were still the main heating source for homes.

The Clean Air Act 1956 brought about a great improvement in air quality. This Act constituted the operative legislation against pollution by smoke, grit and dust from processes not covered by the Alkali Acts. The Act also prohibited the emission of "dark" smoke from any chimney.

While this, and subsequent Acts brought about improvements in emissions from domestic heating and industry, a new air pollution mix was developing as a result of increased traffic emissions.

These pollutants associated with vehicle emissions, such as nitrogen dioxide and particulate matter, can also impact upon health and the environment in which we live. Certain groups in society are particularly susceptible to elevated air pollution levels, such as those with lung disease and heart conditions and those individuals who suffer from asthma.

In the early 1990's, elevated pollution episodes in urban areas brought about an increased awareness of the inadequacies in the existing legislation. The Government realised that there was need for a change in the way pollution emissions were controlled. Part IV of the Environment Act 1995 required the Secretary of State for the Environment to develop a National Air Quality Strategy, which was produced in 1997.

The National Air Quality Strategy required Local Authorities to undertake a detailed review and assessment of air quality within their areas. This review and assessment enables a comparison to be made with objectives set for seven main air pollutants.

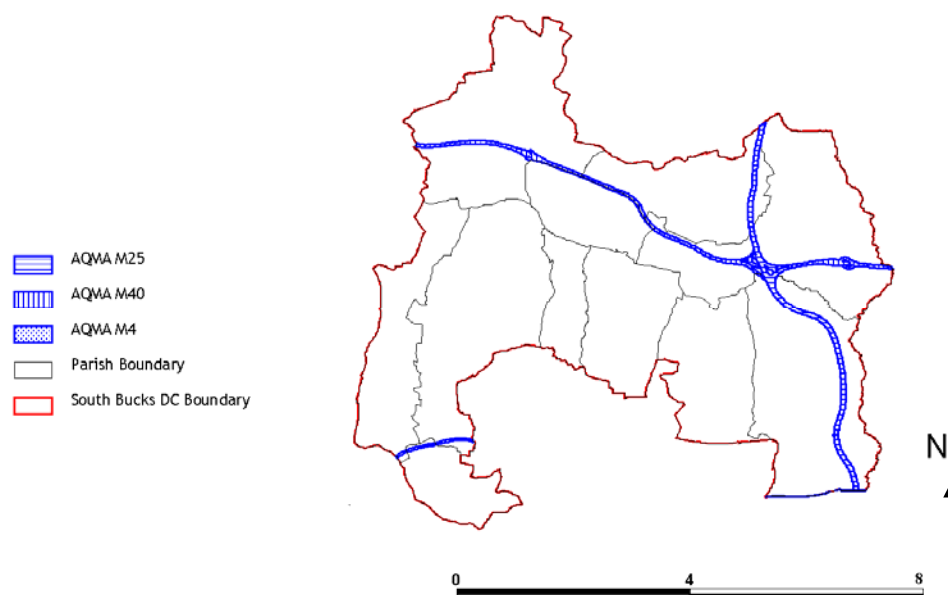
If this process indicated that the objectives were unlikely to be met, then local authorities were required to designate Air Quality Management Areas (AQMAs) and to draw up action plans to determine how the objectives will be met.

South Bucks District Council has a population of 62,700 people (Registrar General 2004 population estimate). 54% of the households in South Bucks have more than one car and only 11% do not own a car (National Statistics 2001 Census). When compared to all other Council's within England and Wales, South Bucks District Council has the fourth highest number of households with 2 or more cars. South Bucks has busy sections of the M25, M4 and M40 within the District where traffic flow can be in the region of 90,000 Average Daily Traffic (ADT), and a number of other connections, including the A4 and A355, where traffic flow can be in the region of 24500 ADT and 20500 ADT respectively.

To date, South Bucks District Council has completed two air quality review and assessments. The first review and assessment, which was completed in 2001, predicated that the whole District would achieve all of the National Air Quality Objectives. However, in order to confirm the results of the initial stage of review and assessment, South Bucks District Council installed a real-time monitoring station in Gerrards Cross.

A second round of review and assessment undertaken during 2003/04 identified that the majority of the District would meet the National Air Quality Objectives for all pollutants. The nitrogen dioxide annual mean objective was, however, predicted to be exceeded at locations close to the motorways. An Air Quality Management Area (AQMA) was therefore declared for corridors along the M25, M40 and M4 motorways in October 2004 (see Figure 1).

Figure 1. An Air Quality Management Area for South Bucks



The challenge for South Bucks District Council is to identify actions to improve air quality within the District and specifically those areas that are predicted to exceed the nitrogen dioxide annual mean objective set in the National Air Quality Strategy. Action must be taken to reduce vehicle emissions so that the whole of South Bucks District Council meets the requirements of the National Air Quality Strategy.

This Strategy details National, Regional and local measures to improve air quality and includes additional Action Plan measures aimed at extending existing policy to improve air quality in the District.

2. The Legal Framework

2.1 The EU Air Quality Framework Directive

The European Union's (EU) air quality policy sets the scene for UK policy. The air quality 'framework' Directive on Ambient Air Quality Assessment and Management came into force in September 1996. This policy sets the framework for air quality management in the EU, through the development of European wide air quality limit values. These legally binding air quality limits are produced in a series of daughter directives, superseding and extending existing European Legislation.

The Air Quality Framework Directive and first daughter directive were transposed into national legislation through the Air Quality Limit Values Regulations 2001. These Regulations require the Secretary of State for the Environment to achieve the air quality limits within the time frame set. This complements the existing National Air Quality Strategy that is discussed below.

2.2 The National Air Quality Strategy

The Environment Act 1995 required the Secretary of State for the Environment to produce a National Air Quality Strategy, setting air quality standards and objectives for specified pollutants.

The National Air Quality Strategy was published in 1997, with a revision being made in 2000 and an addendum in 2003. The strategy required Local Authorities to review and assess air quality in their areas with regard to objectives set for seven pollutants.

The objectives set for the seven pollutants were based on the levels at which no significant risk to health was posed. The health-based standards were developed by the Expert Panel on Air Quality Standards (EPAQS) from medical and scientific evidence.

The most recent version of the National Air Quality Strategy was published in 2000 with an addendum being published in 2003. The following table, Table 1 shows the current objectives levels set.

Table 1. Air Quality Strategy 2000 objectives and the objectives in the 2003 Addendum prescribed in regulations for the purpose of local air quality management (for England).

<u>Pollutant</u>	<u>Objective</u>	<u>Concentration measured as</u>	<u>Date to be achieved by</u>
Benzene	16.25 µg/m ³ (5 ppb)	Running annual mean	31 December 2003
Benzene	5 µg/m ³ (1.54 ppb)	Annual average	31 December 2010
1,3-butadiene	2.25 µg/m ³ (1 ppb)	Running annual mean	31 December 2003
Carbon monoxide	10 µg/m ³ (8.6 ppb)*	Maximum daily running 8-hour mean	31 December 2003
Lead	0.5 µg/m ³	Annual mean	31 December 2004
	0.25 µg/m ³	Annual mean	31 December 2008
Nitrogen dioxide	200 µg/m ³ (105 ppb) not to be exceeded more than 18 times a year	1-hour mean	31 December 2005
Sulphur dioxide	40 µg/m ³ (21 ppb)	Annual mean	31 December 2005
	350 µg/m ³ (132 ppb) not to be exceeded more than 24 times a year	1-hour mean	31 December 2004
Particulates (PM10)	125 µg/m ³ (47 ppb) not to be exceeded more than 3 times a year	24-hour mean	31 December 2004
	226 µg/m ³ (100 ppb) not to be exceeded more than 35 times a year	15-minute mean	31 December 2005
	50 µg/m ³ not to be exceeded more than 35 times a year	24-hour mean	31 December 2004
* More stringent objective	Set in addendum 2003	Annual mean	31 December 2004

The air quality standards and objectives, take into account an assessment of the economic efficiency, practicability, technical feasibility and timescale implications.

It should be noted that the PM10 objective adopted in the Air Quality Strategy Regulations 2000 is less stringent than the original health based regulation set in the Air Quality Strategy Regulations 1997. This is because the original objective was seen as being too demanding. More stringent objectives have been proposed in the 2003 Addendum of the National Air Quality Strategy, but the objectives will not be formalised until after the EU Daughter Directive for particulates has been reviewed.

The National Air Quality Strategy provides 9 pollutant objectives. While 7 of these pollutants, as shown in table 1, are intended to be delivered by a combination of EU, national and local measures, the objectives set for ozone and polyaromatic hydrocarbons are to be managed through national and international measures, as they cannot be controlled by local measures.

The National Air Quality Strategy places a requirement on Local Authorities to declare Air Quality Management Areas (AQMAs) for those locations that are not predicted to be met by the target date, in accordance with Section 83 (1) of the Act. Under Section 84 (2) of the Act, local authorities are required to produce Air Quality Action Plans for those areas where an AQMA is designated. The Air Quality Action Plan must detail actions that the Local Authorities will take to improve air quality within the AQMAs.



2.3 The Highways Agency

The Council's further assessment of air quality undertaken in August 2005 confirmed that locations adjacent to the M25 were predicted to exceed the National Air Quality Strategy annual mean nitrogen dioxide Objective. Other locations close to the M25, M40 and M4 motorways are predicted to achieve the National Air Quality Objective for annual mean nitrogen dioxide but predicted concentrations are close to the $40\mu\text{g}/\text{m}^3$ objective level set.

The Highways Agency is an Executive Agency of the Department for Transport (DfT), and is responsible for operating, maintaining and improving the strategic road network in England on behalf of the Secretary of State for Transport. The Highway Agency has responsibility over the M25, M40 and M4 motorway sections within South Bucks.

It is important for the Council to consult the Highways Agency regarding the development of an Air Quality Action Plan so that actions can be identified to reduce traffic emissions from the motorway network in the District.

The Highways Agency's purpose is to operate, maintain and improve the strategic trunk road network with one of the objectives being to respect the environment. The Highways Agency recognise that motorways can have an

effect on the environment and acknowledge that they can influence this effect on air quality through:

- Contributing to strategic planning;
- Road improvements;
- Integrating transport and encouraging sustainable travel;
- Providing better information for improved operation; and
- Working with local authorities to deliver the Air Quality Strategy.

2.4 The Local Transport Plan (LTP 2006-2011)

The LTP 2006-2011 describes the County Council's strategy for local transport. The LTP seeks to meet individual travel needs, supporting continued growth and prosperity and specifically sets out a detailed five-year programme of schemes and initiatives. It addresses the four main shared priorities set by the Government and Local Government Association (LGA) agreed in July 2002. The shared priorities listed below aim to raise standards across schools, transform the local environment and meet local and national transport needs effectively.

Shared Priorities include:

- Better Air Quality
- Tackling Congestion
- Delivering Accessibility
- Safer Roads

The activities and policies of Buckinghamshire County Council as a 'Local Transport Authority' can have a major impact on improving air quality or at least, reducing the negative effects of transport, through the following means:

Traffic Management

- Ensuring peak time travel is managed and congestion minimised
- Priorities identified to combine sustainable travel with essential car and commercial vehicles
- The County Council have begun looking into Urban Traffic Management & Control (UTMC) and Intelligent Transport Systems (ITS)

Delivering Modal Shift

- Help encourage a modal switch to walking, cycling and public transport
- Procuring, where financially practicable, as environmentally efficient a vehicle fleet as possible, adopting emission standards for services under Bus Quality Partnerships and PSVs procured through Government funding
- Offering further discounts on bus and trains for council staff, teachers and town workers to reduce individual transport

- Adhering to DfT "Making Smarter Choices Work"
- Increasing accessibility of bus and rail routes to integrate wider communities with respect to jobs and services

Safer Routes to School & Travel Planning:

- Implementing transport and education services into Safer Routes to School
- Travel plans for schools involves communication, marketing and promotions
- School Travel Advisory Group (STAG) involves developing new approaches to ensure consistent level of School Travel Planning
- Increase school travel plans like "Going For Gold" which is a walking to school initiative to educate children on alternative transport mode.

Workplace Travel Planning

- Active travel plans aimed at minimising car based travel to and from workplace

Cycling and walking

- Route/area based strategies and projects to promote cycling and walking on key urban journeys to encourage modal shift

Parking

- Investigating measured controls and residents parking schemes,

2.5 Local Development Framework

The Planning and Compulsory Purchase Act 2004 introduces a new type of plan at the local level, to replace Local Plans, called Local Development Frameworks (LDFs). All Local Planning Authorities must prepare a Local Development Framework. A Local Development Framework will comprise a series of documents called Local Development Documents (LDDs), which together will provide the framework for delivering the spatial planning strategy for the area.

Local Development Frameworks must have clear links with the local Community Strategy for the area in order to assist in delivering its policies relating to land use and development. In doing this, full account can be taken of the land-use consequences of other policies and programmes relating to education, health, waste, recycling and other environmental, economic and social objectives including air quality.

Local Development Documents which comprise the Local Development Framework must include a Statement of Community Involvement and can include any additional documents that the local planning authority deems appropriate for delivering the spatial strategy for the area. Typically, the Local Development Frameworks will be made up of the following components:

2.6 The South Bucks District Council Local Development Framework

Development Plan Documents (DPDs)

Development Plan Documents will form the heart of the new Local Development Framework. A series of documents, they will set out the local planning authority's policies relating to the development and use of land in their administrative area. These may include:

- **Core Strategy** - setting out the local authorities' long-term vision and strategy to be applied in promoting and controlling development throughout its area. It will contain a set of primary policies for delivering the core strategy. Broad locations for development may be set out in a key diagram. A Core Strategy must be prepared as all other Development Plan Documents flow from it. The Government has indicated that, together with a Statement of Community Involvement, these are the other Documents which Local Authorities should concentrate on preparing in the first few years of the new system;
- **Site Specific Allocations** - these would allocate land for specific uses and development. Typically, Development Plan Documents may need to identify land for residential use and development, in order to assist in demonstrating that a Local Authority has policies which demonstrate that it has a supply of land to meet the housing requirements that it is given by the Regional Planning Body.
- **Area Action Plans** - which may be relevant to particular areas of change where more pro-active policy treatment is required;
- **Other Development Plan Documents** - these might include thematic documents covering housing, employment and retail development, or may include generic development control policies applying to all development.
- **Proposals Map** (with inset maps, where necessary) - showing the geographical areas to which policies in Development Plan Documents apply, and identifying those areas for which Action Area Plans would be produced.

Statement of Community Involvement (SCI)

This document will set out what and how the Council intends to consult with the community. As the Local Development Documents are intended to be the spatial expression of the Community Strategy, the SCI will also identify the links between the Local Development Documents and the Community Strategy. The Government has indicated that this is one of the first Documents which

Local Authorities should concentrate on preparing in the first few years of the new system.

Development Plan Documents and the Statement of Community Involvement must be submitted to the Secretary of State for independent examination. Local authorities must also ensure that the documents are in general conformity with the Regional Spatial Strategy.

Supplementary Planning Documents (SPDs)

Supplementary Planning Documents can be developed to further define and implement the policies and strategies contained within the Development Plan Documents. Examples might include development briefs, car parking standards, and design guides that are applicable to local circumstances. These documents will also be subject to public consultation.

Local Development Scheme (LDS)

Local Planning Authorities must prepare a Local Development Scheme. The Local Development Scheme will set out what Documents form part of the Local Development Framework; what existing Plans and policies will be saved in the interim period whilst new Local Development Documents are being prepared; and a programme for the preparation of new Local Development Documents, with a particular emphasis on the next three years, but also with an eye to the longer term. The Local Development Scheme will be reviewed annually. The first Local Development Scheme had to be formally submitted to the Government Office by 28th March 2005. The Council has submitted its Local Development Scheme to the Secretary of State and a copy of this can be downloaded from the Council's website (www.southbucks.gov.uk/environment/planning/default.asp).

Annual Monitoring Report

All Local Planning Authorities must produce an Annual Monitoring Report. This will assess the implementation of the Local Development Scheme and the extent to which policies in Local Development Documents are being achieved.

Sustainability Appraisal

The concept and attainment of sustainable development is increasingly at the forefront of spatial planning. An essential part of the production process is that the emerging Local Development Framework must be the subject of a Sustainability Appraisal and Strategic Environmental Assessment. While the methodologies of each are slightly different, both have the objective of assessing the economic, social and environmental impacts of Development Plan Documents and Supplementary Planning Documents. Documents will be tested to ensure that they reflect sustainable development objectives. Government has suggested integrating the two processes to avoid unnecessary confusion and duplication. The findings of this process must be published by the Local Planning Authority.

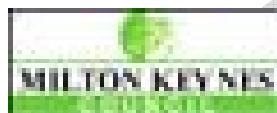
As set out in the Local Development Scheme, the Core Strategy is one of the first Local Development Documents that the Council is preparing. The first main stage in the preparation of the Strategy is the preparation of a Scoping Report.

The Scoping Report

The Scoping Report sets out the Framework for how the Sustainability Appraisal will be carried out for the South Bucks Core Strategy Development Plan Document. This Framework (The Scoping Report) sets out other plans which are relevant to the Core Strategy, provides a wealth of information about the District, and identifies key issues and broad generic options for the future. It also sets out a draft set of proposed objectives and indicators, which would be used in future stages of the process to assess the sustainability merits of the different options.

Consultation on the Scoping Report took place between 6th May and 10th June 2005.

2.7 Buckinghamshire and Milton Keynes Air Quality Strategy



South Bucks
District Council



The Local Government structure in Buckinghamshire consists of the County Council, and four District Councils and the unitary authority of Milton Keynes. Like South Bucks District Council, Wycombe District Council has declared an Air Quality Management Area because of predicted exceedences adjacent to the M40 motorway. Aylesbury Vale is currently considering declaring while Chiltern DC and Milton Keynes Council have not declared AQMAs at the time of this action plan. Note that this situation will inevitably evolve as more information comes to light. Road traffic is the main source of pollution within the County and because of this common source of air pollution it was considered that the greatest impact on improving air quality within Buckinghamshire would be achieved through partnership working with all of the authorities in the County.

The Countywide air quality strategy is being produced on behalf of the Bucks Air Quality Management Group, which consists of representatives from all the District Councils/Unitary Authorities, as well as Bucks County Council and the Strategic Health Authority/Primary Care Trust. The Draft Strategy describes the plans drawn up by the participating organisations to improve and protect ambient air quality in the County during the short-medium and long term. The proposals set out to protect the health of people and the environment without imposing unacceptable economic or social costs. They are closely linked to the ideal of Sustainable Development, which includes:

- Social progress, which meets the needs of everyone.
- Effective protection of human health and the environment.
- Maintenance of high and stable levels of economic growth and employment.
- Local Transport Plans.

The Draft Bucks and Milton Keynes Air Quality strategy focuses on a number of areas where air quality improvements are sought:

- Air Quality and Land Use Planning.
- Air Quality and Transport.
- Reducing Emissions from Industrial and Domestic Sources.
- Air Quality and Sustainability.
- Air Quality and Environmental management Systems.
- Promoting Air Quality
- Co-operation and Partnership

Although Local Authorities will play a key role, the success of the Bucks and Milton Keynes Air Quality Strategy will depend on **partnerships** within Local Government, local businesses, industry, community groups and individuals.

This present Action Plan takes the objectives of the Bucks and Milton Keynes Air Quality Strategy and adapts them for implementation at a more local level within South Bucks. The draft Actions included in the Strategy, which are to be considered for adoption by South Bucks District Council are attached as appendix 2.

2.8 Local Air Quality Management-Review and Assessment In South Bucks

The National Air Quality Strategy (NAQS), which was published in 1997, introduced a new statutory framework for dealing with air pollution. The new strategy, which included Local Air Quality Management (LAQM), requires local authorities to periodically review and assessment air quality within their areas. This review and assessment of air quality was undertaken in a number of stages, with each stage in the process adding increased complexity. This initial review and assessment was undertaken in 2001.

The initial stage of assessment, stage 1, involved a screening of existing and proposed potential significant pollution sources within South Bucks. This first stage showed that national action would mean that NAQS air quality objects would be achieved on time for benzene, 1-3-butadiene and lead. It was highlighted that further investigation would be required for the NAQS

objectives for carbon monoxide, nitrogen dioxide, PM₁₀, and sulphur dioxide. The objectives and standards set for the different pollutants can be seen in Table 1 (Page 7).

Stage 2 involved a further investigation of the pollutants established in stage 1. In this stage some initial modelling of monitoring data and source data was undertaken to determine whether there was likely to be exceedences in the target years. This stage found that South Bucks was not likely to exceed the objective set for carbon monoxide, however, further assessment would be required for nitrogen dioxide, PM₁₀, and sulphur dioxide. A third stage of review and assessment was therefore undertaken.

Stage 3 involved a detailed assessment of current and future air quality in relation to nitrogen dioxide, PM₁₀, and sulphur dioxide. The assessment involved the use of monitoring data and mathematical modelling. The results of the analysis showed that South Bucks was predicted to exceed the National Air Quality Strategy Objective for annual mean nitrogen dioxide but that these locations were not areas of relevant public exposure. DEFRA accepted the findings of South Bucks District Council that identified that an Air Quality Management Area was not required at this stage.

The National Air Quality Strategy requires a system of periodic review and assessment and a second round of air quality review and assessment was undertaken in 2003/04. A second round of assessment is a more streamlined process consisting of an updating and screening assessment and then a detailed assessment if the initial process indicates that one or more National Air Quality Strategy Objective may be breached.

The initial Updating and Screening Assessment reviews sources of National Air Quality Strategy pollutants and identifies those pollutants where further, more detailed assessment is required.

The Updating and Screening Assessment for South Bucks identified that the main issue for SBDC to address in terms of local air quality would be annual mean concentrations of nitrogen dioxide (NO₂) associated with road traffic emissions. It was considered that on the basis of PM₁₀ (particulate matter) concentrations monitored at Gerrard's Cross real time air quality monitoring station, which could almost be considered as a worst-case monitoring location within the District, PM₁₀ concentrations would meet the 2004 objective limits. However, as a Detailed Assessment of NO₂ was proposed for road traffic sources, and based on uncertainties in the Stage 3 modeling, as a precautionary measure it was felt appropriate to further assess PM₁₀ emissions from these same sources.

The Detailed Assessment developed further the information gathered and the conclusions reached in the Updating & Screening Assessment and involved the use of more sophisticated modeling and monitoring techniques. The Updating and Screening Assessment concluded that the following areas would require a Detailed Assessment:

- M40 Junctions 1 to 3;
- A40 A40/M40 convergence, Junction 1 roundabout, to the border of

- Chiltern and at Wycombe End;
- A4020 South of M40 Junction 1; and
- M4 Junction 4B to 5 and Junction 7 to 8.

The Detailed Assessment concluded:

- No exceedences are predicted at sensitive receptors in relation to annual mean or 24-hour mean PM10 concentrations for 2004. Wide scale exceedences are shown on the basis of the provisional 2010 objectives.
- The Council should consider declaring an AQMA in relation to NO₂ annual mean concentrations in the following areas;
 - To the north of the M4 in the Oaks Stubbs Lane area in Dorney
 - To the south of the M4 where the B3026 crosses the motorway
 - Cherry Orchard Farm to the east of the M25
 - At Gerrard's Cross where the A40 crosses the M25
- Modeled concentrations are close to the objectives at sensitive receptors in the following locations. Additional diffusion tube monitoring should be introduced to provide further clarity as to the levels of NO₂ at residential property façades in these areas;
 - Sutton End Cottage to the north of the M4
 - Victoria Crescent to the west of the M25
 - Wooburn Green Lane to the north of the M40
 - Coldharbour Farm Cottages to the west of the M25

As the result of the findings of the Detailed Assessment of air quality in the District an Air Quality Management Area (AQMA) was declared for corridors along the M25, M40 and M4 motorways in October 2004.

The national Air Quality Strategy requires all Local Authorities who have designated an AQMA to undertake a further assessment of air quality within the AQMA. This further assessment is intended to refine the outcomes of the earlier stages of review and assessment. This further review can provide a final checking or clarification of the results from Detailed Assessment, and is an opportunity for further refinement of both monitoring and modelling data.

The Further Assessment of Air Quality was completed in September 2005. The assessment identified that, utilizing information about 2004 measured pollution concentrations, traffic flows and meteorology, the National Air Quality annual mean nitrogen dioxide objective is unlikely to be exceeded in the majority of the District. However, properties adjacent to the M25 are likely to exceed the nitrogen dioxide annual mean objective and locations close to the M4 and M40 are likely to experience nitrogen dioxide concentrations close to the 40µg/m³ objective. The reason for the reduction in predicted exceedences is because of reduced traffic flow and reduced measured pollution levels in 2004 as opposed to 2003 (when the detailed Assessment was undertaken). 2003 was a worse year for pollution levels, because of an increase incidence of meteorological conditions that result in reduced nitrogen dioxide dispersion.

The Further Assessment of Air Quality also investigated the contribution of nitrogen dioxide concentrations from different vehicle types. The assessment identified that Heavy Duty Vehicles (HDVs) are responsible for a large

proportion of the nitrogen dioxide emissions from the motorways. The assessment indicated that approximately 61-64% of total nitrogen dioxide emissions are related to HDVs on the M40, while on the M4 HDVs is responsible for approximately 65-70% of total nitrogen dioxide emissions and 74-76% of nitrogen dioxide emissions from the M25 are from HDVs. While emissions of nitrogen dioxide from the motorways are mainly from HDVs, HDVs account for approximately 13% of the vehicles on the motorways in the District. This highlights their disproportional impact upon nitrogen dioxide levels within the Air Quality Management Area and the need for action to focus on reducing the impact of emissions from HDV use in the District.

The Further Assessment of air quality also considered a number of options for speed changes on the M4 and M40. The assessment investigated the air quality impacts of reducing speeds on the motorway sections within South Bucks. The M25 was excluded from the assessment because of variable speed limits. The assessment indicated that reduced speeds on these sections of the motorway would have limited impact upon improving air quality in the Air Quality Management Area and that the focus should be directed to reducing emissions from HDVs.

The National Air Quality Strategy also requires those Local Authorities who have designated an Air Quality Management Area to produce an Action Plan identifying measures that will be taken to improve air quality in the District and, in particular, improve air quality so that all of the National Air Quality Objectives are achieved.

This Action Plan details existing and proposed action areas and objectives for improving air quality within the District.

3 The National Air Quality Strategy pollutants.

Poor air quality impacts upon human health. It is for this reason that both historic and modern legislation has sought ways to reduce air pollution emissions from many day-to-day activities.

Dark smogs, which affected Cities in the 1950's and 1960's, have been replaced with a new type of smog. While industrialisation caused smog associated with smoke and sulphur dioxide, modern smogs, 'photochemical smog's' are produced mainly as a result of road traffic emissions. The emissions from vehicles produce a complicated chemical mix, which, under certain meteorological conditions, can produce a photochemical smog episode.

It was as a result of photochemical smog's in the early 1990's that the Government laid down the requirements for a National Air Quality Strategy (part IV of the Environment Act 1995). The National Air Quality Strategy identified a number of health threatening pollutants for which health related standards were set.

It is important to note that only nitrogen dioxide, has been predicted to exceed the National Air Quality Strategy Objectives within South Bucks, and the locations predicted to exceed the objective are areas in close proximity to the M25. Locations in close proximity to the M4 and M40 are also predicted to experience elevated nitrogen dioxide concentrations close to the National Air Quality Strategy Objective.



3.1 Nitrogen Dioxide

The air quality review and assessment process in South Bucks has identified that the National Air Quality Objective for annual mean nitrogen dioxide is likely to be exceeded in locations adjacent to the M25. Locations adjacent to the M4 and M40 are predicted to experience elevated concentrations close to the National Air Quality Strategy Objective.

Nitrogen oxides, such as nitrogen dioxide, are generated during combustion. High temperatures that occur during combustion cause naturally occurring oxygen and nitrogen in the air to combine.

The main source of nitrogen oxides is from vehicle emissions. While the greater proportion of nitrogen oxides emitted is nitrous oxide, oxidation, which occurs in the atmosphere, increases nitrogen dioxide concentrations.

Exposure to high concentrations of nitrogen dioxide can affect lung function. Nitrogen dioxide is an oxidising agent that can cause lung irritation, coughs and sore throats, as a result of acute exposure. Elevated air concentrations can particularly affect those who suffer from asthma.

Chronic (long-term) exposure to elevated nitrogen dioxide concentrations has also been seen to affect lung function, although the evidence suggests that acute exposure causes the greatest adverse reaction.

3.2 Particles (PM10s)

The air quality review and assessment process in South Bucks has identified that all areas of south bucks are predicted to meet the National Air Quality Strategy Objective for particulate matter (see Table 1, Page 7). However, an indicative limit value for 2010 has been set for particles. While this limit value is not currently a National Air Quality Strategy Objective, it is likely that it will be incorporated into the National Air Quality Strategy in the near future. Early predictions indicate that some areas of South Bucks may exceed this indicative limit value.

PM10s (particulate matter with an aerodynamic diameter of 10 μ m (micrometers) or less) are the small sized particles that cannot be removed by the lungs protection system. Therefore, these particles penetrate deep within the lungs where irritation can occur. Particulate matter is made up of organic and inorganic particles and are produced both directly by human activities such as combustion, and natural activities such as the weathering of soils. They are

also produced as 'secondary particles' by chemical reactions in the air. The main source of particles in South Bucks is vehicle emissions.

The health effects of particulate matter depends on the substances chemical composition and the size of the particle. Airborne particles may contain recondensed organic and metallic vapours making them particularly toxic. For example, diesel engines emit oily fine black particles, which may be impregnated with complex organic compounds such as polycyclic aromatic hydrocarbons (PAHs), which have been shown to have a carcinogenic effect.

Even at relatively low concentrations PM₁₀'s have been shown to cause changes in lung function. Because of the variation of individual thresholds within the population and the variability in personal exposure at a measured concentration, it may well not be possible to detect a measured concentration below which no one in the population will be affected. People with asthma are particular susceptible. Long-term exposure can lead to cardiovascular and respiratory diseases.

3.3 Carbon Monoxide

No areas of South Bucks District Council are predicted to exceed the carbon monoxide National Air Quality Strategy Objective (see Table 1, Page 7).

Carbon monoxide (CO) is a colourless, odourless, tasteless gas that is slightly lighter than air. It is well known as a poisonous gas produced by the incomplete combustion of fuel. Its main source in the UK is road transport. It is also a pollutant that can be emitted in high concentrations from domestic heating systems if they are not functioning correctly. Carbon monoxide exerts its toxic effect on humans by binding very tightly with haemoglobin in the blood. Haemoglobin is the oxygen-carrying medium in the blood. Increased levels of carboxyhaemoglobin (carbon monoxide bonded to haemoglobin) in the blood, reduces its oxygen carrying capacity. In very high doses this is fatal. In lower doses the reduction in oxygen-carrying capacity can precipitate angina in those susceptible and reduce mental performance, resulting in confusion and reduced co-ordination.

3.4 Sulphur Dioxide

No areas of South Bucks are predicted to exceed the national Air Quality Strategy Objective for sulphur dioxide (see Table 1, Page 7).

This is one of the older air pollutants and was involved in the deaths and ill health seen in the London smog's of the 1950s and 1960s. Since then, however, emissions have been significantly reduced through legislative measures.

Sulphur dioxide (SO₂) is a colourless gas with a choking taste. It is produced by the burning of sulphur compounds that are a natural constituent of coal and oil.

Sulphur dioxide is a potential bronchiole constrictor (restricts lung function) in high concentrations. People who suffer from asthma are particularly susceptible to an adverse response to high concentrations. Sulphur dioxide has a combined effect with particulate matter and it is difficult to establish independent health effects.

Sulphur dioxide can affect both plants and people. Plants are more sensitive than people to sulphur dioxide and are affected by lower levels of sulphur dioxide in the air. With plants, the leaves or needles are the first to be damaged by exposure to high sulphur dioxide levels. Stems and buds are more resistant to harmful effects. The sensitivity of a plant is also affected by the species of plant, amount of sunlight, temperature, humidity levels, soil moisture levels and stage of plant growth.

As sulphur dioxide is acidic it corrodes stonework and other materials.

3.5 Benzene

No areas of South Bucks are predicted to exceed the National Air Quality Strategy Objective for benzene (Table 1, Page 7).

Benzene is a minor constituent of petrol (~ 2% by volume). It occurs naturally in crude oil and forms during the upgrading of fuel oil. Benzene is a chemical compound of carbon and hydrogen and is a colourless clear liquid at ambient temperatures. It will readily evaporate and is highly flammable.

In the UK, the majority of benzene emissions originate from un-burnt fuel in petrol vehicle exhaust gases and fuel evaporation during refuelling. Benzene is not present in diesel.

Benzene is a class 1 carcinogen, with proven causal association with acute non-lymphocyte leukaemia in humans¹.

It is at present impossible to determine a concentration at which there is no detectable risk. The objective set in the National Air Quality Strategy therefore adopts a concentration where the risk to health is seen as being small.

¹ Substances known to be carcinogenic to humans. There is sufficient epidemiological evidence to establish a causal association between human exposure and the development of cancer.

3.6 1,3-butadiene

No areas of South Bucks are predicted to exceed the 1,3-butadiene National Air Quality Strategy Objective (Table 1, Page 7).

1,3-butadiene is a hydrocarbon gas at ambient temperature and is formed during the combustion of petrol and diesel fuel. The South Bucks District has no such industry.

Other sources of 1,3-butadiene include industrial chemical plants and the manufacture of synthetic rubber tyres.

Prolonged exposure to high concentrations has been shown to be associated with incidences of cancer. Short-term exposure to high concentrations can result in irritation of the eyes, nose, throat and skin.

3.7 Lead

No areas of South Bucks are predicted to exceed the lead National Air Quality Strategy Objective (see Table 1, Page 7).

In the past, the main source of atmospheric lead was the combustion of lead petrol in road vehicles. Lead has been phased out of petrol as a result of the EURO standards scheme and air borne levels of lead have dramatically declined. Lead is also emitted from metal processing and waste incineration.

Lead can damage a range of biochemical systems in humans including haemoglobin production, the nervous system and the kidneys, Children are particularly sensitive and high blood levels have been linked to behavioural problems and lower IQs.

3.8 Ozone

Ozone is included within the National Air Quality Strategy because of its health implications, but as a target value to be achieved nationally rather than by Local Air Quality Management (LAQM).

Ground level ozone (O₃) is a 'secondary pollutant'. It is not emitted directly from any man-made source in any significant quantities, but arises from chemical reactions in the atmosphere initiated by sunlight. The major pathway involves nitrogen oxides and volatile organic compounds reacting together to form ozone.

These reactions occur over a period of some hours, and ozone concentrations are frequently higher at a distance from the source of the nitrogen oxides.

The effects of ozone are again seen primarily in the respiratory system function. Short-term effects include changes in lung function measurements and inflammation. Higher and longer-term exposure is related to more severe alterations in lung function. Sensitivity to allergens may also be increased, and there is some evidence to suggest that asthmatics are more sensitive to the effects of ozone than other members of the public. It is possible that the inflammatory response produced by exposure to ozone may last longer in asthmatics than in other people.

4 Objectives of the Action Plan

The overall aim of this Action Plan is to minimise the effects of air pollution on human health and the environment. The Action Plan therefore fulfils the statutory requirement placed on South Bucks District Council by the National Air Quality Strategy, to develop an Air Quality Action Plan to improve air

quality within the Air Quality Management Area that was declared on the 1st of October 2004.

This Action Plan therefore meets the Council's aim to '*Endeavour to make our environment measurably cleaner, healthier and managed in a way to preserve it for future generations.*'

5 Actions to reduce emissions from vehicles

5.1 Introduction

In the South Bucks District the private car dominates road traffic. Within South Bucks Car ownership is high. 54% of the households in South Bucks have more than one car and only 11% do not own a car (National Statistics 2001 Census). When compared to all other Council's within England and Wales, South Bucks District Council has the fourth highest number of households with 2 or more cars.

On an individual basis however, emissions from Heavy Duty Vehicles HDV's and buses are many times greater than for cars. Although car travel dominates in South Bucks, over 70% of NO₂ concentrations within the Air Quality Management Area adjacent to the M25 is produced by HDVs (Further Assessment of Air Quality in South Bucks 2005).

Vehicle technology is constantly improving. Technology has been developed that provides a reduction in emissions greater than that achieved through the use of cleaner diesel and petrol road vehicles. This includes diesel vehicles with exhaust treatments, the use of Liquefied Petroleum Gas (LPG), Compressed Natural Gas (CNG) or electricity where available.

LPG vehicles are manufactured at a reasonable cost and the conversion of petrol engines to LPG is also economically viable. CNG is more suitable for HGV's but due to the lack of public refuelling stations it is necessary for fleet operators to install their own refuelling stations.

Electric vehicle development is progressing rapidly and the availability of improved engine design and the smaller city cars, which are powered by electric engines, is increasing. The fuel cell is at an early stage of development. This technology allows on-board electricity generation and therefore avoids the need for large batteries. Other forms of environmentally friendly vehicles are also being developed in increasing numbers and vehicle performance is constantly being improved.

Improvements through EURO 4 and increased fuel standards will continue to reduce emissions (see section 5.2 for information on EURO standards). The availability of alternative fuel supplies also impacts upon the uptake of alternative vehicles. The availability of alternative fuels will depend on their uptake by petrol stations. There is a certain balance that needs to be achieved between alternative vehicle suppliers and fuel providers. Increased supply of vehicles without a network of refuelling stations will prevent uptake and a fuel supply network is redundant without the vehicles to utilise the supply. It is

therefore important for there to be contact between the two parties to aid expansion in both areas.

The introduction of alternative fuelled vehicles is likely to be a long-term measure that has a gradual positive impact.

5.2 European/National policies to encourage the use of cleaner vehicles: Grant Aid

Until the end of March 2005, The Department of Transport (DfT) offered grants through the Energy Savings Trust's Transport Energy programme towards the cost of purchasing alternative fuelled vehicles, converting to cleaner fuels or retrofitting diesel vehicles. These grants were available through two schemes, *Power Shift* and *Cleanup*. The grants were developed to create a sustainable market for clean fuel vehicles by offsetting the additional costs of converting to cleaner vehicles. The *Cleanup* programme specifically concentrated on air pollution hotspots and is only available for vehicles over 3.5 tonnes and black cabs. The Government and the Energy Savings Trust are currently in consultation with the European Union to determine whether a similar scheme should continue or whether an alternative scheme should be used to encourage the up-take of cleaner technologies.

European/National policies to improve vehicle emissions: EURO standards

Improved emission standards are continually being set through the European Auto Oil Programme. This programme ensures a continued improvement in vehicle emissions by imposing certain emissions standards on new vehicles. Emission standards have improved with increasing technological improvements to engines.

These improvements in emissions have reduced fine particulate matter emissions by 41% by 2005 from the emission levels in 1996. Oxides of nitrogen (NOx) emissions are have also reduced by 52% in the same period. By 2005 it was estimated that 48% of petrol cars were of emissions class EURO 3 and 31% would meet EURO 2 compared to 11% of petrol cars in 1996. 54% of diesel cars were also estimated to be of emission standard EURO 3 by 2005. The full details of emission reduction targets are given in Table 2.

European/National Policies: cleaner Fuelling

Alongside the improvements in vehicle technology, vehicle emissions are being reduced by the introduction of cleaner 'conventional' fuels (petrol and diesel). Improvements in fuel have been brought about as a result of EU legislation and the introduction of fuel duty incentives to accelerate their take-up.

Table 2 European Union emission standards for passenger cars.

Type	Date	Emissions in				
		g/km	g/km	g/km	g/km	g/km
		CO	HC	NOx	HC and NOx	Particulate Matter
Stage 1	1992	2.72			0.97	<u>0.14</u>
Stage 2	1996	2.20			0.50	
		<u>1.00</u>			<u>0.70</u>	<u>0.08</u>
Stage 3	2000	2.30	0.20	0.15		
		<u>0.64</u>		<u>0.50</u>	<u>0.56</u>	<u>0.05</u>
Stage 4	2005	1.00	0.10	0.08		
		<u>0.50</u>		<u>0.25</u>	<u>0.30</u>	0.03

Those figures that are red and underlined are for diesel cars

Since 1989 The Government has used fiscal incentives to encourage the use of cleaner fuels commencing with the tax differential for unleaded petrol. In more recent years a similar tax differential has been applied to Ultra Low Sulphur Diesel (ULSD) compared to normal diesel and a 29% reduction in duty on road fuel gas applied from 1999. Since 1999 ULSD has had the same duty rate as unleaded petrol.

In January 1999 a Vehicle Excise Duty concession of up to £500 was introduced for buses and lorries that are fitted with catalysts or run on gas, and therefore meet greater emissions standards for particulate matter. In March 1999 this was increased to a £1,000 maximum and a cut of £55 on Vehicle Excise Duty (VED) was introduced for vehicles up to 1100cc. The March 2001 Budget introduced a lower rate of VED to cover cars in Private and Light Goods taxation class with an engine size of 1549cc or less. From March 2001, a system of graduated VED has been in operation for new cars based primarily on their level of CO₂ emissions. This has encouraged the use of cars running on less polluting fuels and reformed company taxation basing it on value of the vehicle and its emission rate, rather than on mileage, which in the past has

encouraged unnecessary driving. From April 2002, company car tax has been based on the CO₂ emissions of vehicles provided to an employee for private use.

The reduction in the maximum allowable sulphur concentration of diesel from 1000ppm in 1994 to just 50ppm 1998 (ULSD) and the introduction of Ultra Low Sulphur Petrol (ULSP) has brought about improvement in sulphur emissions from road traffic.

Stringent vehicle emissions standards and improvements in the environmental standard of fuels will provide an ongoing amount of air quality improvements. However, it is likely that improvements in emissions alone will not bring about the required reduction in pollutants to meet government objective levels. This is because of the anticipated growth in the vehicle fleet.

5.3 Encouraging an increased use of alternative fuels In South Bucks The Second Local Transport Plan 2006-2011 for Buckinghamshire- Encouraging Cleaner Fuels

The 'Powering Future Vehicles Strategy' (July 2002) reports that significant progress has been made in cutting CO₂ emissions from cars, and average CO₂ emissions for new vehicles sold in the UK has reduced significantly. The strategy promotes the development, introduction and use of low-carbon vehicles and fuels, encouraging further use of the new technology in the automotive industry. Alternative fuels that are now available include:

- Liquid Petroleum Gas (LPG)
- Bio and hybrid fuels
- Hydrogen fuel cells
- Water-emulsion diesel

The use of these fuels not only reduces CO₂ emissions, but they are also an important tool in reducing a number of National Air Quality Objective pollutants such as nitrogen dioxide.

Locally, the Carbon Trust was launched in June 2004 and a joint application for the development of 'Local Authority Carbon Management Programmes' (from the County and Wycombe District Councils) was accepted in March 2005.

In the next two years, after advice from the Carbon Trust, Bucks County Council will be refining their action plan to reduce CO₂ emissions in Buckinghamshire. It will concentrate on promoting clean fuel use and achieving modal shift to sustainable transport modes and will help us meet our air quality objective.

ACTION 1: South Bucks District Council will work closely with Bucks County Council to encourage the use of cleaner vehicle technologies.

As one of the largest employers in Buckinghamshire, the County Council plans to lead by example and investigate the potential for introducing a clean fuel vehicle fleet for its employees. District partners, transport operators and

other organisations will also be encouraged to consider similar actions, whilst businesses will be made aware of the social, economic and environmental benefits of cleaner fuels through travel planning activities. We would also be keen to support publicity campaigns (such as 'Drive cleaner, drive cheaper' - Dft, 2003) particularly if supporting materials were freely available.

5.4 The Bucks and Milton Keynes Air Quality Strategy-encouraging cleaner fuels/reducing emissions from vehicles currently on the road.

The Draft Bucks and Milton Keynes Air Quality Strategy Identifies the need to encourage the uptake of cleaner vehicle technologies. The Bucks Air Quality Management Group are undertaking the following actions to encourage the uptake of cleaner vehicles:

- Develop partnerships with businesses and major fleet operators;
- Encourage local companies to consider using cleaner fuel technologies;
- Encourage the adoption of a County wide (Council) policy of replacing existing fleet with "greener" vehicles where appropriate;
- Seek to improve the availability of cleaner fuels at service stations;
- Review Buckinghamshire for gaps in the alternative-refueling infrastructure.

As a member of the Bucks Air Quality Management Group, South Bucks District Council will adopt these actions and will play an integral role in coordinated action.

The Road Traffic (Vehicle Emissions Fixed Penalty) Regulations 2002 (England) allow local authorities with Air Quality Management Areas to apply to the Secretary of State for Transport for the power to conduct roadside vehicle emissions testing. Participating authorities can issue fixed penalties to drivers whose vehicles are found exceeding current emission limits. Currently the cost of undertaking roadside testing is large and requires additional resources from the Police. It is not therefore considered appropriate at this time for Buckinghamshire however it is a potential future action to undertake.

The above regulations also permit local authorities to take action against drivers who leave their vehicle engines running unnecessarily when parked. A fixed penalty can be issued to any driver running their engine unnecessarily and who refuses all reasonable requests to switch off.

In association with the "Safe Routes to School" project a new scheme to encourage drivers to switch off their idling engines outside schools has been introduced. Signs reminding drivers to "Cut your engines while you wait" have been erected at a number of schools in the County.

Diesel vehicles that are old or poorly maintained are prone to producing large quantities of thick heavy dark smoke. These small particles are inhaled and may contribute to respiratory problems such as asthma.

Currently, local authorities are not empowered to deal with such vehicles. However, the Government's Vehicle and Operator Services Agency (VOSA) can.

Details of any offending smoky diesel HGV or bus can be reported to the Agency (Tel. 0870 6060 440).

The Bucks Air Quality Management Group are undertaking the following actions to reduce emissions from vehicles currently on the road:

- Promoting the “vehicle emission watch” initiative with the introduction and distribution of new leaflets with freepost envelopes.
- Support a ‘Smokey vehicle’ reporting system online at BucksAirQuality.Net
- Produce leaflets on air quality and the importance of emission testing at MOT stations in the County.

5.5 Action Plan measures to encourage the use of cleaner vehicles.

The increased use of cleaner vehicles within South Bucks will depend on their availability, their initial cost, their running cost and the refuelling network. The availability of cleaner vehicles will depend on car manufacturers and distributors. It is important that a choice is available to customers and that the advantages of alternative fuelled vehicles are understood. Conventional vehicles and fuel types have improved. European and national measures have achieved massive improvements in both clean vehicle and clean fuel technologies.

Improvements through EURO 4 and increased fuel standards will continue to reduce emissions.

Vehicles using cleaner fuels produce fewer emissions and therefore can make an important contribution to improving air quality.

While there are now 1400LPG refuelling sites in the UK, only 8 of these are in Buckinghamshire. At present there are no LPG refuelling site within the South Bucks District.

South Bucks District Council is unable to have a significant effect on the uptake of cleaner vehicles by those drivers who utilise the motorway system within the District. The majority of drivers on the M4, M40 and M25 are simply passing through the District. It is therefore important for National measures to encourage the increased use of cleaner vehicle technologies and South Bucks District Council would support the continuation of a national scheme aimed at encouraging the uptake of cleaner vehicles such as the Power Shift and Cleanup programmes.

Action 2: The Council will urge the Government to continue to support schemes aimed at encouraging the development of cleaner vehicle technologies such as the Power Shift and Cleanup schemes.

To reduce emissions from road vehicles within South Bucks, it is important to encourage both fleet managers and private vehicle owners to switch to using

cleaner vehicles. This can occur by simply replacing older conventionally fuelled vehicles with newer alternatives, a normal process for vehicle users, or by replacing vehicles with alternatively fuelled vehicles, a process which would bring about greater improvements in emissions.

Action 3: The Council through the South Bucks District Council Local Development Framework (2006-2011) will encourage the development of service station facilities that provide cleaner fuel alternatives to petrol and diesel. The development of LPG facilities, other proven cleaner fuels and recharging facilities for electric powered vehicles, will be encouraged.

Action 4: The Council will review the South Bucks District for gaps in the alternative refuelling infrastructure and will encourage those service stations in areas of the District where there are no alternative refuelling facilities, to consider incorporating such facilities into their stations.

Action 5: The Council will encourage local companies to consider using cleaner fuel technologies by providing information packs on the benefits of switching to cleaner vehicles.

It is important for the Council to consider using the cleanest viable vehicle technology for its own limited fleet and request that contractors working for the Council also utilise the cleanest viable option.

Action 6: The Council will seek to use the cleanest available technologies for vehicles undertaking its functions, where this does not impact upon the level of service provided.

Reducing emissions from vehicles currently on the road

Vehicles, which are not regularly serviced, can impact upon air quality. An un-serviced vehicle can reduce economy by more than 10 percent, which can lead to increased emissions and add to air pollution. The maintenance of vehicles is not time consuming. The problem caused by poor maintenance can often be resolved by a re-tune that usually takes less than fifteen minutes. However, if the problem is one of oil being burnt, this can indicate that the engine is worn beyond repair. Regular maintenance, which includes changing the oil and air filters and tyre pressure checks, can greatly reduce emissions and can provide early detection of engine problems.

Driving style can also influence vehicle emissions. Breaking and accelerating can increase emissions, whereas smooth driving is more efficient and puts less strain on the engine and brakes. Driving at a constant moderate speed also reduces congestion, which in turn reduces emissions. Idling vehicles can cause unnecessary increases in air pollution.

A small number of vehicles utilising roads within South Bucks, produce a disproportionately large amount of emissions. The reason for this is poor maintenance and mechanical faults. Acknowledging the air pollution consequences of poor vehicle maintenance, the Government made certain powers available to seven pilot authorities under the Road Traffic (Vehicle

Emissions) (Fixed Penalty) Regulations 1997, to test vehicles and fine drivers that do not meet standards set for MOT exhaust emissions.

The use of powers to fine drivers is not intended to “catch out” individuals but is intended to promote the benefits of properly maintaining cars. It is therefore important to emphasize this in the publicity for the scheme and provide details to motorists on how to maintain their vehicles so that emissions do not fail the standards set.

The cost of undertaking Vehicle Emissions testing is relatively high and it would not be cost effective to undertake Vehicle Emissions Testing in the South Bucks District alone. A more cost-effective approach would be to undertake testing across the County so that publicity information can be made available to a larger number of vehicle owners. While it is not currently considered to be cost effective to undertake vehicle emissions testing in Buckinghamshire, the Bucks Air Quality Management Group will review whether Vehicle Emissions Testing is a viable option for the County by the end of 2007.

ACTION 7: South Bucks District Council will review, alongside the Bucks Air Quality Management Group, the cost effectiveness of Vehicle Emissions Testing within the County and will support the development of any such scheme should it be considered cost effective for South Bucks.

ACTION 8: The Council will provide Smokey vehicle reporting forms on our website and paper forms in libraries and Parish/District Council Offices. These forms can be returned to South Bucks District Council with details of a Smokey vehicle. The information will then be passed to VOSA who have regulatory powers to address Smokey vehicles

6 Air Quality and Traffic congestion

6.1 Introduction

Traffic Management.

Car ownership within South Bucks is on the increase. South Bucks' Census data from 2001 shows that, only 11% of households did not have a car and more than 50% had more than a single car (www.statistics.gov.uk/census2001). South Bucks has a higher car ownership per household than most other local authorities in England and Wales. It is predicted that there will be a continued rise in the number of households who have multiple car ownership.

Traffic

Data from the National Traffic Survey estimates that traffic flows across the whole of Buckinghamshire have grown by 0.44% between 2000 and 2003 with 6,241 million vehicle kilometres completed in 2003. Based on this trend, and discounting external factors such as the impact of housing growth across and around the county, it is anticipated that the number of vehicle kilometres could grow by 14% to 7,100 million by 2011.

The road network could probably cope with this growth if journeys were spread evenly through the day. However, traffic monitoring within Buckinghamshire suggests that as many as 40% of daytime journeys are made in the morning and evening peak periods (0700-0900 and 1600-1800). As a result traffic growth will have a disproportionate effect on the road network at the times when many areas are already at, or close to capacity.

While the pollutant emissions produced by each vehicle are reducing as vehicle technology improves, increased traffic growth has the potential to prevent air quality improvement, particularly during those periods of highest road traffic congestion.

Vehicle congestion is an important influence on kerbside pollutant concentrations. Emissions from a vehicle vary depending on a range of factors, which include speed and the flow of traffic.

Congestion on roads leads to inefficient stop-start driving. When vehicles accelerate an increased amount of fuel is consumed. This fuel, which is burnt in the engine, increases emissions during the acceleration phase. When vehicles are travelling in a pattern of breaking and accelerating, air quality deteriorates. It is important that any scheme aimed at reducing air pollution from road vehicles identifies traffic reduction as a means of reducing air pollution. However, it does not necessarily follow that traffic reduction leads to a commensurate reduction in pollution emissions. This is because traffic reduction measures mainly concentrate on private car trips, which produce a proportionately lower amount of emissions to other vehicle types. It is important that traffic reduction is combined with other pollution reduction measures and in particular improvements in vehicle emissions.

6.2 National Policies to reduce Traffic congestion

The Government has placed congestion at the heart of its transport strategy and it is one of the key areas in the shared priority for transport. Its aim is to secure freer flowing local roads, consequently providing economic benefits and improving the quality of life for everyone.

The Traffic Management Act 2004 places a duty on highway authorities to manage their networks to secure the free and efficient movement of all road users. Authorities are expected to avoid, reduce or minimise congestion or disruption by maximising the use of the existing network, ensuring that roads are used more efficiently and making best use of resources.

The Government recognises that there is no single solution to congestion and anticipates that each authority will strike a different balance between managing and /or reducing travel demand and maximising travel choices. It does, however, expect to see an increasing emphasis upon schemes that seek to influence travel behaviour, such as school, workplace and personalised travel planning (sometimes known as 'soft' measures).

Road traffic continues to grow nationally (an increase of 1.3% in 2003) and whilst congestion is not currently a concern in all areas, many towns face

potential problems unless effective action is taken. The Government expects all authorities with recognised or localised congestion problems to set targets for 2011 that are both realistic and stretching.

6.3 Reducing the impact of traffic congestion upon air quality in South Bucks-The Highways Agency

The M25, M4 and M40 Motorways

The M25, M40 and M4 motorways travel through South Bucks. These motorways are busy commuter routes and can be significantly effected by high traffic flows and road congestion. The Highways Agency are reponsible for assessing whether action needs to be taken to address congestion on these motorways. Fluent traffic flow on these sections of the motorway will reduce the emissions which impact upon motorway nitrogen dioxide emissions. However, increased speeds can also increase emissions and the relationship between vehicle speed, congestion and vehicle numbers is complicated.

Multi Modal Studies

In the past, road congestion, safety and environmental problems have been addressed by simply increasing road capacity. There is still a need on occasions to look solely at road based solutions but the purpose of the multi modal studies is to examine the role of all transport modes in the area or corridor concerned to identify the contribution that each can make to solving the problems of the corridor and meeting the objectives for sustainable development.

The multi-modal studies do not look simply at a congested or unsafe stretch of road to decide what improvements could be made, but also examine what scope there may be for expanding public transport or for traffic management measures to manage the demand on the existing infrastructure.

A strategic level assessment for air quality according to the Guidance on the Methodology for Multi-Modal Studies (GOMMMS) is generally carried out as part of any investigation into motorway congestion. This involves identifying the change in emissions of oxides of nitrogen (NOx) and particulate matter (PM10).

After reviewing the multi-modal studies, the Department for Transport makes recommendations as to which schemes should go-ahead. These recommendations are based on the Government's objectives for transport.

The Highways Agency acknowledges that signing can play an important role in influencing driving behaviour. The Council will encourage the introduction of signs along the M4, M40 and M25 motorway sections in the South Bucks District, highlighting that these areas are in a AQMA. Additionally, the Council will encourage the development of variable messaging signs within the AQMA, advising drivers if pollution levels are elevated, promoting alternative travel modes (e.g. Think! Could you have used the train today?) or advertising the Bucks Carshare Scheme.

ACTION 9: The Council will encourage the Highways Agency to investigate the use of signs within the Air Quality Management Area advising of the motorway stretches covered by the Air Quality Management Area and providing information regarding pollution levels and measures individuals could take to reduce emissions.

The M25 widening scheme Junctions 16-23

The Highways Agency are currently developing a strategy for the rapid widening of the M25 between junctions 16 to 23. Junctions 16-17 of this stretch of the motorway are within the South Bucks District Council Air Quality Management Area. The Council are currently in consultation with the Highways Agency regarding the scheme, which is planned to be completed in 2012. Alterations to the motorway within South Bucks could impact upon air quality. An Environmental Statement is due to be published in March 2006. This will address air quality issues.

74-76% of nitrogen dioxide emissions within the M25 section of the Council's Air Quality Management Area are produced by Heavy Duty Vehicles. It is therefore important for the Highways Agency to assess the impact of the proposed rapid widening scheme on HDV emissions and identify measures that can be taken to prevent increased emissions as a result of an increase in road capacity.

ACTION 10: The Council will encourage the Highways Agency to investigate the potential impacts upon Heavy Duty Vehicle emissions from the proposed rapid widening scheme between junctions 16 to 23 of the M25. The Council will encourage the Highways Agency to take action to mitigate any potential adverse impact identified and to consider measures to reduce HDV emissions.

6.4 The Second Local Transport Plan 2006-2011 for Buckinghamshire-Traffic congestion

The Further assessment of air quality undertaken in September 2005 confirmed the findings of the Council's Detailed Assessment of air quality undertaken in March 2004. National Air Quality Objectives are only predicted to be exceeded in locations in close proximity to the motorways in the District. The County Council has the responsibility for managing the road network with South Bucks District, but the management of the motorway system is the responsibility of the Highways Agency. As such, action taken by the Local Transport Plan will only have an indirect effect on those areas predicted to exceed the nitrogen dioxide annual mean National Air Quality Strategy Objective. However, by taking action to tackle congestion on other roads within South Bucks, the County Council will be able to reduce vehicle emissions from within the District, therefore reducing the background nitrogen dioxide levels across the District and improving air quality at other non-motorway roadside locations.

Tackling congestion was central to the County Council's First Local Transport Plan. Between 2001 and 2006 the County Council completed schemes designed to tackle congestion across Buckinghamshire.

The County Council has had significant success in addressing the causes of congestion. However, they realised that some parts of the strategic road network continue to experience significant levels of peak time congestion and some of our market towns can also suffer from congestion at busy times of the day. This tends to be worse in the south of the county because of the higher population density and proximity to London, Heathrow Airport and major motorways.

The County Council recognize that Buckinghamshire is a predominantly rural county, which means that the car will remain the most appropriate travel choice for many people. To achieve the County Council's vision (to provide access for all, support continued growth and economic development, and ensure people and goods can move safely and efficiently) a reality by 2031, and to address public concerns about traffic congestion, the County Council recognizes the need to build upon what has been already achieved and make tackling congestion central to their work throughout the period of the Second Local Transport Plan 2006-11.

Tackling the adverse effects of traffic – Achievements (From: Draft LTP 2)

- 94% reduction in peak-time road closures for local authority roadworks on 'traffic sensitive' streets in three years
- 64% reduction in 'overstays' at roadworks by statutory undertakers
- 9% reduction in number of car journeys on the school run in four years (approximately 13,000 trips each day)
- Multi-modal improvements on Oxford Road, Aylesbury to reduce congestion and enhance travel options on this key corridor
- 87.5% overall approval rating for package of measures in Handy Cross area, High Wycombe (Top congestion 'hot-spot' – see Table 6)
- International award for 'Go for Gold' walking incentive scheme
- Introduced Special Parking Areas for Aylesbury Vale (October 2003) and Chiltern Districts (September 2005)
- Completed Parking & Access Strategies for both Aylesbury and High Wycombe
- Agreed transport contributions for developments in Aylesbury Vale and Wycombe Districts as part of land use and transport strategies
- Improved provision made for sustainable travel at new developments within Wycombe District Local Plan, adopted in January 2004

The County Council has developed a number of Objectives for tackling congestion problems:

- **Keep Traffic Moving** by maximising the use of existing road infrastructure to increase travel capacity (see below)

- **Achieve modal shift** from the private car to more sustainable travel modes.
- **Manage demand and reduce the need to travel** (see below)
- **Increase or build new transport capacity** where appropriate (see below)

Keeping Traffic Moving

To keep traffic moving it is important to maximise the capacity and efficiency of the transport network, and consider whether different travel modes should have priority on some routes, in relation to demand for travel e.g. Public transport. The availability of road space is an important factor that impacts upon congestion. Government Guidance emphasizes the need for reallocation of road space and the focus is on reallocation to allow for increased uptake of walking, cycling and bus journeys as an alternative to the use of private vehicles. It is important however, for the reallocation of road space to be effective in each situation. Reducing road space for private cars in locations where traffic congestion is already high may lead to reduced air quality as a result of increased stop-start traffic flow. It is important to maximize travel capacity.

Prioritising use of the road network

Before the County Council could identify what action would be required to maximize travel capacity in the County they developed a classification and prioritisation system of the road network, based on its main uses in the County.

To develop the 'Strategic Network Hierarchy' the core transport uses of each part of Buckinghamshire's 3250km road network will be mapped via a comprehensive geographical mapping exercise. To date, this has considered the following major transport uses:

- **Traffic Usage Road Classification**
Primary routes, other 'principal' routes (A roads), non-principal classified routes (B & C roads), unclassified roads
- **Traffic sensitive streets**
As defined and designated by the New Roads & Street works Act
- **Public Transport Bus Services**
High frequency urban 'quality' routes, other urban services, core interurban services, other rural services
- **HGV routes**
Recommended routes, weight restricted routes, environmentally weight restricted routes
- **Cycle routes**
Strategic and/or 'quality' cycle routes, other defined cycle routes

In the future the County Council will be developing the mapping of the Strategic Network Hierarchy to include other aspects of highway usage.

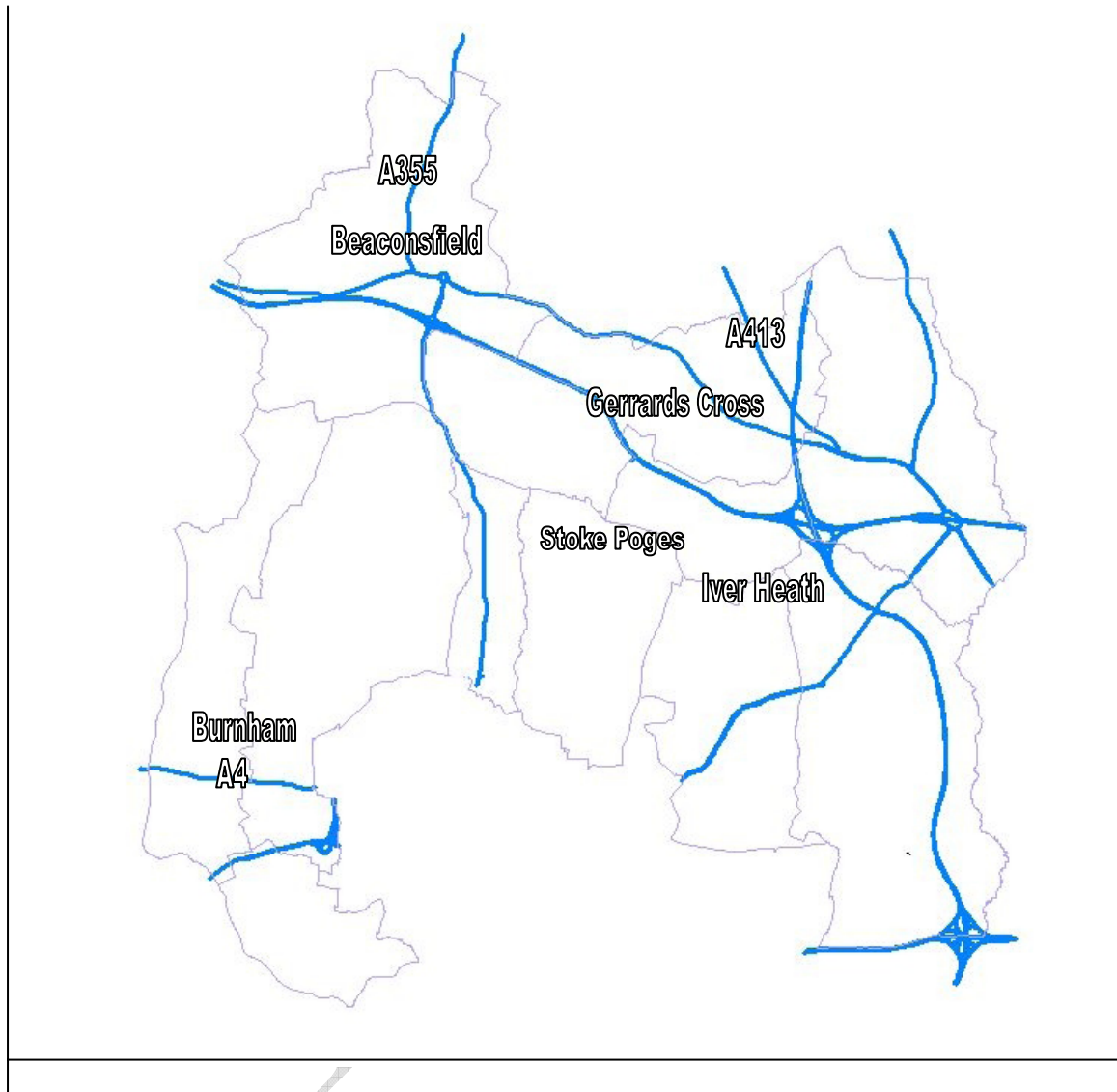
Identifying priority corridors for congestion management

From this work, a series of strategic urban and inter-urban corridors and specific congestion sensitive areas (e.g. town centres) have been identified across the network. Using market research, customer satisfaction and technical traffic data outlined above, together with knowledge of other factors likely to influence demand (e.g. future development and growth), priority corridors have been identified across the countywide strategic network.

The work on identifying priority corridors for congestion management will help in their identification of congestion and traffic management priorities for each specific route.

Draft

In conjunction with their work on the Strategic Network Hierarchy, the County Council is developing a Freight Strategy to ensure that heavy goods vehicles are signed and directed to use appropriate strategic routes. This is particularly important in rural areas where customers identify concerns about the use of inappropriate roads and 'rat running' through rural communities by such vehicles. Figure 2. Strategic Inter-urban corridors in South Bucks District Council Area



Several Priority Congestion management Corridors have been identified that pass through South Bucks District Council, as shown on the above map and these include:

- A413-Aylesbury to Denham
- A355-Amersham to Beaconsfield
- A4-Maidenhead to Slough

Prioritising actions in priority congestion management corridors

Having identified priority corridors for congestion management investment, the County Council is developing a methodology for prioritising congestion

reduction actions on those corridors, and working with South Bucks District Council and other such as the Highways Agency to agree coordinated strategies.

Actions could range from strategies for the management of roadwork's on corridors and the provision of accurate travel information, through to physical works such as junction improvements at 'bottlenecks' and investment in Intelligent Transport Systems and UTMC to maximise junction and route capacities and deliver priorities for public transport.

Parking enforcement

Parking regulation and control is one of the more powerful means of effecting traffic behaviour. It can be used both to facilitate car access to centres of activity and to manage the levels of demand for road space. The ultimate success of any parking strategy however, will depend upon how well the various components are enforced.

In recent years the County Council has worked in partnership with District Councils to introduce decriminalised parking areas, where responsibility for on street parking management and enforcement has passed to the local authority. At present there are no plans to extend this scheme to South Bucks District Council.

The introduction of resident parking controls has also effectively reduced illegal commuter and shopper parking in residential areas and improved the quality of life for local communities. To maximise the effect of parking control work, enforcement will be prioritised using the emerging Strategic Network Hierarchy, to minimise delays and manage congestion.

Improving travel information

The County Council recognise the need to improve the quality of travel information available, since it enables people to make informed choices about how, when and where they travel. Suitable and timely information about bus, rail and car routes, roadwork's, and disruptions can make a major contribution to keeping traffic moving, thereby reducing stress on the network.

Intelligent Transport Systems / UTMC

The use of Intelligent Transport Systems (ITS) and Urban Traffic Management & Control (UTMC) will enable an improved balance in the different needs of road users. Not only does it have the potential to increase the overall capacity by up to 20% but will also enable better and more timely information to be available to all road users. By including ITS technologies within programmes of work for PCMCs, where appropriate, information can be provided to the driver, the public transport user, the pedestrian or the cyclist and to the Traffic Manager. Variable message signs can reduce the time drivers spend looking for parking, text messages may avoid unnecessary delays at the rail or bus station, and emails should help sensible journey planning. Above all, up to the minute information will help in the management of incidents or disruptions on the network. ITS will also enable us to maximise travel capacity at key junctions

and on bus and HGV lanes, by providing priority for specific routes or modes, or even giving priority only to late running buses. Since ITS has a central role in keeping traffic moving, it will also contribute to air quality improvements, and could be used to monitor levels of pollution.

Broadcast travel information

The County Council already produces regular roadwork's bulletins for broadcast media. Partnerships have also been established with commercial radio stations (Swan FM, High Wycombe and Mix 96, Aylesbury) that link travel reports with our Highways on Call contact centres, who can provide confirmation of incidents and delays on the roads and advice on alternative routes. Roadside signs on the approach to urban areas advertise the service and bulletins are accompanied by messages to promote bus travel, cycling, walking and car share as alternatives to solo car use.

Bucks County Council also plans to expand and develop this service during the Second LTP to encompass other local radio stations. They also intend to develop information available via our Highways on Call website, to provide information online about car parking and road condition.

Travel advice and support

Bucks County Council already provides targeted advice and support to individuals to influence travel behaviour, through our travel planning activities. The County Council recognise, however, that during the Second LTP they need to extend personalised travel planning to others, such as young people (16 - 19), employees and people experiencing a change in lifestyle. Since 2003 'Highways on Call' has been developed, a customer contact service for all maintenance and traffic management enquiries. In the next year, the developing corporate 'Customer First' project will adopt this approach for public enquiries for a wide range of county council services. It is hoped that economies of scale will enable the creation of a 'one stop shop' for all highway and transport issues, exploiting Transport Direct technology, to provide better travel advice, online and / or telephone travel booking, and improved personalised travel planning.

Managing Demand and reducing the need to travel

Keeping traffic moving and achieving modal shift will reduce congestion and 'free up' road space. If the benefits of County Council and South Bucks District Council schemes, however, are not somehow 'locked in', over time rising car ownership and increased travel demand will absorb the spare capacity and negate the benefits achieved. It is therefore crucial that we balance the demand for road space with our ability to supply it. It is inevitable that in time there will be an increase in demand for travel that cannot be met by our ability to supply travel capacity. Before we reach this point we need to effectively manage demand for road space and, where possible, reduce the need or necessity for travel.

The Council County acknowledges that there are a number of viable ways in which we can seek to manage demand and reduce need for travel that do not

impinge too heavily on wider social and economic objectives. The Local Transport Plan therefore identifies how this will be achieved through the following:

- Managing access to the road network
- Managing access to parking

Managing access to the road network

Pricing policies

Whilst overall pricing policies on paying for road use are subject to national and not local government transport policy (being levied primarily through road fund and fuel tax levies), charging for local road use is still possible, principally through the use of local road user or congestion charging.

With regard to road user charging, the County Council recognises the success of the congestion-charging scheme in London at reducing traffic and congestion. The County Council believes that our own overall congestion strategy complements the Mayor's Transport Strategy for London, particularly with its emphasis on promoting access to railway stations and rail use into London.

Nationally, the County Council see significant potential in the concept of road user charging as an effective means of controlling access to and use of the highway network to reduce peak time traffic congestion, and the wider applicability of further individual congestion charging schemes in other conurbations and larger cities across the country. The County Council do not, however, currently consider it appropriate or cost effective for such schemes to be developed within small towns such as those within South Bucks District Council.

The County Council, however, welcomes the Government's decision to promote a public debate on the possible future introduction of a GPS based national road user-charging scheme. The County Council believes that, providing it can gain popular public support, a fiscally neutral national scheme applicable to all roads on a usage, time and location basis (as postulated by the Commission for Integrated Transport and developed by the Department for Transport's own feasibility study in 2004) has significant potential to deliver real and credible congestion reduction benefits across the country.

The County Council is disappointed that plans for a national lorry road user-charging scheme have now been abandoned but hopes that lessons learnt so far on technology, cost-effectiveness and deliverability would bring rapid decisions on a national scheme. With Heavy Duty Vehicles being the source of the majority of nitrogen dioxide emissions within South Bucks, it is important that measures are considered to reduce the impact of Heavy Duty Vehicles on our air quality.

The County Council will consider ways that the new powers introduced by the Traffic Management Act (2004) could be used to make more efficient use of road space and keep traffic moving by applying charges to statutory undertakers and other bodies working on the highway (i.e. paying for road space, or lane rental).

Prioritising the supply of road space

The supply or use of road space can be controlled in a number of ways including traffic lane allocations, road widths, controlling traffic signal priorities or changing junction priorities. The County Council will prioritise the use of road space according to the identified primary role of individual network elements using the developing Strategic Network Hierarchy (see above). Prioritising or reallocating road space for sustainable travel modes that maximise travel capacity can influence choices made by the travelling public and, therefore, demands for use of the network.

Whilst this may sound straightforward in principle, the reality is that in some areas two or more major routes may be competing for the same piece of the network. In these circumstances, the County Council has to strike a balance between competing modes to maximise the travel capacity benefits for all road users.

Reduce the need to travel

As is often quoted, transport is a derived and not a primary social need. Generally people do not use transport purely for the sake of travelling. They travel to get to jobs, facilities and services that they need to enhance their quality of life. As well as trying to control demand for road space by limiting access to it, we can also manage demand by promoting and developing policies and schemes that reduce the need for travel, whilst maintaining or expanding the accessibility of key facilities. Ways to reduce the need to travel and limit congestion include:

- Improving land use planning to place jobs, services and facilities closer to where people live to reduce the distance and need for journeys, enabling more travel to be made on foot or by bike
- Improving and, where possible (and cost effective), 'localising' the delivery of existing services to reduce the need to travel
- Supporting the development and application of home based technology (e.g. internet and/or home delivery services, home working, better access to information and services by telephone, text or e mail).

Integrating land use and economic development with transport planning is vital to ensure that the starting point for congestion activity is as amenable as possible. To improve congestion in South Bucks, it is essential that the Local Transport Plan is integrated with the Councils' Local Development Documents, and local health, education and economic strategies.

In particular it is important for major residential, employment and service development resulting from the growth is planned and implemented in ways that minimise the need for travel, and that other housing and employment developments also meet these objectives.

Working with public sector partners in Buckinghamshire Strategic Partnership, the County Council aim to influence the development of cost effective and

accessible health and education services in ways that minimise the need to travel.

The 'Getting Closer to Communities' strategy developed in partnership with District Councils, the Police and local Primary Care Trusts aims to improve local service delivery, helping people to access more publicly provided services locally (e.g. at libraries, extended school sites and High Street customer service points).

The County Council's 'Customer First' programme is also expanding the availability of public services by telephone, text message, e-mail and online. Improving access to library services, trading standards advice, licensing applications and many other public services can significantly reduce the need to travel. Flexible working practices, including working hours, and working from home promoted by the County Council can also reduce the need to travel, or at the very least help to spread the morning and evening peak, reducing traffic on the road network at the busiest times.

Managing parking

By definition, all vehicle journeys begin and end in a parking space. Therefore, as well as managing use of the road network, it is also possible to influence demand, journey patterns, times of travel and modal choice with parking policy. In recent years we have pursued a policy to develop decriminalised parking areas, taking responsibility for 'on-street' parking policy and enforcement from the Police. Working with District Councils for our three main urban areas (and responsible for off street parking provision) we have the potential to collectively influence travel choices and demand using parking policy and strategies.

Whilst the County council cannot directly influence parking policy and charging on private land, using the combined County / District Council Planning and Development Control powers, we can influence and control future private parking provision and, hence affect demand for travel.

Prioritising the supply of parking

Controlling the type, availability and location of parking can also influence travel demand. Locating public transport and sustainable transport facilities (e.g. cycle parking) closer to the main attractions than car parking in a town centre can make these modes more attractive; whilst prioritising parking spaces in car parks, such as locating car share spaces closest to the exit, can also influence modal choice.

The County Council encourages District Councils to consider innovative parking schemes to assist in the management of parking stock and to support their congestion objectives. These could include adopting smart card technology, or using cashless payment systems. We will ensure that where such schemes are introduced the public is kept updated.

During the Second LTP the County Council will develop and introduce Park & Ride schemes on the edge of major urban centres to encourage commuters and long-stay visitors to park outside of the centre, thus reducing congestion.

Increase or build new transport capacity

The County Council's strategy for tackling congestion highlights the importance and potential of effective management of the existing network to keep traffic moving and maximize travel capacity, promoting genuine and credible alternatives to the car to achieve modal shift and managing demand and reducing the need to travel. The County Council accept, however, that a truly balanced strategy that effectively delivers against economic, social and environmental objectives will still require some new transport capacity.

No new transport capacity has been planned for South Bucks District Council.

6.5 The Bucks and Milton Keynes Air Quality Strategy-reducing traffic congestion

Travel Plans

A travel plan is a package of measures designed to reduce car dependency by supporting more sustainable forms of travel and to reduce the need to travel to work and, particularly in the case of schools, improving safety.

The adoption of travel plans will be promoted by:

- Encouraging businesses to adopt new or support existing schemes.
- Providing advice, encouragement and support to local businesses in the development of travel plans.
- Continuing work on implementing travel reduction measures for Council staff by providing cycle pools¹ and storage, shower facilities, and discounts on train and bus passes.
- Encouraging flexible and home working in order to reduce the number of journeys to the work place.
- Completion of individual District *Travel Plans*.
- Continuing support for the County Council's *Safer Routes to School* (SRS) scheme. To date this has been very successful with many schools taking part, and national recognition in the form of the National Transport Award. See www.buckcc.gov.uk.
- Continuing to support *Bucks Car share* and *CARSHAREMK* - a free service aimed at arranging car sharing across the County. See www.buckscarshare.co.uk.
- Continuing to encourage the formation of *Travel Groups* involved in the marketing and promotion of sustainable public transport.



¹ Cycle pools are facilities whereby a number of bicycles are available for staff use so that work visits can be made on bike rather than by car.

Freight Quality Partnerships

National policy accords great importance to the efficient operation of the various means of carrying goods that together comprise the freight industry. The White Paper daughter document, "Sustainable Distribution: A Strategy" (March 1999) states that:

"As a trading nation, this country needs an efficient, cost effective system of goods distribution so that it can compete successfully in an international market and deliver a good standard of living at home."

South Bucks' Further Assessment of Air Quality undertaken in September 2005 included an investigation into the relative contribution of different vehicle types to nitrogen dioxide emissions within the AQMA. The assessment indicated that approximately 61-64% of total nitrogen dioxide emissions are related to Heavy Duty Vehicles (HDVs) on the M40, while on the M4 HDVs are responsible for approximately 65-70% of total nitrogen dioxide emissions and 74-76% of nitrogen dioxide emissions from the M25 are from HDVs. It is therefore important for South Bucks to focus on measures that can be taken to reduce nitrogen dioxide emissions from HDVs.

The Bucks and Milton Keynes Air Quality Strategy identifies the need to address emissions associated with HDVs and are therefore developing a Freight Quality partnership with the Freight Transport Association (FTA) to address air quality and other freight management issues.

6.6 Action Plan measures to reduce road traffic and to discourage non-essential journeys by motorised road transport

Within South Bucks District Council the majority of nitrogen dioxide emissions are associated with vehicles using the motorway network and not A or B roads within the District. The Council has limited power to address motorway congestion, as motorways are the responsibility of the Highways Agency. However, it is important for the Council to raise the profile of air quality and the designation of the Air Quality Management Area so that there is increased awareness of the problems associated with motorway travel through the District. Actions 9 & 10 address the issue of nitrogen dioxide emissions from the motorway network and emphasises the role that the Highways Agency must play in improving air quality within South Bucks.

ACTION 11: The Council will continue to liaise with the Highways Agency to identify measures that can be taken to reduce nitrogen dioxide emissions associated with congestion on the M4, M40 and M25.

The Council's Further Assessment of air quality undertaken in September 2005 investigated the sources of nitrogen dioxide within the Air Quality Management Area. The assessment identified that the majority of nitrogen dioxide was emitted from Heavy Duty Vehicles utilising the motorways. While the County Council has no powers to control HDV vehicle movement on the motorways, HDV movements within South Bucks District Council will contribute to nitrogen dioxide emissions across the District. HDVs produce a disproportionately high

amount of nitrogen dioxide and congestion associated with inappropriate HDV routes can reduce localised air quality and can contribute to elevate nitrogen dioxide levels within the AQMA. It is therefore important for the Council to work closely with the County Council to review the use of the Council's roads by HDVs to prevent unnecessary congestion associated with inappropriate HDV routes.

ACTION 12: The Council will work in partnership with Bucks County Council to review Heavy Duty Vehicle routes within the District to ensure that the routes used are not contributing to significant nitrogen dioxide emissions through unnecessary congestion and inappropriate routing.

The Bucks and Milton Keynes Air Quality Strategy identifies the importance of addressing emissions from Heavy Duty Vehicles. The strategy also recognises the benefit of the development of a Freight Quality Partnership with the Freight Transport Association (FTA). The Council supports the development of a Freight Quality Partnership and will provide an advice leaflet to all major freight operators in the District advising of how actions can be taken to improve the environmental performance of their business. The leaflet will also provide advice on improved freight movement efficiency and economics.

ACTION 13: The Council will seek to ensure that freight movement, delivery and servicing within the District is provided in an environmentally sensitive, economic and efficient manner, which accommodates commercial needs and facilities competition.

While it is only locations immediately adjacent to motorways in the District that are predicted to exceed the annual mean nitrogen dioxide National Air Quality Objective, congestion on other roads in the District can cause elevated nitrogen dioxide levels close to the objective level. It is important for the County Council to address areas of the District where localised congestion can cause elevated nitrogen dioxide levels particularly if congestion is on roads close to or within the Air Quality Management Area.

ACTION 14: The Council will work in partnership with Bucks County Council to identify areas of the District where traffic congestion causes nitrogen dioxide levels close to the annual mean nitrogen dioxide National Air Quality Objective. The Council will work with Bucks County council to identify measures that can be taken to reduce congestion in these areas.

The management of parking provision is an important tool in managing town centre congestion. Where alternative travel modes are available, parking provision should not encourage non-essential journeys by car. It is therefore important to review the Council's parking facilities on a regular basis to ensure that non-essential car travel is not encouraged.

ACTION 15: The Council will regularly review its parking provision in the context of promoting a reduction in car use.

7 Promoting alternative modes of transport to the private car

7.1 Introduction: The problem of car reliance

A recent study by RAC concluded that most car trips do not have to be made by car. Using a car currently seems the sensible choice because of factors such as physical and time constraints and the poor quality of alternatives. Some car trips (up to 30%) were judged to be hardly necessary at all, or a perfectly good alternative was already available but ignored.

Congestion is caused by a level of traffic that is in excess of road capacity. It is therefore important to reduce congestion as discussed in the previous section, as congestion, leading to a driving style with more acceleration and deceleration, creates increased air pollutant concentrations. To reduce the number of vehicles utilising South Bucks roads, it is essential to provide drivers with viable alternatives. It is important to provide attractive alternatives to car travel, such as walking, cycling, bus use and the underground to reduce traffic congestion on roads.

7.2 National policies to encourage public transport use

In 1998 the Government produced a White Paper on the future of transport (1). This document set out the Governments strategy for improving public transport and reducing dependency on the car. The paper emphasised the need for an integrated transport system, which would tackle the problems of congestion and associated air pollution concerns. The paper also highlights the need for an increased choice in travel modes by improving alternatives modes to the car and securing mobility that is sustainable in the long run.

A key area in the White Paper is the need for sustainable development in transportation. Sustainable development is "development that meets the needs of the present with out compromising the ability of future generations to meet their own needs" (The Brundt-Land Report 'Our Common Future'). The White Paper sets out a framework by which detailed policies will be taken forward:

- Integration within and between different types of transport
- Integration with the environment-so that our transport choices support a better environment
- Integration with land use planning-at national, regional and local level, so that transport and planning work together to support more sustainable travel choices and reduce the need to travel
- Integration with our policies for education, health and wealth creation-so that transport helps to make a fairer, more inclusive society

The key aims of the New deal for Transport include cleaner air to breath by tackling traffic fumes, including reducing congestion, and easier and safer routes to walk and cycle.

National policy to provide 'better buses'

"Buses to lead our transport revolution for the 21st Century" is one of the proposals in the Governments White Paper (1). The paper emphasises the need to provide buses, which are cleaner, more comfortable, and more reliable-a real and attractive alternative to using the car. The Government will encourage industry to produce buses fit for the 21st Century. The improvement in the bus service will require an increase access for all. Reliability in services will be brought about through a decrease in congestion and an increased bus fleet.

National policy to provide 'better trains'

Through a new Strategic Rail Authority, the Government intends to 'bring vision to the privatised railway' and insure that it meets the needs of passengers and the freight customers it serves. This will include providing more and better trains, providing better information and better interchanges.

National policies to provide 'better protection for the environment'

National policy detailed in the New Deal for Transport (1), is aimed at the increased use of greener, cleaner vehicles, an increased use of public transport and providing easier walking and cycling. The White Paper (1) acknowledges that these measures alone will not be sufficient to tackle the congestion and pollution that is caused by road traffic, 'we need to reduce the rate of road traffic growth, we also want to see an absolute reduction in traffic in these places and streets where its environmental damage is worse'.

7.3 Achieving modal shift in South Bucks-The Second Local Transport Plan 2006-2011 for Buckinghamshire

With traffic mileage across Buckinghamshire estimated to grow by 14% by 2011, a major objective of the County Council congestion strategy will be to achieve modal shift, promoting and encouraging the use of more sustainable modes of travel, such as buses, trains, cycling, walking and more efficient car use. This not only tackles congestion on the roads but also has the potential to improve health, the environment and address the impacts of climate change.

During the First Local Transport Plan (LTP) schemes that incorporated bus priorities, cycle lanes, better transport information and new bus services (with operators) were successfully completed. Whilst these are crucial to achieve modal shift, the County Council have long recognized that the full potential of products and services cannot be realised without effective marketing and promotion.

The County Council has learned that changes in travel behaviour are maximised when supported by 'selling' the advantages (i.e. financial, time, convenience or quality) to likely users.

As a result the County Council have placed great emphasis on 'selling' projects, establishing a Promotion and Development Group to market urban and interurban bus services, rail services, cycling and walking facilities, travel planning and other sustainable travel (such as taxis and powered two wheelers).

The work has undertaken with customers has enabled the identification of four journey types that offer the greatest potential to achieve modal shift:

- Home to work journey
- Home to school journey
- Home to town centre journey (shopping and leisure trips)
- Home to railway station journey

These journey types have been central to the County's achievements to date and will continue in the promotion of future projects. The County will use market research to identify customer needs, priorities and opportunities to develop projects and services that meet user requirements. This will allow the identification of priorities based on a project's ability to deliver against targets and, through the TRANstat performance management regime, set clear targets and objectives.

Developing clear brands for products and services is essential to attracting new users, and so 'Go for Gold', 'Bucks Car Share', Line 280, Silver Rider, red routes 9 and 33 have distinctive names, images and identities.

These ensure that the public recognise services without already being a user. To increase public awareness of services, before they are launched it is important that the images are consistent on infrastructure, information and vehicles, requiring close working with bus operators and other partners.

The County Council proposes to target promotional work at specific groups influenced by demographic and journey types, origins, and destinations, and the communication media is chosen to reflect the target market. The County Council will also seek to identify innovative ideas and beneficial commercial partnerships, such as agreements with local radio stations where our products are advertised in exchange for promotion of the stations as part of our wider work. Launch events are designed to be distinctive to attract media coverage from local TV, cinema, radio and newspapers. These activities raise the profile of the products and services available, and therefore when an individual is approached through our personalised travel planning or direct marketing work (i.e. personalised letters from Cabinet Members giving details of travel choices in their area) they recognise the product and are more receptive to change.

All of this can come to nothing if, once someone has changed behaviour, the actual experience does not match the image they were 'sold'. TRANstat enables the County Council to monitor, review and refine services in the light

of regular customer surveys, to ensure that we retain and continue to attract new customers.

Surveys of new bus users show higher levels of satisfaction than similar surveys of non-users who have yet to try the services. The County Council believes it is their market led approach to the development of sustainable transport that has been largely responsible for our success in achieving significant modal shift across Buckinghamshire. This approach will therefore remain at the heart of our congestion strategy during the Second LTP.

Bus Strategy

The County Council's Bus Strategy sets out detailed plans and policies for all bus service development across Buckinghamshire, and aims to:

- Reduce congestion by encouraging modal shift
- Promote social inclusion by improving accessibility to essential services

It specifically identifies the development of bus networks, with fast, frequent and reliable services, to the urban areas of High Wycombe, Aylesbury and Chesham & Amersham, because of their potential to achieve modal shift from car to bus. The work undertaken to improve bus services to these urban areas is the County's Urban Bus Strategy.

The Bus Strategy also sets out a clear strategy to maintain and develop a core network of interurban services to ensure that all towns and villages with a population of 2,000 have at least one public transport route serving the core network. Usually this will be a bus service, but for communities on the rail network, the train may fulfil the same function.

The core network aims to provide clock face services to all the larger population centres in the County, offering at least an hourly daytime bus service to a large number of households in the county, to one or more urban centres, either within Buckinghamshire or in adjoining areas. A reduced service may be provided in the evenings or on Sundays where there is a recognised demand for leisure travel. Interurban routes have a major role to play in improving accessibility for rural and other non-urban areas, such as market towns, and provide a core network that our emerging demand responsive rural bus services will feed. It can also help achieve modal shift, particularly for interurban work, leisure and town centre journeys, from smaller market towns and other communities.

Rail strategy

Rail patronage in Buckinghamshire has grown by 23.1% in the last five years and each day almost 6000 commuters travel to and from London by train, whilst 9000 people use the train to reach other destinations from the County's 23 railway stations.

A far greater number, however, still commute to and from London by car, and many of these might be persuaded to transfer to rail given better access to

local railway stations. Not only would this relieve congestion on routes across the County, but would also help ease pressure on the road network in London.

Similarly, many people commute within the County along routes for which rail is a competitive and high quality alternative, especially on peak time contra flow journeys.

Chiltern Railways are keen to develop this market as they currently have significant spare capacity on outbound journeys from London at peak times. Rail journeys that could make a major difference on Congestion Management Corridors include:

- Beaconsfield to High Wycombe
- Gerrards Cross to High Wycombe

The County Council will therefore work with train operators to promote and increase rail use, seeking to achieve modal shift from car to rail in two specific areas:

- Peak time commuter journeys to and from London
- Peak time local contraflow commuter journeys

The County Council recognise, however, that although these commuter journeys offer good potential for modal shift, the biggest obstacle is access to rail stations.

Access to railway stations

Almost one in five of the County's rail passengers travel to the station by car and park in one of the 2,942 available parking spaces at Buckinghamshire stations. Typically, these car parks are 94% full on weekdays, with most spaces filled up well before 9.00am. Chiltern Railways cite available parking levels as the single greatest factor restricting further business growth in Buckinghamshire.

To date, the County Council has sought to increase access to stations for pedestrians, cyclists and bus passengers to encourage more sustainable travel to and from stations. The County Council has tackled cycling levels by providing better storage facilities and targeting specific stations for proactive marketing and promotion.

The County Council recognise that, as passenger numbers continue to grow, the parking spaces released by this changing travel pattern may be taken up by others driving to the station. However, if these journeys are transferring from car only commuting trips (either to London or other local destinations), then the benefits of this approach are being 'locked in' by reducing demand on interurban roads and relieving the pressure to expand station car parking.

Developing sustainable access to railway stations

The County Council has recognized the need to continue to develop and enhance sustainable access to railway stations during the Second Local Transport Plan period. Where stations are identified as suitable for cycling, secure and sheltered cycle parking will be provided, whilst stations with target populations within walking distance will benefit from improved pedestrian facilities.

Where potential demand justifies investment, we will look to develop demand responsive or other feeder services, using Silver Rider as a model. These services can offer good value for money since a high proportion of new passengers were previously travelling by car. The County Council will be considering the feasibility of and demand for services in Gerrards Cross and Beaconsfield, in partnership with Chiltern Railways, and will prioritise these projects based on their potential to achieve modal shift and the level of available resources.

Rail service development

With the growth anticipated in and close to Buckinghamshire over the next 20 years the County Council are keen to explore the potential of further rail development to achieve modal shift and meet congestion objectives, despite the current national constraints on the development of new rail projects.

Walking and cycling

It is well known that nationally a third of all car trips are less than two miles and both walking and cycling are ideal ways to make many of these local journeys and reduce congestion. The Council County acknowledge, however, that time pressures, the weather, safety fears and local topography all present very real barriers that prevent these modes being realistic travel choices for a large proportion of the population.

Any strategy for promoting walking and cycling as an alternative to private car use therefore needs to be as realistic and targeted as possible. The promotion of walking and cycling is a central part of the County Council's approaches for both school and workplace travel planning. They both also play a key part in improving sustainable access to public transport interchanges and therefore have the potential to achieve modal shift in urban areas and on PCMCs.

Getting people to walk or cycle in preference to the car for regular journeys is more difficult to achieve, and is only likely to be possible in urban areas where services and facilities are close to home or work.

While the County Council will be focusing on the main urban areas of Amersham, Aylesbury and High Wycombe they recognize that in other areas, which suffer from peak time congestion, the development of these modes may be one of the few effective ways to reduce traffic flows.

Whilst walking and cycling can improve health, accessibility and the environment, the strategy during the Second LTP will be to focus primarily on achieving modal shift on regular journeys. The second LTP includes the following objectives:

- To invest in and promote relevant infrastructure that supports school and workplace travel planning, and improves sustainable access to public transport
- To concentrate the development of cycling networks in the three main urban areas, supporting work on the PCMCs.
- To exploit other opportunities as they arise (e.g. developments) to promote cycling and walking schemes that achieve modal shift in other smaller towns

In urban areas the County Council will identify cycling routes on, or close to, key corridors that are within five miles (or 20 minutes cycle ride) of the town centre and build a network of 'Quality Cycle Routes'. To encourage use by commuters these will be supported by extensive publicity and marketing (e.g. network maps, mail outs and merchandise).

Walking requires a different approach to cycling because there is rarely only one route that can be chosen. Suitable routes (defined as the shortest and safest path) will be plotted on a map and an average walking time calculated. The identified routes into town centres will be enhanced with quality surfacing, with particular attention paid to the needs of disabled, blind and partially sighted pedestrians. The County Council will also ensure good pedestrian access across major roads, which may involve creating or upgrading crossing facilities. Maps illustrating these routes and associated walking times (possibly supported by enhanced signing) will then be prepared and circulated to residents within the area.

Travel planning

Home to work and home to school journeys are two of our best opportunities to achieve sustained modal shift. Whilst much has been achieved in both areas, they have been developed in different ways. In the short term the County Council will continue with this approach as they seek to meet their targets, ensuring that all schools have a School Travel Plan by 2010 and that all businesses with more than 100 employees have developed workplace travel plans.

Over the course of the Second LTP the County Council will, however, change the emphasis of our work from an 'organisational' focus to an 'individual' approach. This will increasingly involve targeting and engaging with individuals or groups of individuals (personalized travel planning) to promote specific products, such as bus services, rail travel, Bucks Car Share and quality cycle corridors.

Travel to work

Whilst our workplace travel planning activities represent better value for money than school travel planning in absolute cost terms, the County Council have achieved less than other authorities surveyed. The County Council believe that this is because in Buckinghamshire individual organisations employ fewer people than other companies across the country and our largest employers targeted. Since the County Council's focus for economic development is high value, high technology, smaller scale businesses, this trend of diminishing 'rates of return' is likely to continue.

In the short term the County Council will focus on completing the development of workplace travel plans with organisations that employ over 100 people, with over 420,000 home to work journeys made each day across the county, and only 18.5% of the workforce covered by workplace travel plans, a new approach will be necessary in the future.

It is likely that a more successful approach would be personalised travel planning, since it should enable home to school and home to work activities to be integrated.

Travel to school

The approach to school travel planning has evolved significantly since the First LTP and is set out in our School Travel Strategy. The County Council has moved from an approach that concentrated mainly on 'hard' infrastructure to one that works with schools, colleges, students and parents. Led by schools and supported by initiatives, the County Council aims to develop viable, sustainable and low cost travel choices, such as walking buses (Crocodile Trails), better cycling facilities, 'Go for Gold' (linked to 'park & stride') and better public transport access.

Go for Gold

- Holmer Green First School parent suggested scheme as way to encourage walking
- Child gets a card, stamped when they walk, cycle, park & stride, car share, or use bus
- By collecting stamps they are eligible for prizes (e.g. free swim, stationery, class points)
- At Holmer Green First School car use has fallen from 62% to 24% in four years
- Other schools that have adopted scheme have seen car use fall dramatically

This approach has helped achieve modal shift in a very cost effective way, and will continue to form the basis of our approach during the Second LTP.

The County Council will continue to provide support and guidance to school champions with regular training and newsletters, sharing good practice, but also believe that personalized travel planning has an important role to play in the development of sustainable school travel. As a result the County Council hopes to set up 'Travel Shops' at secondary schools, providing personalised travel information for pupils, staff, and parents, and anticipate using a similar approach to help make the transfer between primary and secondary school as easy as possible for young people. Such an approach is expected to contribute to the objectives of 'Every Child Matters'.

Personalised travel planning

In the last two years the County Council have developed an individual approach to the delivery of highways services ('Highways on Call'), significantly increasing customer contact and the quality of service delivery, without increasing costs. They believe this approach has great potential to deliver similar results if applied to the development of demand responsive transport and personalised travel-planning services. To maximize the potential of a personalized approach, a 'step change' in provision is clearly required. In the Second LTP the County Council will work with partners to incorporate personalized travel planning and car share schemes into a 'Transport on Call' project, bringing together:

- Personalized travel planning
- Bucks Car Share
- Dial-a-ride
- Rural and urban demand responsive transport services
- Travel information
- Ticketing and concessionary travel schemes

The project aims to take full advantage of the Government's development of Transport Direct, enabling us to target key customer groups (i.e. age groups or people undergoing lifestyle changes) and journey types (i.e. home to school, home to work, town centre and station journeys) where we have the greatest opportunity to achieve further significant modal shift. This will also deliver obvious accessibility benefits (see Section A - Enhancing access).

Other modes

All modes of transport have a part to play in tackling congestion in Buckinghamshire. Whilst greater use of public transport (rail and bus), walking and cycling are central to The Local Transport Strategy, other forms of travel, such as taxis and motorcycles (powered two wheelers) can also help us achieve modal shift, and meet other transport objectives, such as accessibility and reduced air pollution.

Powered two wheelers (PTWs)

The strategy for powered two wheelers aims to reduce congestion by supporting PTW use in congested urban areas of Buckinghamshire. Motorcycles account for only 0.5% of all person trips in the country (National Travel Survey,

1998) and just over half of all motorcycle journeys are made to travel to or from work. Indeed in the morning peak 80% of motorcycle trips are commuting journeys.

The County Council acknowledges that to achieve modal shift and reduce congestion in the county, we need to encourage greater ownership and use of PTWs in the most congested urban areas, and particularly on journeys to work, the railway station and the town centre.

The County Council will therefore seek to identify opportunities to:

- Promote the benefits of motorcycling to those who are most likely to use one
- Review priorities afforded to motorcyclists
- Improve the motorcycling environment by providing wider running lanes and
- secure, available and suitable parking competitively priced in comparison to the car

The Local Transport Strategy for powered two wheelers also depends upon enhancing safety for users and therefore the County Council will not encourage powered two wheeler uses in the development of individual schemes, before all implications are fully considered.

Taxis

Taxis are another form of transport that can help achieve modal shift and reduce car journeys. Schemes that can support and encourage taxi use, and that will be considered during the Second LTP include:

- Taxi-bus
- Taxi-sharing
- Taxis as demand responsive transport
- Driver standards
- Enhanced infrastructure for taxis

There are already a number of taxi-bus initiatives in place (e.g. Cress Express and Rider on Call) and the County Council plan to develop further schemes, to improve connections at public transport interchanges, employment sites, housing developments and town centres.

The County Council also intend to introduce a taxi sharing scheme, using Bucks Car Share as a model, to complement workplace and school travel planning initiatives, specifically for new high density developments, especially in town centres.

Taxis have an important role to play in enhancing rural accessibility and can also provide access to transport interchanges, particularly stations, at times outside the conventional bus timetable. Promoting taxi use for this purpose improves public satisfaction because the whole journey experience is both fast and reliable. They can also increase confidence in the wider public transport

strategy, crucial to the achievement of modal shift, by providing a replacement service for absent connecting services.

A Taxi Quality Partnership has been established in the county that will enable South Bucks District Council to work in partnership with other District Councils and the County Council to deliver tangible improvements to taxi service delivery.

The partnership is also helping us to improve relations with the taxi industry, work to secure improvements in driver and vehicle standards and work together to provide adequate and suitable parking facilities.

7.4 Bucks and Milton Keynes Air Quality Strategy measures to encourage modal shift

Travel Plans

A travel plan is a package of measures designed to reduce car dependency by supporting more sustainable forms of travel and to reduce the need to travel to work and, particularly in the case of schools, improving safety.

The adoption of travel plans will be promoted by:

- Encouraging businesses to adopt new or support existing schemes.
- Providing advice, encouragement and support to local businesses in the development of travel plans.
- Continuing work on implementing travel reduction measures for Council staff by providing cycle pools and storage, shower facilities, and discounts on train and bus passes.
- Encouraging flexible and home working in order to reduce the number of journeys to the work place.
- Completion of individual District *Travel Plans*.
- Continuing support for the County Council's *Safer Routes to School* (SRS) scheme. To date this has been very successful with many schools taking part, and national recognition in the form of the National Transport Award.
- Continuing to support *Bucks Car share and CARSHAREMK* – a free service aimed at arranging car sharing across the County.
- Sharing database matches of people's routes which helps them make sustainable journey choices
- Continuing to encourage the formation of *Travel Groups* involved in the marketing and promotion of sustainable public transport.



Public Transport

The group will continue striving towards increased use of public transport by;

- Negotiating discounts on bus and train fares (e.g. *Travel Cards*) to Council staff who are encouraged to use public transport.
- Continuing to support *Bus Quality Partnerships* organised by the County Council, the aim of which is to negotiate improved bus service packages in line with the provisions of The Transport Act 2000.
- Promoting the uptake of cleaner fuels by offering where possible financial incentives in Private Hire and Hackney Carriage vehicle licence fees upon conversion to LPG fuel (Where Licensing Policies Allow).
- Reviewing major Transport Hubs and identify barriers to use.



Walking and Cycling



The Government is committed to seeing an increase in cycling and walking in this country. It is supporting the National Cycling Strategy target of quadrupling the number of cycle trips by the year 2012, and trebling trips by 2010. Therefore, all local highways authorities are obliged to develop cycling and walking strategies as part of their Local Transport Plans. These should identify gaps in the local infrastructure and improvements needed in cycling and footway networks.

Walking and Cycling will continue to be promoted by;

- Supporting the Southern Buckinghamshire Pilot Walking Project. A scheme attempting to influence the peoples habits in order to reduce dependence on the car for short trips, and encourage walking as a healthy alternative.
- Working closely with County Councils who are responsible for implementing the cycling strategy by expanding the cycling route network. A significant number of new cycling tracks have already been installed around the County.
- Working closely with “Sustrans” – the national cycling charity in bringing forward initiatives at the local level.
- Giving cycling routes due consideration during the planning phase for road and major development areas.
- Providing details of routes maps and tips on where to cycle.

For more information on walking and cycling
Visit www.buckscc.gov.uk

7.5 Action Plan measures to encourage modal shift.

South Bucks District Council has no responsibility for the public transport infrastructure. Action to encourage modal shift are detailed in the County Council's Draft Local transport Plan 2006-2011. The Council supports these actions and encourages the dissemination of further information about alternative travel modes. The Council will provide information about bus, trains, cycle and walking routes within the South Bucks District on our website. Direct links will be made with the travel & transport section of Bucks County Council's website.

ACTION 16: The Council will provide information about public transport routes within South Bucks and surrounding areas on the Council's website. Links to sources of information about public transport will also be available on the website.

ACTION 17: The Council will distribute leaflets providing information about public transport routes within the District and surrounding areas to businesses within the District with advice about formulating work place travel plans.

The Council recognises the importance of work place travel plans and will formulate a travel plan for the Council Offices.

ACTION 18: The Council will develop a Travel Plan for the Council offices in Oxford Road.

The Council acknowledges the need to provide incentives for the uptake of cleaner vehicles where possible.

ACTION 19: The Council will offer a reduction of 25% in Private Hire and Hackney Carriage vehicle licence fees upon conversion to LPG fuel.

8 Air Quality and Land Use Planning

8.1 Introduction

Development can have a significant impact on air quality. Development can adversely impact upon air quality, through direct impacts such as dust emissions during construction and demolition or via secondary impacts such as developments, which encourage an increased use of car travel.

Population in the South East of England (excluding London) increased from 7,497,730 in 1991 (Census 1991-National Statistics) to 8,000,645 in 2001 (Census 2001-National Statistics). This represents a 6.3% population increase in 10 years, a population increase of 502,915. During the same period, population growth in South Buckinghamshire was 1.5% with population increasing from 61,017 in 1991 (Census 1991-National Statistics) to 61,945 in 2001 (Census 2001-National Statistics). The most recent population estimate for South Bucks is 62,700 (Registrar general 2004 population Estimate).

The South East Plan will provide the regional and sub regional basis for future development in the District. In planning for such development the Council will seek to ensure that development is undertaken in a sustainable manner.

Sustainable development can have a positive impact upon air quality, for example, by reducing the need to travel, by locating development in locations, which are served by public transport, and by incorporating good construction and demolition practices.

8.2 National Policies to prevent development impacting upon air quality

Planning Policy Guidance Notes (PPGs) and now Planning Policy Statements, that are produced by the DTLR, now DEFRA, provide advice on the practical implementation of sustainable development strategies. Underpinning these PPGs is the Strategy for Sustainable Development for the UK: A Better Quality of Life (1999), which includes effective protection of the environment as a key aim.

PPG1: General Policy and Principles (1997) sets out the agenda for the planning system. The Government's approach is identified under three main themes:

1) Sustainable Development aims to deliver economic development, which will secure higher living standards while protecting and enhancing the environment. PPG1 reiterates the importance of the UK Strategy for Sustainable Development, first produced in 1994 and now superseded by the 1999 Strategy. Objectives for creating a more sustainable pattern of development are highlighted, including:

- i) concentrating development for uses which generate a large number of trips in places well served by public transport, especially town centres, rather than in out-of-centre locations; and

- ii) preferring the development of land within urban areas, particularly on previously developed sites, providing that this creates or maintains a good living environment, before considering the development of green-field sites.

2) Mixed-use developments are seen as a means of creating greater vitality and diversity and reducing the need to travel. They are seen as being more sustainable than development consisting of a single use, and development plans should include policies to promote new mixed-use and retain existing ones, particularly in town centres and in areas highly accessible by means of transport other than the private car.

3) Good Design is seen as the aim of everyone engaged in the development process and can help promote sustainable development, improve the quality of the existing environment, attract business and investment and reinforce civic pride and a sense of place. Importantly, good design is seen as one way of securing public acceptance of necessary new development.

PPG13: Transport (2001) sets down objectives to integrate planning and transport at all levels in order to promote more sustainable transport, and reduce the need to travel, especially by car. This will entail focusing major generators of travel demand in town centres and near points of high public transport accessibility, such as major public transport interchanges, and encouraging local facilities where they can easily be reached by foot or cycle, particularly local centres. Higher densities of development, particularly housing, at points of high public transport accessibility should be encouraged wherever possible. This will assist the Government's strategy on sustainable development, including promoting social inclusion, and revitalising towns and cities as places to live and work. Development plan policies should ensure close linkages with the local transport plan, whilst a range of more detailed advice aims to secure location of new development in order to reduce travel by car. Priority for people over traffic in town centres and other locations is also encouraged.

Conditions can be attached to planning permission to secure: facilities for cyclists, pedestrians and public transport users; the management of parking spaces; and the provision and implementation of a travel plan. The latter should set out the measures the occupier of a development will carry out to reduce the numbers travelling to the development by car. Planning obligations can be used to achieve improvements to public transport, cycling and walking facilities that would influence the means of travel to the site.

- priority should be given to people over traffic in town centres, other areas with a mixture of land uses and local neighbourhoods. More road space should be given to pedestrians, cyclists and public transport in these locations.
- A continuing shift away from investment in new roads towards investment in the public transport, cycle and pedestrian networks.

- A fundamental shift in parking management policy, involving much lower, maximum parking standards.
- The needs of disabled people should be taken into account in all new schemes and developments, and in the implementation of policies.

PPG3: Housing (2000) set out the Government's housing objectives, including the need to create more sustainable patterns of development, the need to secure the most efficient and effective use of land, seeking to reduce car dependence, and the promotion of good design in new housing developments.

PPS 23: Planning and Pollution Control is the main policy document that deals with pollution control. It considers specific policies and how they should be incorporated into strategies and planning decisions. It provides a key reference source for planners to consider air quality.

This Statement advises that:

- any consideration of the quality of land, air or water and potential impacts arising from development, possibly leading to impacts on health, is capable of being a material planning consideration, in so far as it arises or may arise from or may affect any land use;
- the planning system plays a key role in determining the location of development which may give rise to pollution, either directly or indirectly, and in ensuring that other uses and developments are not, as far as possible, affected by major existing or potential sources of pollution;
- the controls under the planning and pollution control regimes should complement rather than duplicate each other;
- where pollution issues are likely to arise, intending developers should hold informal pre-application discussions with the LPA, the relevant pollution control authority and/or the environmental health departments of local authorities (LAs), and other authorities and stakeholders with a legitimate interest; and
- where it will save time and money, consideration should be given to submitting applications for planning permission and pollution control permits in parallel and co-ordinating their consideration by the relevant authorities.

The Planning Policy Statement is accompanied with two annexes. Annex 1 relates to Pollution Control, Air and Water Quality and Annex 2 relates to the Development of Land Affected by Contamination. It is important for the Local Development framework to incorporate measures to implement the policy detailed in these documents and, in particular, for this Action Plan, it is important for Annex 1 to play an important role in development control.

Annex 1, details the need for Local Authorities to give more weight to air quality considerations, for example, where a development would have a significant impact on air quality inside, or adjacent to, an AQMA. The Annex does however recognise that air quality considerations can also be important even where existing levels of air pollution are not sufficient to justify AQMA designation. This is particularly important for those areas where an Air Quality

Management Area has not been designated but air quality is close to a National Air Quality Objective.

8.3 The South Bucks District Council Local Development Framework

The South Bucks District Local Plan, adopted in March 1999, will be progressively replaced by a number of Development Plan Documents as set out in the Local Development Scheme. The Development Plan Documents must incorporate measures aimed to reducing air pollutant emissions that may result as a consequence of development. Air quality may be effected directly by development, if the development is for an industrial process with emissions regulated by the Pollution Prevention and Control Act 1999, or indirectly, such as large developments which create increased traffic flow.

The South Bucks District Local Plan (adopted March 1999) is automatically saved for 3 years from commencement of the Planning and Compulsory Purchase Act until 28th September 2007. However, it will be essential that an appropriate policy base remains in place pending the adoption of new Development Plan Documents as set out in the Local Development Scheme. Accordingly, it is proposed to save many policies in the Local Plan until such time as they are replaced by policies in new Development Plan Documents.

The following policies relating to air quality have been identified as saved for three years, although some will be merged with other policies or replaced with policies that cover the same policy area.

Environmental Protection and Improvement

AIR POLLUTION

Development which would, or which would have the potential to, result in significant pollution of the air, either by itself or cumulatively together with other generators of pollution, will not be permitted.

Conversely, the Council will not normally grant permission for development in a location where it would be likely to be significantly affected by air pollution.

Explanation

The Council is concerned to ensure that development would not by reason of air pollution, have an adverse effect upon the character and amenities of the District. The District has very little development, which in itself is a serious polluter of the air. The greatest form of air pollution in South Bucks is pollution arising from motor vehicles, particularly given that the District is crossed by three motorways. The Council has used this policy to restrict new developments, which would be likely to result in significant pollution affecting the character and amenity of South Bucks. While this Policy is to be retained, additional more specific policies will be required in the Local Framework

Development to provide specific policy information where air quality is a specific concern and should be given more weight.

ENERGY CONSERVATION

Permission will not normally be granted for major development proposals in locations where the proposals would be likely to generate a substantial demand for the use of the motor car unless the criteria in policy TR1 (Encouraging the Use of Public Transport) are met.

Permission will not normally be granted for major development proposals where their design and layout would be inefficient in conserving energy.

Explanation

Energy conservation can be achieved in two ways. It can be achieved by reducing the demand for energy, and also by using it more efficiently. Both the overall demand for energy and the efficiency with which it is used can be influenced by the location of the development and by the careful design, layout and orientation of buildings. It is therefore important that new development maximises its energy conservation potential to ensure the greatest protection of the environment.

In its role as a planning authority, however, the Council cannot and will not seek to duplicate the Building Regulations controls. These Regulations will provide controls to ensure that new buildings meet certain energy conservation standards. Nonetheless, both RPG9 "Regional Planning Guidance for the South East" and the Structure Plan indicate that development should maximise energy efficiency. Accordingly the Council will use this policy to ensure that the broad design and layout of major developments are energy efficient. In this context the Council will wish, for example to ensure that tree shelter belts would be retained, that development would not be sited on exposed hillsides and that as far as possible the orientation of buildings would be such as to be able to take advantage of solar gain. However, there may be some instances where energy efficient measures would be unacceptable because they would conflict with other policies within this Plan, and in particular those policies relating to design. Solar collectors or panels may not, for example, be appropriate on listed buildings or within Conservation Areas. However, in many other cases, these technologies can be important for reducing emissions of carbon dioxide, a pollutant link to global warming and nitrogen dioxide the pollutant of concern for local air quality in South Bucks.

One of the objectives of Regional Planning Guidance (RPG9) is to facilitate accessibility, to reduce the growth in reliance on private vehicles and to increase the proportion of travel using modes less likely to have an adverse environmental effect and in particular public transport. Major developments can generate large numbers of private vehicle movements and they will therefore be assessed against Policy TR1 to ensure that a greater emphasis is placed on the use of public rather than private transport. Additional policies will be required in the Local Framework Directive (Development Framework) to address traffic generating developments with particular attention being made

to developments in or along roads which provide access to, areas covered by the Air Quality management Area in South Bucks.

RENEWABLE ENERGY DEVELOPMENTS

Proposals for harnessing of the energy potential of landfill gas at a large landfill site will only be permitted where: -

- (a) any building, structure or other form of development would be of small-scale, unobtrusive in the landscape and strictly essential to the operation; and
- (b) the proposal would comply with all the other policies in this Plan.

Permission will only be granted for forms of renewable energy development in the Green Belt where they are demonstrably appropriate to a rural area and would not harm its rural amenities.

Explanation

Regional electricity companies are required by the non-fossil fuel obligation contained within the Electricity Act 1989 to obtain a certain proportion of their electricity from sources which do not involve fossil fuels such as coal, gas and oil. Solar energy, wind and tidal power, hydro-electricity and waste incineration are perhaps the best-known examples of such sources.

Many of the mineral sites in the District are restored by landfill. Landfill with industrial, commercial or domestic waste will, through the process of anaerobic digestion, result in the production of landfill gas. This can be collected and burnt to generate electricity, which can then be fed into the National Grid. There is one such facility in the District, located at the large Wapseys Wood landfill site in Gerrards Cross. It may prove possible in the future to harness the landfill gas resource from other large landfill sites. Whilst such sites are all necessarily located in the Green Belt the Council considers that subject to the criteria listed in the policy such proposals should be encouraged. Not only would such developments conserve valuable and finite fossil fuels but they would also help control the accumulation of landfill gas by acting as a safety valve, thereby reducing the dangers arising from landfill gas build-up.

Renewable energy schemes are becoming more advanced in design. In many cases small-scale renewable energy schemes can be incorporated into new or existing developments with limited impact upon the local amenity. The Local Development Framework for South Bucks should include policies to encourage the development of small-scale renewable schemes where such schemes do not impact upon the local amenity.

Conservation

CONSERVATION

The District Council will: -

- (a) promote and support appropriate schemes which seek to preserve or enhance the character and appearance of Conservation Areas by reducing the impact of traffic on them; and
- (b) press the Highway Authority to ensure that, within the requirements of highway law, highway signs and other highway equipment is kept to the minimum necessary, carefully sited and of a design appropriate to a Conservation Area; and
- (c) expect any new parking provision within Conservation Areas to be sensitively located and designed, and to incorporate appropriate hard and soft landscaping; and
- (d) seek improvement to existing parking provision through revised layouts and landscaping; and
- (e) resist the conversion of front garden areas to car parking.

Explanation

Traffic can have a considerable impact on the character and appearance of a Conservation Area, both from the movement of through traffic and from the parking of vehicles. The Council can, through the planning process, exert a degree of control over proposals on private land involving additional traffic generation and parking provision.

While this policy relates mainly to impacts upon the character and nature of conservation areas, the policy also allows the control of vehicle movements along inappropriate roads and hence, reduces the impact of traffic emissions in areas which are particular sensitive to air pollutants.

Shopping

OUT-OF-CENTRE SHOPPING DEVELOPMENT

Out-of-centre shopping developments will only be permitted where:

- (a) it can be adequately demonstrated to the satisfaction of the Council that the proposed development would not, either individually or cumulatively with other such developments, have a detrimental impact on the vitality or viability of any nearby District Shopping Centre or Local Shopping Centre, or any nearby neighbourhood shopping area, or on the rural economy; and
- (b) it can be shown that there are no suitable town centre sites or edge-of-centre sites; or the proposal is for very small scale retail development, including extensions, to provide for local shopping needs; and
- (c) the proposal would not adversely affect the character or amenities of nearby properties or the locality in general; and
- (d) the proposed development would be well-related both to existing retail development and to the resident population, thereby minimising the need for travel; and
- (e) the site is, or would be, readily served by public transport; and
- (f) adequate servicing facilities are provided; and
- (g)** the proposal would comply with all the other policies in this Plan.

Explanation

It is important for the Local Development Framework to incorporate measures that do not encourage travel by the private car. Developments which provide for new shopping facilities should be encouraged in areas where there is already the infrastructure to support access via alternative modes of transport such as buses, trains, cycle lanes, walking routes and taxi. Mixed developments, which provide residential development with shopping facilities should be encouraged where, appropriate to reduce unnecessary car travel.

Out of town shopping facilities should only be considered in areas where the infrastructure is available to encourage access via alternative modes of travel to the private car.

Transport

ENCOURAGING THE USE OF PUBLIC TRANSPORT

Proposals which would be likely to generate a substantial demand for use of the car will not be granted permission unless the proposed development would be likely to encourage, as an alternative to the car, the substantial use of public transport or other communal forms of transport for journeys to and from that development. In particular, proposals must: -

- (a) be located where they would be well served by public transport; and
- (b) be designed and laid out to encourage the use of public transport and to encourage local journeys to be made on foot or by cycle.
- (c) The Council will also look to other developments to encourage the use of public or communal transport where possible.

Explanation

New developments will inevitably have an impact on the demand for travel, which in turn has an impact upon sustainability. Some trips will be entirely new ones generated by the development of a new facility, which was not previously available, whilst others will be trips, which were previously undertaken to a different destination. Irrespective of whether the trips likely to be generated by a development are entirely new ones, it is sensible to try to reduce the demand for and impact of car trips. Where development would be likely to encourage the substantial use of the car the local planning authority will look to those developments to encourage the substantial use of public transport or other forms of communal transport in order to reduce the number of car trips. Communal transport initiatives might include, for example, a specific dedicated private bus service provided by a major retailer which transports customers to its store. The District Council will actively encourage large-scale employers to consider new initiatives such as communal transport provided for staff and car sharing schemes in order to reduce the number of car trips.

One way the number of car trips can also be reduced is where the planned development would be located within easy reach of local housing, not only by public transport but also by cycle or on foot. If there is a safe and convenient route along which to cycle or walk then the need for the car to undertake very local trips may be eliminated. Development will therefore be assessed against policies TR2 and TR3, particularly in respect of its proximity to local housing. Although a reduction in the number of car trips should be encouraged, it is likely to be inappropriate for a development which would generate a substantial demand for the use of the motor car to actually be located within a housing area, but it should be easily accessible from such a housing area.

It is particularly important that new developments which would be likely to generate a substantial demand for motor car travel are located where they would take advantage of existing or new public transport infrastructure.

Accordingly development which would be likely to generate a substantial demand for use of the car will normally be expected to locate in town centres or on existing or planned bus routes or in close proximity to a railway station. Generally, proposals which would require less than 50 parking spaces under the parking standards in Appendix 6 will not be treated as involving a substantial demand. Whether a proposal is likely or not to generate a substantial demand for use of the car is not determined only by the number of parking spaces needed but also in some cases by the likely turnover in the use of those spaces.

The Council accepts that it may not be possible to implement this policy where the proposal is for the redevelopment of an existing site not located in close proximity to public transport. There may be some sites which have considerable existing floor space and are otherwise suitable for redevelopment but for the fact that they are not in close proximity to existing public transport infrastructure. The Council will not seek to frustrate such redevelopment provided that the redevelopment proposals would not be likely to result in a greater demand for the car than the existing use of the site. The policy will be applied in all cases where proposals would be likely to generate a substantial demand for use of the motorcar, but where the previous use of the site did not generate such a demand.

Development which would be likely to generate a less than substantial demand for the motor car will also be encouraged to locate where it can facilitate the use of public transport. All applications for development involving traffic generation will be assessed to consider the extent to which they would encourage the transfer from the motorcar to other modes of transport such as public or communal transport, cycling or walking.

It is not sufficient for development to merely be located where it is well served by public transport. The design and layout of that development must be such that it positively encourages the use of public transport. For example, a major retail development is not likely to encourage the use of local buses if the bus stop is too far away from the shop for people to be able to carry their purchases. It may be necessary for a proposal to include off site highway works whereby a bus lay-by or shelter is provided outside the development. In other cases it might be appropriate for the layout of circulation space within a site to allow for the possibility of buses to enter the site and serve the proposal directly. Developments should ensure that access to the public transport infrastructure is very convenient and safe.

CYCLING FACILITIES

The District Council will work with the Local Highway Authority to secure suitable, safe, secure and convenient provision for cycling. In particular: -

- a) proposals which would be likely to generate a substantial demand for the use of the car will only be permitted where the proposal incorporates appropriate provision for cycle parking. Wherever possible, other proposals should also incorporate appropriate provision for cycle parking; and
- b) the District Council will make appropriate provision for cycle parking at its own establishments, and will encourage the County Council to do so at its establishments and where possible in town and village centres and in other shopping areas; and
- c) permission will not be granted for proposals which would have an adverse effect on the safety or convenience of cycling; and
- d) the District Council will work with the local highway authority to identify locations where improvements are needed to improve the safety and convenience of cycling.

Explanation

The District Council wishes to encourage cycling as a form of transport as much as possible. Because of the rural nature of much of the District there are of course limitations to the extent to which this can be achieved. Nevertheless the infrastructure for cycling needs to be improved in order to give people the encouragement to cycle. A considerable amount of travel is localised and improving facilities for cyclists is an important way of making local facilities such as shops, and schools more accessible to local housing, thus encouraging cycling and reducing the dependence on cars.

Developments likely to generate a substantial demand for the use of the motorcar do not only draw their custom from more distant locations, but also from localities nearby. Indeed, it is part of the strategy of this Plan that development should be of a type, which would meet local needs, and so those people with localised journeys should be encouraged to cycle. Provision should be made for staff working at the proposed development and visitors to it.

Developments generating a substantial demand for the motorcar will, by their very nature, almost always be proposed on larger sites where it would be possible to incorporate cycle parking facilities. This opportunity must be taken and the Council will expect proposals to make adequate provision of safe, convenient and secure cycle parking facilities. The level of cycle parking required by this policy will vary according to the development proposed and therefore will be determined when assessing each application. The provision of cycle parking should not be an afterthought; it should be designed and located where it is likely to be used. Ideally, cycle parking facilities should be located

close to the pedestrian access into a building, in an overlooked and well-lit area, and have a convenient and safe access onto the public highway. The location and design of cycle parking facilities should enable cyclists to secure their cycles from theft.

There are of course many other developments, which would generate a less than substantial demand for use of the motorcar. The Council would wish to encourage these developments to make provision for cyclists where it is physically possible to do so.

The District Council accepts that it has responsibilities not only as the local planning authority, but also as a landowner. Where the Council runs establishments in the District that could be accessed by cyclists, the Council will look to make appropriate provision for the parking of cycles. The County Council also has a number of establishments in the District including educational premises, libraries, and recreational facilities such as Black Park. The District Council will encourage the County Council to similarly make appropriate provision for cycle parking at its establishments. When undertaking environmental improvement schemes in shopping areas the District Council will look to incorporate cycle parking facilities, including on private forecourts used by the public, and will also encourage the highway authority to do so on highway land in the town and village centres and in other shopping areas. Other public and private organisations should also be encouraged to make provision for cyclists at railway stations.

The provision of cycle parking facilities alone is not enough. If cycling is to be positively encouraged then the route between origin and destination also needs to be safe and convenient. The heavy volume of vehicular traffic discourages cycling on some roads, whilst on others the high speed of vehicles may be a deterrent. The District Council will work with the highway authority to identify roads and areas where traffic conditions are discouraging cycling. Some such locations may be evident from accident statistics, whilst others may not due to their inherent dangerous traffic conditions having largely discouraged cycling. It will then be for the highway authority to implement and fund the improvements needed to encourage cycling. These improvements might include, for example, the demarcation of cycle routes clearly marked within highway land, signing, sharing of pedestrian routes or facilities to cross roads carrying heavy traffic flows.

The local highway authority has a programme of works to be undertaken on highway land, and in designing such works it should have regard to the needs of cyclists so as to provide a safe and convenient cycling environment. This should include adequate maintenance of the highway so as to avoid significant changes in the level of the road surface close to the edge of the road.

The Council will have regard to the safety and convenience of cyclists in considering proposals which incorporate cycle parking facilities, and in considering other proposals which might affect cycling by virtue of, for example, a new access onto a highway, off-site highway works or traffic generation. It is important that access from a site onto the highway is safe and convenient for cyclists. Where a proposal also necessitates off site highway

works, the needs of cyclists will be taken into account in the design and layout of those works. Whilst the District Council is responsible for most development control decisions, it is not the highway authority. Nevertheless, the Council seeks the advice of the local highway authority on most proposals with highway implications. Accordingly the implementation of this policy will in many cases be reliant upon the highway authority having due regard to the policy in formulating its view on proposals.

PEDESTRIAN FACILITIES

The District Council will work with the local highway authority to secure suitable, safe, convenient and attractive provision for pedestrians. In particular: -

- a) permission will not be granted for proposals, which do not make appropriate provision for pedestrians or which would have an adverse effect on the safety, convenience and attractiveness of footways and footpaths (including public footpaths and bridleways). Particular attention is drawn to Policy EP6 (Designing to Reduce Crime); and
- b) the District Council will work with the Local Highway Authority to see the provision of improved facilities for pedestrians particularly in town and village centres, and in other shopping areas.

Explanation In today's society there is often a tendency for people to use the car when the same journey could be undertaken on foot. If the impact of the car is to be reduced then people need to be encouraged to walk whenever this is possible. It is of course important that a range of facilities is available locally, and that these are easily accessible on foot from local housing in order that people should have the opportunity of being able to walk to them. Indeed this Plan recognises that different uses can, depending upon their nature, coexist happily side-by-side. Where this is so, and subject to their being no conflict with the other policies of the Plan, the District Council would welcome the integration of different uses in a locality if it were to reduce the demand for vehicular movement by enabling and encouraging journeys to be undertaken on foot instead. For example, a corner shop in a residential area may not cause particular conflict with the other policies of this Plan and yet it may encourage people to purchase food locally, making their journey on foot rather than by car.

Many development proposals generate pedestrian movement and where this is the case the needs of pedestrians will be taken into account. Proposals, which generate pedestrian activity, can vary considerably as to the amount of pedestrian movement likely to be involved. The requirement to have regard to the needs of pedestrians is not limited to schemes over a particular size, although minor developments may offer less opportunity to make new provision for pedestrian access and movement. Nevertheless, even the most minor of applications must ensure that access for pedestrians is suitable, safe and convenient. With some minor developments, such as proposals for changes of use, it will not be necessary to incorporate specific new proposals for pedestrian access provided that the existing access is safe and convenient. On

the other hand larger developments are not only likely to involve greater numbers of pedestrian movements but are often more capable, with good design, of incorporating improved pedestrian facilities.

Meeting the needs of pedestrians for a safe, convenient and attractive environment might involve, for example, on a large retail development, the provision of a separate pedestrian link between the shop and the public highway, this link reflecting likely pedestrian desire lines, and also being well lit. It is important to ensure that the design and layout of schemes not only provides safety for pedestrians, but that it does so in such a way that pedestrians are likely to feel safe. In the same way that off-site highway works are sometimes required to meet the needs of the motorist, some proposals might require off site highway works to meet the needs of pedestrians, and in such cases the developer will be expected to enter into a legal agreement. For example, in the case of a major retail store, which is close enough to residential areas to attract significant pedestrian usage, it might be necessary, in the interests of public safety, to provide pedestrian crossing facilities to enable pedestrian shoppers to cross an intervening heavily trafficked road. As well as being safe and convenient it is also important to ensure that pedestrian facilities are attractive. Unattractive pedestrian routes run the risk of not being used.

Even where proposals are not likely to generate pedestrian movements themselves, the Council will wish to ensure that such proposals do not adversely affect the safety, convenience or attractiveness of existing pedestrian routes. It would be inappropriate, for example, to grant permission for a new vehicular access to a highway if this would result in a diminution of safety for pedestrians using an adjacent footpath. Proposals will not be acceptable which result in a loss of convenience or safety to pedestrians. Similarly the needs of pedestrians will be taken into account where it is proposed to divert a footpath. These guidelines will also be used by the District Council in formulating its response to consultations from the highway authority regarding proposals for the closure and diversion of footpaths.

The highway authority has a programme of works of improvements to the highway, and in designing these works regard should be had to the needs of pedestrians to ensure a safe, convenient and attractive pedestrian environment.

It is important that the network of footways and footpaths is such as to encourage pedestrian movement. Provision is sometimes made as part of a new development. It is also possible for the highway authority to bring forward proposals for improvement and extension of the footway/footpath network, and such improvements will normally be supported by the District Council where they would encourage walking.

The town and village centres are the most heavily used pedestrian areas in the District. The District Council has a programme of environmental improvements in town and village centres and in other shopping areas and will normally, as an integral part of those schemes, seek to bring about improvements for pedestrians on both public footways and also on private forecourts to which the

public have access. In designing and implementing such schemes the District Council will work with the highway authority and will seek highway authority funding for those elements of schemes on highway land where an improvement in footway surfacing is needed or where a revised layout is required in order to improve pedestrian safety to an acceptable level. The District Council will also encourage the highway authority to bring forward improvements to pedestrian facilities in those parts of town and village centres and in other shopping areas where there are no current proposals for wider ranging environmental improvements. The improvement of pedestrian facilities can vary widely in nature from the removal of safety hazards and unsightly street furniture, to the extension and upgrading of footways, and to the provision of new facilities such as seating and lighting.

ACCESSES, HIGHWAY WORKS AND TRAFFIC GENERATION

In considering proposals involving a new or altered access onto the highway, works on the highway, the creation of a new highway or the generation of additional traffic the District Council will have regard to their effect on safety, congestion and the environment. Development will only be permitted where:

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- (a) the proposal complies with the standards of the relevant Highway Authority; and
- (b) the operational capacity of the highway would not be exceeded, or where the proposal would not exacerbate the situation on a highway where the operational capacity had already been exceeded; and
- (c) traffic movements, or the provision of transport infrastructure, would not have an adverse effect on the amenities of nearby properties on the use, quality or character of the locality in general, including rural lanes.

Where off-site improvements to the highway are required to serve a development, the District Council will not grant permission unless the applicant enters into a planning obligation to secure the implementation of those works.

Proposals involving either the construction of a new site access, or a material increase in the use of an existing site access, directly onto the strategic highway network will not be acceptable if they would be likely to result in the encouragement of the use of the network for short local trips or compromise the safe movement and free flow of traffic on the network or the safe use of the road by others.

Explanation

Where development involves the alteration or creation of an access or the generation of additional traffic it is important to ensure that such proposals will not interfere with the free flow of traffic on the highway and that there would be no risk to the safety of people using that road including vulnerable groups such as pedestrians and motorcyclists. Accordingly, where proposals involve that part of the highway network for which the local highway authority

is responsible, the District Council will require applications to conform to current design standards set out by the Department of the Environment, Transport and the Regions in its relevant documents, the highway authority and best practice. Where proposals are likely to generate a significant amount of traffic developers will be required to submit a traffic impact assessment.

It is not only the location of an access onto the immediate road network that needs to be considered. The proximity of other accesses nearby is important, as is the effect that the generation of additional vehicles onto the road network will have. It is important that highways should be able to operate properly and to fulfil their intended functions. It is of course particularly important that roads do not become overloaded whereby they are unable to operate properly. The operational capacity of a road can be determined by a number of factors including its width, alignment and gradient. However in the case of the Strategic Highway Network the existence of site accesses and other road junctions can significantly limit the operational capacity. For example, where an existing road already carries a significant amount of traffic, a proposal involving either the generation of a large volume of traffic or the construction of a new site access onto that road may result in increased turning movements which would cause congestion on that road whereby it became overloaded and was not able to operate properly. Where an existing road already exceeds its operational capacity, a new site access or additional traffic is likely to make this worse and will not normally be permitted.

There can be an effect on the environment resulting from the creation of a new or improved access, or where the local road network is improved as a result of a proposed development. Trees, hedgerows or wildlife habitats can be lost to provide sufficient visibility or road width; footpaths provided alongside a rural road thus giving it a more urban or suburban appearance; and rural roads provided with uncharacteristic kerbing. Other proposals may involve a material increase in, for example, noise disturbance, pollution, or visual intrusion arising from an increase in the volume of traffic on rural roads, or from a significant change in the type of traffic (e.g. an increase in heavy goods vehicles) using rural roads. Where proposals would have a detrimental effect on the amenities of nearby properties or on the quality or character of the local environment they will not be permitted.

Improvements to the road network in the immediate vicinity of a site may be required in connection with a proposed development where the traffic generated from that development is likely to have an adverse effect on the safety of a road or a particular road junction or cause traffic flows to exceed its design capacity. Without these improvements permission will be refused. Where improvements are proposed by applicants, they will need to enter into a planning obligation under section 106 of the Town and Country Planning Act 1990 in order to ensure that these improvements are implemented as a part of the proposal. Roads Circular 6/91 refers to developer contributions for new and improved accesses.

The Strategic Highway Network serves to carry much of the longer distance traffic travelling within and through the District. To enable these roads to perform their function it is important that the number of access points is not

increased, as this is likely to result in a decrease in safety and an increase in congestion on these roads. Therefore, applications which propose a new site access onto the Strategic Highway Network will be discouraged. As PPG13 advises access onto primary routes should be avoided as far as practicable. Applications which would result in a material change in the level or type of traffic generated from an existing site access may conflict with the policy and be unacceptable.

In implementing this policy the District Council will be very reliant upon the advice of the highway authority, particularly in relation to the highway authority's standards and to the issue of operational capacity.

TRAFFIC CALMING

The District Council, in conjunction with the Highway Authority, will seek and promote opportunities for implementing traffic calming and road safety measures which will improve road safety and minimise the impact of traffic on the environment.

Permission will not be granted for proposals which would prejudice the implementation of a proposed scheme, or which would reduce the effectiveness of a scheme already implemented.

From time to time the District Council may identify areas where it considers there are significant road safety problems, which need to be resolved. In such instances it will work with the highway authority to promote traffic calming and road safety schemes, which improve road safety and minimise the impact of traffic on the environment. However, it is important to ensure that such schemes do not result in adverse impacts such as noise, inappropriate displacement of traffic to other areas, or undue inhibition of essential access or public transport. The Council will therefore consult widely on such schemes. The responsibility for funding and implementing schemes rests with the highway authority.

PARKING PROVISION

Development will only be permitted only where: -
(a) it complies with specific parking standards (details in the South Bucks District Council Local Development Framework appendix 6)
(b) parking provision is made on land owned or controlled by the applicant and the proposals would not reduce the level of parking provision serving other development; and
(c) parking provision is made on the development site or, where this is not possible, on other land in the immediate vicinity provided that it is likely to be used to meet parking needs associated with the development; and
(d) it would not be likely to result in non-residential on street parking in residential areas.

Explanation

Whilst the Council wishes to minimise dependence on the car, it also accepts that travel patterns and modes of travel are unlikely to change fundamentally within the lifetime of this Plan. Therefore, it will be necessary for developments to make provision for the off-street parking of cars and other vehicles attracted by development proposals, and to do so on land owned or controlled by the applicant. Parking provision should in most cases be on the development site, but provision may also be acceptable on other land very close by provided that it is located, and laid out where it can be tied to, and is likely to be used in connection with, the development. Proposals must not reduce the parking facilities serving other premises unless those other premises have a surplus of provision. The provision of adequate new off-street parking is essential to reduce the problems caused by vehicles parked on the street, such as the risk of accidents and the damage to the visual environment.

It is essential that the reduction is only applied in these town centres. Other areas would be unsuitable because of their lack of public parking facilities, which often results in on-street parking. A reduction of the standards in such areas is likely to result in further on street parking to the detriment of safety and amenity.

PARK AND RIDE

Permission will not be granted for park and ride proposals in the Green Belt. In areas excluded from the Green Belt, a park and ride proposal may only be permitted where: -

- (a) the size and location of the scheme would result in a reduction rather than an increase in the amount of travel undertaken by car; and
- (b) the proposal would not result in traffic generated by the scheme using residential roads, rural lanes or other roads of only local importance which are in principle not suitable for such traffic; and
- (c) the site would not be visually intrusive and would be satisfactorily integrated into the surroundings; and
- (d) the proposal would not be likely to result in parking on-street or on other land unsuitable or not designed for parking; and
- (e) the proposal would be compatible with and would not adversely affect the character or amenities of nearby properties or the locality in general and
- (f) the proposal would comply with all the other policies in this Plan.

Explanation

Government guidance in PPG13 'Transport' indicates that local plans provide the opportunity to consider whether provision should be made for park and ride schemes.

The District Council does not consider the provision of park and ride facilities in the Green Belt to be appropriate. Such facilities would compromise the purposes of including land in the Green Belt and would not permanently retain its open and undeveloped character. The development of a large area for car parking would unacceptably introduce urban elements into rural and open land.

There are two types of park and ride schemes: -

- a) those providing parking at railway stations on radial routes serving major urban centres, such as London, and used mainly by commuters; and
- b) those providing parking on the fringes of urban areas to encourage transfer to buses travelling to the town centre.

It is important that park and ride schemes encourage the use of rail services rather than increase car travel for the latter would defeat the primary purpose

of park and ride. The Council is concerned that significant increases in parking provision at railway stations in the District could encourage long distance commuting by a combination of car and rail, particularly to London. This could lead to a material increase in car travel contrary to the aims of local and national transport policies. Therefore, the Council will wish to be satisfied that any additional car parking at railway stations is aimed at encouraging a switch from car to rail travel rather than increasing the overall number and length of car journeys.

Park and ride schemes must not be located where they would result in traffic using roads which are unsuitable to serve such facilities. Where roads providing the access to a park and ride facility are intended by their position within their road hierarchy to carry only very localised traffic the Council will consider such proposals to be unacceptable. In particular, residential roads and rural lanes will not be considered as providing appropriate access routes.

It is also important that traffic generated by park and ride proposals, together with any associated transport infrastructure does not have a detrimental effect on the use, quality or character of the local environment. Highway improvements or significant increases in traffic movements can be detrimental to both the local or rural environments. Where this is so proposals will not be acceptable.

Care needs to be taken when locating and designing park and ride facilities to ensure that the site is not intrusive, that the proposal retains as many existing landscape features as possible and makes provision for additional landscaping in order that the scheme can be satisfactorily integrated into the surroundings. It is not only trees that are important but also the levels of the site, details of the lighting, fencing and surfacing materials. The lighting of such schemes can be particularly intrusive at night. Sites which are at present intrusive in the landscape will not be suitable, since new landscaping can take a significant amount of time to integrate proposals of this type into the surroundings.

The noise generated by vehicles and users of park and ride schemes can be intrusive, especially for local residents during the early morning, or late at night when the surrounding noise levels are reduced. Therefore, applications will be assessed to ensure that there will be no adverse effect on the amenity of local residents.

The development of park and ride facilities can sometimes lead to a reduction in the length of car trips, pollution and congestion in town or city centres. However, it is possible that such facilities can encourage longer trips, for example where a new park and ride scheme makes a town more attractive to shoppers thus drawing their custom away from more local shops. In order to prevent this the District Council will normally only look favourably upon those schemes whose size helps to relieve congestion, but do not encourage longer vehicle trips.

MOTORWAY SERVICE AREAS AND TRUNK ROAD SERVICE AREAS.

Permission will not be granted for motorway service areas (MSAs) or trunk road service areas (TRSAs) in the Green Belt or the Colne Valley Park. Neither would permission be granted, unless: -

- (a) the proposed service area would be at least 15 miles from an existing or approved service area or from a site allocated for that purpose in a Development Plan; and
- (b) it is clearly demonstrated that the whole range of possible alternative sites has been examined and that there is no site more suitable for the development than the proposed site; and
- (c) the type and scale of facilities would serve only the essential and immediate needs of motorway or trunk road users; and
- (d) the site would not be visually intrusive and would be satisfactorily integrated into the landscape; and
- (e) the proposal, including the use and the scale, height, layout, siting, form, design and materials would not adversely affect the character or amenities of nearby properties or the locality in general and the proposal would be in accordance with policy EP3 (Use, Design and Layout of Development); and
- (f) the development would avoid the risk of congestion or slowing on the main carriageway, and would not result in the operational capacity of the surrounding road network being exceeded; and
- (g) if a service area is to be accessed direct from a motorway or trunk road, there should be no other link to the surrounding road network other than an access strictly limited to emergency services and staff vehicles; and
- (h)** the proposal would comply with all the other policies in the Plan.

Explanation

The responsibility for the development of roadside facilities including motorway service areas and trunk road service areas rests with the private sector. However, where they are developed, service areas will often need to provide certain facilities and levels of service; for example motorway service areas are required to have free parking, toilets, a picnic area and fuel available 24 hours a day every day of the year.

Government guidance set out in PPG13 and Circular 1/94¹ states that approval should not be given for a motorway service area within a Green Belt except in very special circumstances, such as the lack of any signed motorway service areas. All the motorways in South Bucks are in the Green Belt and therefore applications for the development of motorway service areas will not be permitted. The only existing stretch of trunk road within the District is the A40 (T) from the Denham roundabout east towards London that also lies within the Green Belt. This road is in effect an extension of the M40 and is of a similar standard to a motorway and therefore the same criteria will apply as to motorway service areas. Service areas will not be permitted within the Colne Valley Park in accordance with policy TR9 of the County Structure Plan.

The Green Belt to the west of London, including South Bucks, is acknowledged as being the most seriously fragmented of all. Given that service areas would not maintain the open and undeveloped character the Council considers that such proposals would only serve to further fragment the Green Belt within South Bucks and will therefore not be permitted. Furthermore the Colne Valley Park has in some parts been damaged by previous developments, and it would be inappropriate to allow proposals for service areas, which would cause further harm to the Park particularly given that the local authorities are working to bring about substantial improvements to the area.

The minimum interval between motorway service areas has been set by the Department of Transport (now the Department of the Environment, Transport and the Regions) at 15 miles, although the guidance also states that this does not mean that the Government positively recommends provision of motorway service areas at 15 mile intervals but that the need for a new facility nearer than about 15 miles to an existing one would not normally be sufficient to outweigh objections on road safety and traffic management grounds. It will be important to consider not only existing service areas on the motorway or trunk road involved, but also those located on other motorways or trunk roads close to the proposed development. Account should also be taken of any sites which have been given permission or which have been allocated in a draft or adopted development plan for such purposes. Alternative locations, both within and outside South Bucks, for a service area need to be examined in order to ensure that even if there were to be exceptional circumstances, that the location proposed would be the most suitable location which would have the least environmental impact.

Circular 1/94 states that intervals between services have not been much more than 30 miles and that this remains a desirable general aim from a transport point of view. However, the Circular goes on to state that this cannot be a hard and fast rule especially in areas of restraint. South Bucks lies within an area of strategic restraint and therefore the Council will expect alternative locations to be examined over a wide area and well in excess of thirty miles from existing facilities.

Given that the M40 motorway, which commences at Denham within this District, extends in a northwesterly direction towards Birmingham, any application for a motorway service area within this section of the M40 will be less than 15 miles from the commencement of the motorway. The Council does

not consider that there is a need for services on this part of the M40 so close to the beginning of the motorway and existing facilities on the A40.

¹ *The Government revised its policy on motorway service area development in July 1998 in its MSA Policy Statement.*

Service areas should be designed in order that vehicles freely flow both on and off the motorway or trunk road and that traffic will not have to queue into the facility, which would result in queuing traffic on the main road. One aspect of the design is that sufficient parking should be provided within the development to cater for the number of vehicles wishing to stop at the facility.

Where a service area is served directly from a motorway or trunk road, it is preferred that no other access is permitted onto the local road network. However, if this cannot be avoided it will be necessary to ensure that any such additional link to the local road network is only to be used by emergency, service and staff vehicles and that the layout prevents such a link being used by other traffic. It will also be necessary to ensure that the impact of these vehicles is properly assessed to ensure that existing local roads would not become overloaded, or that road safety, congestion or residential amenity would be adversely affected. The local highway authority will be consulted regarding the impact of a proposed service road upon the local road network.

Irrespective of whether it is accessed directly from a motorway or trunk road, motorway service areas and trunk road service areas should only serve the immediate needs of users of the motorway or trunk road. Service areas will normally include free short-term parking, toilets, fuel facilities, a picnic area and a refreshment facility. However, facilities such as a hotel or recreation or conference facilities will not be considered favourably since they are not matters for which the motorist has an essential immediate need and, indeed, such facilities would be likely to result in the service area becoming a destination in its own right, thus generating travel demand.

Proposed service areas have the potential to have a significant adverse effect on many aspects of the environment. Accordingly the Council will also assess applications against all other policies of this Plan.

TR9 deals solely with motorway service areas and trunk road service areas and sets out the criteria that would be applied if very exceptional circumstances arose whereby the need for such facilities on the national long distance road network justified, as an exception to the policy, a location in the Green Belt. Roads other than motorways and trunk roads are intended to carry traffic shorter distances and accordingly the Council considers that exceptional circumstances will not arise which would justify the location of other roadside facilities in the Green Belt. Such roadside facilities, including petrol filling stations and refreshment facilities should be provided in areas excluded from the Green Belt. They will be considered in the context of other policies in this Plan.

The provision of roadside facilities are specifically designed for the benefit of the motorist and where such benefits occur then it is likely that both the number and length of motorised journeys will increase to the detriment of the

whole environment. In addition the location of such a facility can have a significantly adverse effect on the local environment, although this is dependant upon location. This policy does not permit the development of motorway service areas or trunk road service areas within the Green Belt. If such very special circumstances are proved to exist, then the remainder of the policy seeks to limit such development to ensure that the effects on the environment are mitigated to a level acceptable to this Authority.

HEAVY GOODS VEHICLES

Development, which is likely to generate heavy goods vehicle trips, will only be permitted where: -

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| <p>(a) vehicle movements would not adversely affect the character or amenities of nearby properties or the locality in general, for example through noise, vibration, disturbance or visual intrusion, and the proposal would be in accordance with policy EP3 (Use, Design and Layout of Development); and</p> <p>(b) in the case of a proposal likely to generate a significant number of heavy goods vehicle trips, the access would not be onto a residential road, rural lane or other road which is not suitable in principle for such traffic, and that vehicles would be able to conveniently access the strategic highway network without using such roads; and</p> <p>(c) the proposal would comply with all other policies in this Plan.</p> |
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Explanation

The Council's Further Assessment of Air Quality undertaken in September 2005 identified that the majority of nitrogen dioxide emissions associated with the Air Quality Management Area (AQMA) were from Heavy Duty Vehicles. In the AQMA adjacent to the M25 HDV emissions were responsible for 74-76% of nitrogen dioxide concentrations. It is therefore important to take action to prevent increased emissions associated with HDV movements and encourage improved efficiency in product transfer.

South Bucks is located close to the urban areas of Slough and Hillingdon, and to Heathrow Airport. The District is also very accessible by road to London and the rest of the country, because three major motorways pass through the area. Most freight is therefore carried by road, despite recent and continuing encouragement by the Government to increase the share of freight carried by rail or water.

Part (b) of the policy applies to developments where the proposed use would involve a significant number of heavy goods vehicle trips, including where these proposals are trips for construction purposes, on a daily basis and over a prolonged period. Because the impact of a heavy goods vehicle is much greater than that of a car, a "significant number of HGV trips" would be considerably less than a "substantial demand for the car". Similarly, heavy goods vehicles

can vary from 7.5 to 40 tonnes gross laden weight, and the greater the weight the fewer the number regarded as being significant. Proposals will be expected to comply with other relevant transport policies, irrespective of whether or not they involve a significant number of heavy goods vehicle trips.

Sites generating a significant number of heavy goods vehicles should only have access to roads that are suitable, and preferably designed, for their use. Roads should only be used if HGVs are not restricted from fluent driving styles such that air quality is effective by stop-start driving conditions that result in less efficient fuel use. The rural lanes of South Bucks are not considered suitable for significant heavy goods vehicle movements.

8.4 Action Plan measures- Development Control and Air Quality

It is important for Council policies to reflect National policies. Development in South Bucks must be undertaken in a way that encourages sustainability. As such, it is important that development does not impact upon air quality. Development should not encourage an increased traffic flow, and it is important that policies reflect this. Buildings should also be designed with energy efficiency in mind, for extended life spans and to allow modification and change in use.

South Bucks District Council's Local Plan includes a number of measures that will be saved for three years, which endeavour to reduce the impact of development on the air quality in South Bucks. These policies must be built upon in the development of the Local Development Framework with particular attention being directed towards development within the Air Quality Management Area, where policies must reflect the need to prevent increased public exposure, and development in areas adjacent to the AQMA where increased emissions, such as emissions from increased traffic flows, may reduce air quality within the AQMA.

Planning Policy Statement 23 addresses the air quality impacts of development and pays particular attention to areas for which Air Quality Management Areas have been designated.

Traffic

Every new development has the potential to generate traffic and therefore influence air quality. Some redevelopment may not impact upon the number of vehicles travelling to a site but may alter the vehicle make up on roads. This can influence the air pollutant species. An increased flow of lorries may impact upon the particulate matter concentrations on the roadside. For minor schemes, depending on location, the impact may be small, but where there is an effect, the developer will be expected, in the first instance, to set out a realistic and practicable statement on how car use will be minimised, appropriate to the activities that will be carried out at the development.

Planning Policy Statement 23 identifies the importance of the planning and air quality control functions of LAs working closely together in:

- carrying out the reviews and assessments of air quality, especially where new development is likely;
- considering the possible impact of new development in drawing up any air quality action plans and local air quality strategies;
- considering the results of air quality reviews and assessments in the preparation of development plans; and
- taking any development control decisions, which may have a direct or indirect bearing on existing air quality or creating exposure to poor air quality.

Air quality in the South Bucks District Air Quality Management Area (AQMA) will inevitably be influenced by factors beyond the Council's control. It is therefore important that the possible impact on air quality of developments close to the AQMA is also considered. Air quality should be an important consideration, whether or not levels of air pollution in areas, on which the proposed development may impact, due to dispersion or cumulative load, are already high enough to justify the designation of an AQMA.

More weight will generally need to be given to air quality considerations, for example, where a development would have a significant impact on air quality inside, or adjacent to, the AQMA, but air quality considerations can also be important even where existing levels of air pollution are not sufficient to justify AQMA designation.

Any air quality consideration that relates to land use and its development is capable of being a material planning consideration. Wherever a proposed development is likely to have significant air quality impacts, close co-operation between the Council's Development Control and Heath and Housing Services will be essential. The impact on ambient air quality is likely to be particularly important:

- where the development is proposed inside, or adjacent to, the air quality management area (AQMA) designated under Part IV of the Environment Act 1995;
- where the development could in itself result in the designation of an AQMA; and
- where to grant planning permission would conflict with, or render unworkable, elements of this air quality action plan.

It is not the case that all planning applications for developments inside or adjacent to AQMAs should be refused if the developments would result in a deterioration of local air quality. Such an approach could sterilise development. LPAs, transport authorities and pollution control authorities should work together to ensure development has a beneficial impact on the environment, for example by exploring the possibility of securing mitigation measures that would allow the proposal to proceed. Road transport is recognised as a significant contributor to poor local air quality, particularly in urban areas. LPAs can play a key role by ensuring that developments reduce the need to travel and encouraging more sustainable travel choices.

The Council will develop a specific strategy for reviewing planning applications, which may have an adverse impact upon air quality, or bring individuals into areas where low air quality has been identified (i.e. within the AQMA).

ACTION 20: The Council will request an Air Quality Assessment for developments that meet the following criteria:

- a) Developments located in, or which may effect, the Air Quality Management Area, where either direct emissions to air occur, or when any of the criteria b) c) d) or e) are met;
- b) Proposals that may result in an increase in traffic volume of 5% on roads with an AADT of greater than 10,000vpd;
- c) Proposals that may result in a change in vehicle speed of more than 5 mph on roads with an AADT of greater than 10,000vpd;
- d) Proposals that may increase the proportion of Heavy Duty Vehicles by more than 5% on roads with an AADT of greater than 5,000vpd
- e) Proposals that include new car parking for more than 200 vehicles

ACTION 21: Where an Air Quality Assessment is submitted to the Council air quality significance will be assessed against a written assessment methodology and recommendations will be based on the following development recommendation scheme:

<u>Assessment Result</u>	<u>Recommendation</u>
Overriding considerations	Development measures to remove “overriding” level impacts and re-assess for other impacts. Preference should be for re-design, but mitigation should also be considered. If not possible to remove “overriding” priority, recommend refusal. For change of use, the impacts should be substantially less than previous use.
High priority consideration	Development measures to reduce “high priority” impacts as far as possible, and re-assess for other impacts. Preference should be for re-design, but mitigation should also be used. Consideration may also be given to offsetting. If the impact is still “high priority”, consider recommendation of refusal. For change in use, impact should aim to be less than previous one.
Medium priority consideration	Develop measures to reduce “medium priority” impacts, including redesign and mitigation. Offsetting and compensation measures may also be considered.
Low priority consideration	Consider available measures to mitigate, offset or compensate for impacts, where appropriate.

Amended from NSCA Guidance on Development Control: Planning for Air Quality (2004)

The intention of an air quality assessment is to demonstrate the likely changes in air quality as a result of the proposed development. The Council will expect some qualitative assessment of these changes to be included in the report, alongside a quantitative assessment.

The basis of the assessment is to compare the existing situation with that following the completion of the development and determine the changes in air quality expected. The assessment will also need to compare predicted pollutant concentrations with National Air Quality Strategy Objectives. The three main steps in the production of an assessment include:

- a) Assess the existing air quality situation in the study area;
- b) Predict the future air quality without the development in place;
- c) Predict the future air quality with the development in place.

Energy use and conservation

The burning of fossil fuel creates emissions of a number of different pollutants. Fossil fuel combustion produced high levels of carbon dioxide a contributor to climate change. Sulphur containing fossil fuels, such as coal lignite and heavy fuel oil release sulphur dioxide during combustion. Emissions of particulate matter also result from the combustion of fossil fuel including home heating and motor vehicle combustion. The high burn temperature achieved during fossil fuel combustion causes the oxidation of nitrogen in the atmosphere and the production of nitrogen oxides such as nitrogen dioxide. Energy conservation, energy efficiency and sustainable resource are considered a material consideration in determining planning applications.

Building design and construction can greatly effect the energy use of a building, during its construction phase and through to the building use. Planning applications will need to address this and only suitable developments will receive planning permission.

The promotion of energy efficiency and the adoption of sustainable design principles will help reduce the overall environmental impact of development and land use in the District. Such matters need early consideration in the design process. Development proposals should maximise energy efficiency, and contribute to lower resource consumption, through layout, orientation, siting of windows, materials used, insulation, air movement, solar access and building design and construction.

New buildings in town centres will be expected to be designed with energy efficiency, sustainable design and construction in mind. Town centre development occurs in areas which are particularly sensitive to traffic flow. Development should not encourage an increased traffic flow. Town centres in South Bucks, by their very nature, are a focus of the local transport network and as such, are particularly susceptible to congestion.

ACTION 22: In assessing the impact of development proposals, the Council will take account of the proposed developments contribution towards reducing the use of energy through appropriate design, layout, orientation, density and location.

The Council encourages energy conservation in private homes. The emissions of NO_x and CO₂ from private houses within South Bucks can be greatly affected

by an improvement in energy efficiency. In support of the Home Energy Conservation Act 1995, South Bucks District Council has implemented a number of schemes to improve energy efficiency within private homes. Energy efficiency remains high on Council's agenda.

ACTION 23: The Council will continue to encourage energy efficiency in private homes by working with its partners to identify opportunities to seek additional resources, make strategic links and target the poorest households and properties. The Council will also raise awareness of the benefits of energy efficiency measures through advice, education and promotion.

Renewable energy

Energy use is vital to many activities undertaken at home, at work and in all areas of our life. Energy is used for cooking, heating the home, boiling the kettle, operating computers and in most activities we undertake during the day. The source of energy can be localised, such as gas boilers or produced at central locations, such as the production of electricity from coal fired power plants. While energy is essential to our daily routine, its production and use is often associated with air pollution emissions.

There are many ways of reducing the emissions of air pollution resulting from energy use and they can be grouped into two main areas. Firstly, we can obtain energy from energy sources, which contribute a smaller amount of atmospheric emissions per unit of energy generated, and secondly we can reduce the overall amount of energy used.

Buildings account for more than half of all energy used and travelling between them a further quarter. Energy is used through out the development of a building from the extraction of raw materials to the use and end of life of a building. There are many ways in which this energy use can be reduced and alternatively sourced, so that the impact upon air quality is reduced.

The use of renewable energy for heating buildings can have a positive impact on air quality. Passive solar design makes the most of the sun's natural heat and light, a buildings orientation and available shade to ensure the optimal environment for the occupiers. Active systems, such as photovoltaic systems convert sunlight directly into electricity. This technology is improving all the time. While the initial costs for the inclusion of photovoltaic cells into buildings are often high the running cost for energy production is lower. Other renewable energy technologies such as the development in the wind power field may also provide for viable energy production schemes at the local level. With improvements in costs and developer experience, the use of renewable energy provided at a local scale may play an important role in reducing both localised emissions of air pollutants and national air quality.

ACTION 24: The Council will encourage renewable energy schemes, such as passive and active solar schemes and small-scale wind power by;

- a) Encouraging new developments to be designed in such a way as to maximise the potential for passive solar energy and natural ventilation and, where practicable, to accommodate future installations of solar panels;
- b) Supporting innovative proposals and demonstration schemes;
- c) Providing advice on available grants for renewable energy

Providing there is no unacceptable impact on the environment or residential amenity.

Layout, design and movement

Buildings should be laid out in such a way as to encourage pedestrian movement, minimise the distance to other land uses and public transport, reduce car dependency and maintain a high level of accessibility. The layout of streets should take account of the range of different needs and offer safe, attractive and convenient environment to all users. Whilst car and service vehicles will need to be accommodated, traffic dominated development should be avoided and greater priority given to pedestrians, cyclists and public transport. The layout should also take into consideration desire lines, topography and access to the site. Walking through an area should be a pleasurable process of travelling between activities, and the number of people present will provide security.

The layout of buildings along the street can have a significant impact on the environment. Excessively wide roads with houses clustered around cul-de-sac and spaces do not contribute to a pedestrian-friendly environment. Cul-de-sac layouts result in higher traffic levels on feeder roads, longer, indirect routes for pedestrians, and limited visual interest. A permeable layout encourages pedestrian movement, resulting in a better-used and safer environment. New development needs to be integrated with the surrounding area, with good connections to the existing network of roads and footpaths, allowing people and goods to move easily and safely from one place to another.

ACTION 25: The Council will expect a high standard of design and layout in development proposals. Layout, access and movement will be taken into account when considering planning applications for development.

Mixed-use development

Mixed-use developments reduce the need to travel and can therefore aid the reduction in traffic flow within the District.

ACTION 26: The Council will promote mixed-use development, particularly in town centres.

Proposals for new employment-generating development

New business and industrial development in suitable locations other than established places of employment will be encouraged where these are accessible by public transport. While employment-generating development is

encouraged because it will maximise the opportunities available to South Bucks residents and will foster the District's economic health, it is important that traffic flow remains unaffected. Congestion resulting from increased employee car use and deliveries may have a major impact upon air quality. It is important that any such developments are in areas that have good provision of public transport.

ACTION 27: The Council will favour proposals for employment-generating developments in suitable locations with good access by modes of travel other than the private car.

Designing new development with good access in mind

The immediate access to a site needs to be carefully designed, however small or large the site. The position of a building on the site should allow for safe, clear, unimpeded access for pedestrians, cyclists and disabled people, whichever mode the later arrived by. Pedestrian routes from bus stops should be direct, obvious and signposted if the development attracts significant number of visitors. Where there is a conflict with vehicles, priority should always be for pedestrians and cyclists. Parking for the latter, and for vehicles used by disabled drivers, should be located as close to the building as possible. For larger sites, movement through the site for pedestrians and cyclists should be via direct, safe routes, using the shortest route to buildings possible, with priority over motor vehicles. Car parking, if provided, should be located so that it is not interposed between a building on the site and the access (es) to the site, thus lengthening walking distances.

ACTION 28: The Council will encourage development with good accessibility for those using public transport, cycling or walking. Access for users of non-car modes will be encouraged above access for car users, except that, in all cases, ease of access for people with disabilities will be given the highest priority.

The release of controlled substances

South Bucks District has a number of industrial processes, which contribute to air pollution. Within the District there are a number of landfill processes regulated by the Environment Agency for emissions to air water and land. The Council is limited in its ability to control emissions from these source but liase with the Environment Agency regarding complaints and planning issues.

South Bucks has 29 small industrial (Part B) processes, which are regulated under The Pollution Prevention and Control Regulations. Of these small industrial authorised processes, 4 processes are vehicle respraying activities, which are regulated for emissions of volatile organic compounds and particulate matter, 3 are concrete batching operations, which are regulated for emissions of particulate matter, 1 is a mineral drying processes regulated for particulate matter emissions, 2 are die casting facilities regulated for a number of emissions, 1 is a road stone coating plant, 2 are mobile concrete crushers, regulated for particulate emissions and 18 are petrol stations.

ACTION 29: The Council will continue to regulate the authorised processes under the Pollution Prevention and Control Regulations 2000 requiring operators to use Best Available Techniques to control the emissions of prescribed substances. The DEFRA recommended risk based inspection scheme will be operated to monitor compliance.

Under construction

Pollution is also produced temporarily when buildings are demolished or are under construction. Particulate matter is emitted either from the works themselves or from stockpiles.

Other pollutants may also increase in the area depending on traffic controls while work is being undertaken and from construction traffic itself. However, planning application conditions are used to minimise this type of pollution. This can be controlled by sheeting vehicles leaving and entering a site, cleaning mud which is transported to the road outside the site, dampening down the site to prevent dust entrainment, chuting material and covering stock piles.

ACTION 30: The Council will encourage reduced vehicle trips to the development site, measures to prevent dust entrainment during material transport and storage and facilities to prevent mud leaving the site.

9 Public information and Education

9.1 Introduction

Our own travel modes affect the amount of pollution we generate. Walking and cycling are emissions free and have the added benefit of improving health. Regular exercise, such as taking a short walk instead of driving, can reduce the risk of developing heart conditions, counter obesity and improve bone development. Car drivers are regularly exposed to higher levels of pollution than cyclists or pedestrians. In heavy traffic the exposure to pollution can be three times greater for car drivers.

Short journeys-of two miles or less-contribute disproportionately to air pollution if they are made by car, since engines and catalytic converters do not work effectively until properly warmed up. Reducing the number of short journeys made by car is an effective way in which individuals can improve local air quality.

The 'school run' is a time where congestion on roads is often at its greatest. The development of initiatives such as 'safer routes to school' and 'walking buses' will only be a success if individuals respond to these schemes and increased numbers of children travel to school by foot.

Walking to school reduces children's exposure to air pollutants. Young children (along with the elderly) are most susceptible to the health affects associated with air pollutants. Walking to school also provides social interaction and has associated health benefits from the exercise aspect of the journey.

People's vehicle choice can also help to reduce air pollution emissions. Cars with smaller engines are generally more efficient. Purchasing an alternative fuelled vehicle such as LPG vehicles, electric vehicles and CNG vehicles, can also have a positive effect. These cars have lower emissions than conventional fuelled vehicles and are a viable alternative in many situations.

Driving style also impacts upon air quality. Harsh accelerating and braking increases fuel use and pollutant emissions. Driving in a higher gear when traffic conditions allow also saves fuel and reduces emissions. Unnecessary idling also creates preventable air pollution emissions. Switching off the engine when it is safe to do so such as when in stationary traffic prevents unnecessary emissions.

As consumers we have a choice about the products we buy. Buying energy efficient electrical appliances, using energy saving light bulbs, purchasing locally produced goods that require less transportation, can all aid a reduction in air pollutant emissions. The Consumers' Association focuses on environmental issues as part of its product testing and provides more information on its web page, www.which.net. As consumers, through purchasing certain environmentally friendly products, we can impact upon the way in which products are produced and hence indirectly reduce air pollutant emissions.

Careful energy management in the home can also cut pollution and save money. Insulation soon pays for itself in reduced heating costs. Purchasing renewable electricity reduces pollution impacts upstream and is often cheaper than electricity from standard sources. Calculations can be made online at www.youswitch.com.

Reducing the average home's heating temperature by one degree Celsius will save ten per cent on the heating bill per year. www.saveenergy.co.uk has tips such as this for reducing energy use and saving money. Avoiding using heating wastefully saves energy and money. Npower has a useful area on its website with tips on using energy efficiently.

Grants for private homes are available for the installation of solar panelling. See www.solargrants.org.uk for further information. Solar panels can be used to generate electricity or to heat water.

9.2 National strategies to raise awareness of air quality issues

The Government has been running a National Campaign "are you doing your bit?" The campaign centres on the actions we, as individuals, can take to improve air quality. Changes in day-to-day actions at home, travelling, shopping and at work can help reduce our own impact upon air pollution. There are many suggestions in the campaign, including reducing energy use and driving more efficiently. More information can be found at www.doingyourbit.org.uk.

It is important for people to be informed about the effects that air quality can have on health. The Department of Health (DoH) funds a number of research studies relevant to air quality, such as identifying the effects of long-term exposure to pollutants. The DOH's work is paralleled with that of the Committee On the Medical Effects of Air Pollutants (COMEAP) who advises on new scientific studies relevant to the effect of pollutants on health. COMEAP also identifies whether existing information regarding pollutants health impacts is adequate or whether further investigation is required. The Department for Environment, Food and Rural Affairs (DEFRA) also undertake a major research programme on air pollution. DEFRA are advised by the Expert Panel on Air Quality Standards (EPAQS) an independent body who provide information on non-occupational ambient air quality standards.

Other bodies such as the Air Quality Expert Group (AQEG), Traffic Management and Air Quality (TRAMAQ) and government departments such as the Department of Trade and Industry (DTI) also undertake research and identify air quality policy impacts upon industry.

9.3 Information and education- raising the profile of air quality issues in South Bucks - The Bucks and Milton Keynes Air Quality Strategy- promoting air quality

The Bucks Air Quality Management Group

In 2000 representatives from each District Council, the County Council, Milton Keynes Council and the Primary Care Trust formed a working group to help co-ordinate air quality management in Bucks. This collaboration not only reflects the important role that all local authorities in the county play in protecting the environment, but also signals the creation of partnerships for dealing with air quality issues in the future. The group has evolved very successfully over the last four years and will continue to promote initiatives for improving air quality across the County.

Originally, the two primary objectives of the group were to create a useful website and to produce and formally adopt a countywide air quality strategy.

WWW.BucksAirQuality.Net

In a joint initiative the District Councils, Milton Keynes Council and Bucks County Council have joined forces to develop an air quality information website containing a wealth of information. The main objectives of the site are to:

- Provide an interesting and informative source of material accessible by all;
- Bring together in one location, air quality information relating to all Councils;
- Increase public awareness of local air quality/pollution issues;

- Forge *partnerships* within the County;
- Identify deficiencies in the air quality regimes within Bucks as a whole;
- Provide a data-base for current and historical air quality monitoring for all interested parties;
- Provide a teaching aid for educational establishments;
- Promote the ideal of taking responsibility for our environment.

In 2001/2 this site was voted the best local authority air quality website by the Air Quality Management Journal.

Teaching packs for schools

In conjunction with the “cut your engine” signs at school, we intend to increase the awareness and understanding of air quality and environmental issues by designing and circulating new teaching packs. These will be distributed to each school in the County and interactive demonstrations/talks are also available on request. A number of successful classes occurred during 2001/2002 at local primary schools.

Action Plan measures to promote air quality

The National Air Quality Strategy requires Local Authorities to provide information on air quality. South Bucks District Council collects data on air pollution within the District in real time via an air quality monitoring station located in Tatling End (Denham) on the Oxford Road. The site monitors NO_x and PM₁₀.

ACTION 31: Information obtained from the real time monitoring of air quality at Tatling End will be made available on the Council website and through an Air Quality Bulletin produced in each edition of South Bucks Report.

South Bucks also has a diffusion tube network for both benzene tubes and nitrogen dioxide tubes. These provide information of monthly averages, which are useful in showing long-term trends in pollutant levels.

ACTION 32: Information obtained from the nitrogen dioxide and benzene tube network will be made available on the Council website and through an Air Quality Bulletin produced in each edition of South Bucks Report.

The availability of pollution information has to be accompanied with information on what measures are being taken Nationally, on a regional scale and locally to reduce air pollution concentrations. This information must also provide people with information on the action that they can take to improve air quality.

The Consultation Draft Air Quality Action Plan for South Bucks will be widely available for consultation. Copies will be available in Libraries and the document will be available on the web. Community groups and local industry will receive notification of where they can view the document. This document sets out a number of important Government policies and proposals, County Council policies, Bucks and Milton Keynes Air Quality Strategy policies and Action Plan policies to be implemented by the Council to improve air quality. Feedback obtained during consultation will be an important contributor to the production of the final Action Plan, which will then be adopted.

It is important that more information is available regarding those actions individuals can take to improve the air quality within South Bucks. Leaflets emphasising the need for proper car maintenance will be distributed to MOT testing stations to be given to their customers. The aim is to improve awareness of practical tips to make sure that all vehicles owned by South Bucks residents meet emissions standards at all times.

ACTION 33: The Council will produce leaflets for MOT testing stations in the District to distribute with MOT certificates, emphasising the need for regular car maintenance.

It is important that everybody takes an active role in improving air quality within the District. While National, regional and local policies will impact upon air quality; action taken by fleet operators and individual drivers is far more powerful. A reduction in emissions from traffic flow on roads will only be achieved if we all analyse our own means of travel. Energy efficiency at home and at work will play an important role in reducing air pollution emissions. By publicising the action we can take to reduce our own contributions to air pollution it is hoped that we will all make a positive impact on air quality.

Appendix 1. Action Plan measures and assessment of cost effectiveness

<u>Action</u>	<u>Reason</u>	<u>Priority</u>	<u>Cost effectiveness¹</u>	<u>Responsibility</u>	<u>Timescale</u>
ACTION 1: South Bucks District Council will work closely with Bucks County Council to encourage the use of cleaner vehicle technologies.	Reduced vehicle emissions	Med/ High	Cost: Low Impact: Med Cost effectiveness √√√	Heath & Housing Services	Continuous (Review end 2008)
ACTION 2: The Council will urge the Government to continue to support schemes aimed at encouraging the development of cleaner vehicle technologies such as the Power Shift and Cleanup schemes.	Reduced vehicle emissions	High	Cost: Low Impact: High Cost Effectiveness √√√√	Heath & Housing Services	Continuous (Review end 2008)
ACTION 3: The Council through the South Bucks District Council Local Development Framework (2006-2011) will encourage the development of service station facilities that provide cleaner fuel alternatives to petrol and diesel. The development of LPG facilities, other proven cleaner fuels and recharging facilities for electric powered vehicles, will be encouraged.	Reduced vehicle emissions	Med/ High	Cost: Med Impact: High Cost effectiveness √√√	Planning Policy	From 2006
ACTION 4: The Council will review the South Bucks District for gaps in the alternative refuelling infrastructure and will encourage those service stations in areas of the District where there are no alternative refuelling facilities, to consider incorporating such facilities into their stations.	Reduced vehicle emissions	Med/ High	Cost: Low Impact: Med Cost effectiveness √√√	Health & Housing Services	Gaps to be identified by end 2007
ACTION 5: The Council will encourage local companies to consider using cleaner fuel technologies by providing information packs on the benefits of switching to cleaner vehicles.	Reduced emissions from business travel	Med/ High	Cost: Low Impact: Med Cost effectiveness √√√	Health & Housing Services	Information packs to be sent out by end 2006
ACTION 6: The Council will seek to use the cleanest available technologies for vehicles undertaking its functions, where this does not impact upon the level of service provided.	To set a good example and to reduce SBDC travel	Low/ Med	Cost: Med Impact: Low Cost effectiveness √	Contract Services	With each new vehicle hire or purchase from 2006 and included as

	emissions				requirement in procurement policy from 2006
ACTION 7: South Bucks District Council will review, alongside the Bucks Air Quality Management Group, the cost effectiveness of Vehicle Emissions Testing within the County and will support the development of any such scheme should it be considered cost effective for South Bucks.	To raise awareness of the need for regular car maintenance/to address emissions from gross polluters	Low/ Med	Cost: Med Impact: Low Cost effectiveness √	Health & Housing Services	Cost effective analysis to be undertaken by the end of 2007
ACTION 8: The Council will provide Smokey vehicle reporting forms on our website and paper forms in libraries, Parish/District Council Offices. These forms can be returned to the Council with details of a Smokey vehicle. The information will then be passed to VOSA who have regulatory powers to address Smokey vehicles	To take action against gross polluters	Med/ High	Cost: Low Impact: Med Cost effectiveness √√√	Health & Housing Services	Continuous (review end 2008)
ACTION 9: The Council will encourage the Highways Agency to investigate the use of signs within the Air Quality Management Area advising of the motorway stretches covered by the Air Quality Management Area and providing information regarding pollution levels and measures individuals could take to reduce emissions.	Increase awareness of air quality issues associated with the motorway network	Med/ High	Cost: Low Impact: Med Cost effectiveness √√√	Health & Housing Services	From 2006
ACTION 10: The Council will encourage the Highways Agency to investigate the potential impacts upon Heavy Duty vehicle emissions from the proposed rapid widening scheme between junctions 16 to 23 of the M25. The Council will encourage the Highways Agency to take actions to mitigate any potential adverse impact identified and to consider measures to reduce HDV emissions.	To prevent increased HDV emissions from the motorway network	Med/ High	Cost: Low Impact: Med Cost effectiveness √√√	Health and Housing Services	From 2006
ACTION 11: The Council will continue to liaise with the Highways Agency to identify measures that can be taken to reduce nitrogen dioxide	Reduce emissions from the motorway network	High	Cost: Low Impact: High Cost effectiveness	Health & Housing Services	From 2006

emissions associated with congestion on the M4, M40 and M25.			√√√√		
ACTION 12: The Council will work in partnership with Bucks County Council to review Heavy Duty Vehicle routes within the District to ensure that the routes used are not contributing to significant nitrogen dioxide emissions through unnecessary congestion and inappropriate routing.	Reduced emissions from the road network	Med	Cost: Med Impact: Med Cost effectiveness √√	Health & Housing Services	From 2006
ACTION 13: The Council will seek to ensure that freight movement, delivery and servicing within the District is provided in an environmentally sensitive, economic and efficient manner, which accommodates commercial needs and facilities competition.	Reduced HDV emissions from the road network	Med	Cost: Med Impact: Med Cost effectiveness √√	Health & Housing Services Development Control Planning Policy	Information leaflets to be produced by end 2006
ACTION 14: The Council will work in partnership with Bucks County Council to identify areas of the District where traffic congestion causes nitrogen dioxide levels close to the annual mean nitrogen dioxide National Air Quality Objective. The Council will work with Bucks County Council to identify measures that can be taken to reduce congestion in these areas.	Reduced traffic congestion and therefore reduce road traffic emissions	Med	Cost: Med Impact: Med Cost effectiveness √√	Health & Housing Services	By end 2007
ACTION 15: The Council will regularly review its parking provision in the context of promoting a reduction in car use.	Reduce vehicle movements and therefore reduce road traffic emissions	Low/ Med	Cost: Med Impact: Low Cost effectiveness √	Contract Services Health & Housing Services	Continuous
ACTION 16: The Council will provide information about public transport routes within South Bucks and surrounding areas on the Council's website. Links to sources of information about public transport will also be available on the website.	Reduce vehicle movements and therefore reduce road traffic emissions	Med/ High	Cost: Low Impact: Med Cost effectiveness √√√	Health & Housing Services	By end 2006

<p>ACTION 17: The Council will distribute leaflets providing information about public transport routes within the District and surrounding areas to businesses within the District with advice about formulating work place travel plans.</p>	<p>Reduce vehicle movements and therefore reduce road traffic emissions</p>	<p>Med/ High</p>	<p>Cost: Low Impact: Med Cost effectiveness √√</p>	<p>Health & Housing Services</p>	<p>By end 2006</p>
<p>ACTION 18: The Council will develop a Travel Plan for the Council offices in Oxford Road.</p>	<p>Reduce vehicle movements and therefore reduce road traffic emissions</p>	<p>Med</p>	<p>Cost: Low Impact: Low Cost effectiveness √√</p>	<p>Health & Housing Services</p>	<p>By end 2006</p>
<p>ACTION 19: The Council will offer a reduction of 25% in Private Hire and Hackney Carriage vehicle licence fees upon conversion to LPG fuel.</p>	<p>Reduced emissions from private hire vehicles</p>	<p>Med</p>	<p>Cost: Low Impact: Low Cost effectiveness √√</p>	<p>Licensing Services</p>	<p>From April 2007</p>
<p>ACTION 20: The Council will request an Air Quality Assessment for developments that meet the following criteria:</p> <ul style="list-style-type: none"> a) Developments located in, or which may effect, the Air Quality Management Area, where either direct emissions to air occur, or when any of the criteria b) c) d) or e) are met; b) Proposals that may result in an increase in traffic volume of 5% on roads with an AADT of greater than 10,000vpd; c) Proposals that may result in a change in vehicle speed of more than 5 mph on roads with an AADT of greater than 10,000vpd; d) Proposals that may increase the proportion of Heavy Duty Vehicles by more than 5% on roads with an AADT of greater than 5,000vpd 	<p>Reduced air quality impacts from development</p>	<p>Med</p>	<p>Cost: Med Impact: Med Cost effectiveness √√</p>	<p>Planning Policy Heath & Housing Services</p>	<p>From 2006</p>

e) Proposals that include new car parking for more than 200 vehicles													
<p>ACTION 21: Where an Air Quality Assessment is submitted to the Council air quality significance will be assessed against a written assessment methodology and recommendations will be based on the following development recommendation scheme:</p> <table border="1" data-bbox="135 696 528 2094"> <thead> <tr> <th data-bbox="135 696 331 770">Assessment Result</th> <th data-bbox="331 696 528 770">Recommendation</th> </tr> </thead> <tbody> <tr> <td data-bbox="135 770 331 1391">Overriding considerations</td> <td data-bbox="331 770 528 1391">Development measures to remove “overriding” level impacts and re-assess for other impacts. Preference should be for re-design, but mitigation should also be considered. If not possible to remove “overriding” priority, recommend refusal. For change of use, the impacts should be substantially less than previous use.</td> </tr> <tr> <td data-bbox="135 1391 331 2056">High priority consideration</td> <td data-bbox="331 1391 528 2056">Development measures to reduce “high priority” impacts as far as possible, and re-assess for other impacts. Preference should be for re-design, but mitigation should also be used. Consideration may also be given to offsetting. If the impact is still “high priority”, consider recommendation of refusal. For change in use, impact should aim to be less than previous one.</td> </tr> <tr> <td data-bbox="135 2056 331 2094">Medium priority</td> <td data-bbox="331 2056 528 2094">Develop</td> </tr> </tbody> </table>	Assessment Result	Recommendation	Overriding considerations	Development measures to remove “overriding” level impacts and re-assess for other impacts. Preference should be for re-design, but mitigation should also be considered. If not possible to remove “overriding” priority, recommend refusal. For change of use, the impacts should be substantially less than previous use.	High priority consideration	Development measures to reduce “high priority” impacts as far as possible, and re-assess for other impacts. Preference should be for re-design, but mitigation should also be used. Consideration may also be given to offsetting. If the impact is still “high priority”, consider recommendation of refusal. For change in use, impact should aim to be less than previous one.	Medium priority	Develop	Reduced air quality impacts from development	Med	Cost: Med Impact: Med Cost effectiveness √√	Planning Policy Development Control Heath & Housing Services	From 2006
Assessment Result	Recommendation												
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Medium priority	Develop												

<p>consideration</p>	<p>measures to reduce "medium priority" impacts, including redesign and mitigation. Offsetting and compensation measures may also be considered.</p>					
<p>Low priority consideration</p>	<p>Consider available measures to mitigate, offset or compensate for impacts, where appropriate.</p>					
<p>Amended from NSCA Guidance on Development Control: Planning for Air Quality (2004)</p>						
<p>ACTION 22: In assessing the impact of development proposals, the Council will take account of the proposed developments contribution towards reducing the use of energy through appropriate design, layout, orientation, density and location.</p>	<p>Reduced air quality impacts from development</p>	<p>Med</p>	<p>Cost: Med Impact: Med Cost effectiveness √√</p>	<p>Planning Policy Development Control Heath & Housing Services</p>	<p>From 2006</p>	
<p>ACTION 23: The Council will continue to encourage energy efficiency in private homes by working with its partners to identify opportunities to seek additional resources, make strategic links and target the poorest households and properties. The Council will also raise awareness of the benefits of energy efficiency measures through advice, education and promotion.</p>	<p>Reduced air quality impacts from private homes</p>	<p>Med</p>	<p>Cost: Low Impact: Low Cost effectiveness √√</p>	<p>Heath & Housing Services</p>	<p>Continuous</p>	
<p>ACTION 24: The Council will encourage renewable energy schemes, such as passive and active solar schemes and small scale wind power by;</p> <p>a) Encouraging new developments to be designed in such a way as to maximise the potential for passive solar energy and natural ventilation and, where</p>	<p>Reduced air quality impacts from development</p>	<p>Low/ Med</p>	<p>Cost: Med Impact: Low Cost effectiveness √</p>	<p>Planning Policy Development Control Health & Housing Services</p>	<p>From 2006</p>	

<p>practicable, to accommodate future installations of solar panels;</p> <p>b) Supporting innovative proposals and demonstration schemes;</p> <p>c) Providing advice on available grants for renewable energy</p> <p>Providing there is no unacceptable impact on the environment or residential amenity.</p>					
<p>ACTION 25: The Council will expect a high standard of design and layout in development proposals. Layout, access and movement will be taken into account when considering planning applications for development.</p>	Reduced air quality impacts from development	Low/ Med	Cost: Med Impact: Low Cost effectiveness √	Planning Policy Development Control Heath & Housing Services	From 2006
<p>ACTION 26: The Council will promote mixed-use development, particularly in town centres.</p>	Reduced air quality impacts from development	Med	Cost: Med Impact: Med Cost effectiveness √√	Planning Policy Development Control Heath & Housing Services	From 2006
<p>ACTION 27: The Council will favour proposals for employment-generating developments in suitable locations with good access by modes of travel other than the private car.</p>	Reduced air quality impacts from development	Med	Cost: Med Impact: Med Cost effectiveness √√	Planning Policy Development Control Heath & Housing Services	From 2006
<p>ACTION 28: The Council will encourage development with good accessibility for those using public transport, cycling or walking. Access for users of</p>	Reduced air quality impacts from development	Med	Cost: Med Impact: Med Cost effectiveness	Planning Policy	From 2006

non-car modes will be encouraged above access for car users, except that, in all cases, ease of access for people with disabilities will be given the highest priority.	ent		√√	Development Control Heath & Housing Services	
ACTION 29: The Council will continue to regulate the authorised processes under the Pollution Prevention and Control Regulations 2000 requiring operators to use Best Available Techniques to control the emissions of prescribed substances. The DEFRA recommended risk based inspection scheme will be operated to monitor compliance.	Reduced air pollution from industry	Med	Cost: Med Impact: Med Cost effectiveness √√	Heath & Housing Service	From 2006
ACTION 30: The Council will encourage reduced vehicle trips to the development site, measures to prevent dust entrainment during material transport and storage and facilities to prevent mud leaving the site.	Reduced air pollution from construction and demolition	Med	Cost: Med Impact: Med Cost effectiveness √√	Planning Policy Development Control Heath & Housing Services	From 2006
ACTION 31: Information obtained from the real time monitoring of air quality at Tatling End will be made available on the Council website and through an Air Quality Bulletin produced in each edition of South Bucks Report.	Increased awareness of air quality issues	Med	Cost: Low Impact: Low Cost effectiveness √√	Heath & Housing Services	By end 2006
ACTION 32: Information obtained from the nitrogen dioxide and benzene tube network will be made available on the Council website and through an Air Quality Bulletin produced in each edition of South Bucks Report.	Reduced air quality impacts from development	Med	Cost: Low Impact: Low Cost effectiveness √√	Health & Housing Services	By End 2006
ACTION 33: The Council will produce leaflets for MOT testing stations in the District to distribute with MOT certificates,	Increased awareness of the need for	Med	Cost: Low Impact: Low Cost effectiveness	Health & Housing Services	By end 2006

emphasising the need for regular car maintenance.	regular car maintenance		√√		
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¹ Cost Effectiveness

Cost effectiveness has been determined via an assessment of cost implications to South Bucks District Council, Bucks County Council, residents and businesses operating in South Buckinghamshire, and not regional or national costs. Some actions may be low cost at a local level but may relate to high regional or national costs. All impacts are assessed on air quality improvements within South Buckinghamshire. The impacts may also include regional and national air quality improvements but these impacts are not included in the assessment of cost effectiveness.

Costs effectiveness calculations

Costs

Scale	Actual cost	Score (C)
Low	< £10,000	√√
Med	£10,001 - £100,000	√
High	> £100,001	

Impacts

Scale	Actual impact	Score (I)
Low	No measurable reduction in nitrogen dioxide emissions	
Med	Potential/limited measurable reductions in nitrogen dioxide emissions	√
High	Significant measurable reductions in nitrogen dioxide emissions	√√

Cost effectiveness scale



Appendix 2. Action from Draft Bucks and Milton Keynes Air Quality Strategy

Action	Cost Effectiveness	Organisation Responsible	Positive affect on people in Bucks	Date to be achieved	AQ Improvement	Other positive impacts?
The Bucks Air Quality Management Group recognises that climate change and ozone depletion are likely to be key drivers of change within our society, and will support all initiatives aimed at addressing these issues.	√√√√√	DC BCC MKC	√√√	Report on initiatives undertaken end 2007	Positive impact on climate change pollutants	CO ₂ Reduction
Ensure air quality is a material consideration in the determination of planning applications	√√√√√	DC BCC MKC	√√√√	Ongoing	Positive & preventative measure	Noise
Incorporate air quality measures into Local Transport Plans	√√√√√	DC BCC MKC	√√√√	Local Transport Plans to be implemented 2006	Positive & preventative measure	Noise Reduced congestion
Traffic reduction by improving infrastructure	√√√√	DC BCC MKC	√√√√	Report on traffic counts end 2007	Positive impact across Bucks	Improved accessibility Reduced congestion
Roadside vehicle emissions testing	√√	DC BCC MKC	√√√	Decision to be made by end 2006	Positive and preventative measure Improve air quality awareness	CO ₂ Reduction
Fixed penalty to stationary vehicles with engines running	√√√	DC MKC	√√	Powers to be adopted by end 05	Positive and preventative measure	CO ₂ Reduction Noise
Signs to cut engines while you wait	√√√√√	DC BCC MKC	√√√√√	Additional locations to be added by the end 2007	Positive impact across Bucks	CO ₂ Reduction Noise
Targeting smoky vehicles by reporting them to the Government's Vehicle Inspectorate	√√√√√	DC BCC MKC	√√√√√	Ongoing	Positive impact across Bucks	CO ₂ Reduction
Promote vehicle emission watch leaflets	√√√√√	DC BCC MKC	√√√√√	End 05	Positive impact across Bucks	CO ₂ Reduction

Review parking controls- discourage non-essential car travel to town centres	√√√	DC BCC MKC	√√√	Ongoing	Positive impact across Bucks	Safety Noise
Provide advice, encouragement and support to local businesses in the development of travel plans	√√√√√	DC BCC MKC	√√√√√	Ongoing	Positive impact across Bucks	Safety Accessibility
Continue work on implementing travel reduction measures for council staff	√√√√√	DC BCC MKC	√√√√√	Ongoing	Positive impact across Bucks	Improved work efficiency
Encourage flexible and home working to reduce the number of journeys to the work place	√√√√	DC BCC MKC	√√√	Ongoing	Positive impact across Bucks	Improved work efficiency
Completion of individual District Travel Plans	√√√√√	DC MKC	√√√	End 06	Positive impact across Bucks	Accessibility
Promoting more sustainable transport choices for people and moving freight	√√√√√	DC BCC MKC	√√√	Ongoing	Positive impact across Bucks	CO ₂ Reduction
Promote accessibility to jobs, shopping, leisure facilities and services by public transport, walking and cycling	√√√√√	DC BCC MKC	√√√√√	Ongoing	Positive impact across Bucks	Improved awareness of accessibility Reduced congestion
Reduce the need to travel especially by car	√√√√	DC BCC MKC	√√√√	Ongoing	Positive impact across Bucks	Improved accessibility Reduced congestion
Regulate emissions from Industrial processes	√√√√√	DC MKC	√√√√√	PPC Permits to be issued for all industrial installations covered by regime by end 2007	Positive and preventative measure	CO ₂ Reduction Noise Odour
Continue support for the County Council's Safer Routes to Schools Scheme	√√√√√	DC CC	√√√√√	Ongoing	Positive Peak congestion improvement	Safety Health Reduced congestion
Continue to support Bucks Car share and CARSHAREMK	√√√√	Bucks Car Share/ CARSHAREMK	√√√	Ongoing	Positive impact across Bucks	Reduced travel cost

Continue to encourage the formation of Travel Groups involved in the marketing and promotion of sustainable public transport	√√√√√	DC BCC MKC	√√√√√	Ongoing	Positive impact across Bucks	Economic
Develop a Freight Quality Partnership with the Freight Transport Association	√√√√√	DC BCC MKC	√√√√√	End 06	Positive impact across Bucks	Safety Noise
Promote cleaner fuels for example the use of LPG vehicles	√√√√√	DC BCC MKC	√√√√√	Ongoing	Positive impact across Bucks	Economic
Develop partnerships with businesses and major fleet operators to encourage the use of cleaner fuels	√√√√√	DC BCC MKC	√√√√	Ongoing	Positive impact across Bucks	CO ₂ Reduction
Encourage local companies to consider using cleaner fuels technology	√√√√√	DC BCC MKC	√√√√	Ongoing	Positive impact across Bucks	CO ₂ Reduction
Encourage the adoption of a council wide policy of replacing existing fleet with "greener" vehicles	√√√	DC BCC MKC	√ But sets a good example	Ongoing	Minimal small fleet	Reduced running costs
Seek to improve the availability of cleaner fuels at service stations	√√√√√	DC BCC MKC	Indirect	Ongoing	Indirect positive	Increased fuel choice
Review Buckinghamshire for gaps in the alternative refuelling infrastructure	√√√√√	DC BCC MKC	Indirect	End 06	Indirect	None
Increase the use of public transport by offering discounts on bus and train fares to council staff and in some circumstances the public	√√√√√	DC BCC MKC	√√√√√	Ongoing	Positive impact across Bucks	Reduced travel cost
Continue to support Bus Quality Partnerships	√√√√√	DC BCC MKC	Indirect	Ongoing	Indirect positive	Improved accessibility

with the aim to negotiate improved bus service packages						
Offer a reduction of 25% in Private Hire and Hackney Carriage vehicle licence fees upon conversion to LPG fuel	√√√	DC BCC MKC	Indirect	End 07	Positive impact across Bucks	Setting a good example
Review major Transport Hubs and identify barriers to use	√√√	DC BCC MKC	√√√√√	End 06	Indirect positive	Improved accessibility
Continue to promote walking and cycling by supporting the Southern Buckingham Pilot Walking Project	√√√√√	PCT DC BCC MKC	√√	Ongoing	Small but positive	Health Leisure
Work closely with County Councils who are responsible for implementing the cycling strategy by expanding the cycling route network	√√√√√	DC BCC MKC PCT	√√	Ongoing	Small but positive	Health Leisure
Work closely with "Sustrans" in bringing forward initiatives at the local area	√√√√√	DC BCC MKC	√√	Ongoing	Small but positive	Health Leisure
Give cycling routes due consideration during the planning phase for road and major development areas	√√√	DC BCC MKC	√√√	Ongoing	Positive impact across Bucks	Safety Health Leisure
Regulate emissions from Industrial processes	√√√√√	DC BCC MKC	√√√√√	PPC Permits to be issued for all industrial installations covered by regime by end 2007	Positive and preventative measure	CO ₂ Reduction Noise Odour
Prohibit dark smoke from industrial or trade premises	√√√√√	DC BCC MKC	√√√√√	Ongoing	Positive impact across Bucks	CO ₂ Reduction
Require notification of installation of	√√√√√	DC BCC MKC	√√√√	Ongoing	Positive impact across Bucks	CO ₂ Reduction

industrial furnaces						
Approve chimney heights of certain installations	√√√√√	DC BCC MKC	√√√√√	Ongoing	Positive impact across Bucks	Odour
Make smoke controlled orders allowing domestic premises with open fires to burn only smokeless fuels unless on an exempted fireplace	√√√	DC BCC MKC	√√√√	Review Smoke Control Areas by end 06	Positive impact across Bucks	Odour
Serve abatement notices where the enforcing authority is satisfied that a statutory nuisance exists from smoke, fumes, gas, dust and odours	√√√√√	DC BCC MKC	√√√√	Ongoing	Positive impact across Bucks	Odour Dust Nuisance
Improve energy efficiency by 30% from 1996 by 2010	√√√	DC MKC	√√√√	2010 Annual reporting (Sept)	Small but positive	CO ₂ Reduction Energy savings
Promote Affordable Warmth Strategies in order to improve energy efficiency standards in housing stock	√√√√√	DC MKC	√√√	Ongoing	Small but positive	CO ₂ Reduction Energy savings
Continue to support Best Practice Guide for developers on sustainable design for buildings and the wider environment	√√√√√	DC MKC	√√√	Ongoing	Small but positive	CO ₂ Reduction Energy savings
Continue to support Decent Homes where energy efficiency is an integral part of the national initiative aimed at improving housing standards	√√√√√	DC MKC	√√√	Ongoing	Small but positive	CO ₂ Reduction Energy savings
Undertake a Strategic Environmental Assessment when preparing Local Plans and	√√√√√	DC MKC	√√	Ongoing	Small but positive	Setting a good example

Local Transport Plans						
Continued consideration given to air quality issues in relation to the development of Environmental Management Systems and Environmental Policies	√√√√	DC MKC	√√	Ongoing	Small but positive	Setting a good example
Promote Air Quality by creating a useful website	√√√√√	DC MKC	√√	Ongoing	Small but positive	Education
Increase public awareness of local air quality / pollution issues	√√√√√	DC MKC	√√	Ongoing	Small but positive	Education
Forge partnerships within the county	√√√√√	DC MKC CC PCT	√√	Ongoing	Small but positive	Information exchange Partnership working
Identify deficiencies in the air quality regimes within Bucks as a whole	√√√√√	DC MKC CC PCT	√√√	Ongoing	Small but positive	None
Provide a database for current and historical air quality monitoring for all interested parties	√√√√√	DC MKC	√√√	Ongoing	Small but positive	Information exchange
Provide a teaching aid for educational establishments	√√√√√	DC MKC	√√√	Ongoing	Small but positive	Information exchange
Promote the ideal of taking responsibility for our environment	√√√√√	DC MKC	√√√	Ongoing	Small but positive	Community participation

√√√√√
√√√
√

Most Positive
Medium
Less Positive

DC District Councils
MKC Milton Keynes Council
CC County Councils
PCT Primary Care Trust

Draft