



Produced by the
Bucks Air Quality Management Group



South Bucks
District Council

1.

SUMMARY



Clean air is an essential prerequisite for a good quality of life and people have the right to expect that the air they breathe will not harm them.

Air quality in the Buckinghamshire area is generally good, but there are still occasional unacceptably high levels of pollution originating mainly from vehicle emissions on busy roads. Consequently several Air Quality Management Areas have already been declared in the County, and more will inevitably follow.

This is the first air quality strategy for the region, and has been produced by the Bucks Air Quality Management Group, which consists of representatives from each of the District Councils, Milton Keynes Council, the County Council and the Strategic Health Authority.

The overall aim of the document is to set out how we can attempt to minimise the effects of air pollution on human health and the environment. The document also provides a framework for planning future action, especially with regard to Air Quality Management Areas and local transport planning.

This strategy will ensure that local air quality management is incorporated into the local transport planning process.

The pollutants considered include all of those detailed in the UK Government's National Air Quality Strategy:

- Nitrogen dioxide
- Particles
- Sulphur dioxide
- Carbon monoxide
- Benzene
- 1,3-butadiene
- Lead

Also considered are ozone and 'greenhouse' gases.

Indoor and in vehicle pollution are included in the strategy but it should be noted that, for practical reasons, they are very difficult to measure and regulate.

Although some local industries produce emissions to the air, local traffic is the major source of air pollution in the County.

BUCKINGHAMSHIRE and MILTON KEYNES
REGIONAL AIR QUALITY STRATEGY



The strategy document is divided into three main parts:

- A. The framework document**
- B. Local Air Quality Action Reports for each participating Authority.**
- C. A summary of all the actions that will be undertaken as a result of the strategy.**

NOTE: The Action Report and summary action table will be updated and reviewed approximately every 2 years.

A. Framework Document

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C. SUMMARY OF ACTIONS MATRIX

A summary grid showing all of the actions to be undertaken as a result of the strategy, with information on when and how they will be achieved.

2. Introduction

Clean air is an essential prerequisite for a good quality of life. People have the right to expect that the air they breathe will not harm them.



Levels of some pollutants have fallen significantly since, for example, the London smogs of the 1950s, and air quality in Buckinghamshire is generally good. However, there are still occasional unacceptably high levels of pollution that can harm human health and the environment.

Along with the right to clean air, we all have a responsibility to ensure that the air we breathe is as clean as possible. Individually and collectively, we can make a difference by making the right choices to minimise or prevent pollution.

In the last few years, as public awareness has increased, the importance of air quality has risen up the agenda both nationally and locally.

2.1 Legal perspective and Local Authority powers

In 1995 the UK Government published its strategic policy framework for air quality management, establishing national strategies and policies on air quality, which culminated in the Environment Act, 1995. As a requirement of the Act, the Secretary of State has subsequently prepared a National Air Quality Strategy (NAQS). The NAQS provides a framework for air quality control through air quality management and standards. The Expert Panel on Air Quality Standards (EPAQS) has proposed new national air quality standards for the UK Government. These new standards and objectives have been enacted through the Air Quality Regulations in December 1997 and last amended in 2002.

The Environment Act requires Local Authorities to undertake a programme of air quality review and assessments and operate a regime known as Local Air Quality Management (LAQM). In areas where air quality objectives are not expected to be met by the target date, Local Authorities are required to establish Air Quality Management Areas (AQMAs) in accordance with Section 83 (1) of the Act. Under Section 84 (2) of the Act, air quality Action Plans can be implemented. Action Plans may also be integrated into Local Transport Plans in accordance with recent Government guidance.

2.2 Current position in England & Wales

There are 187 Local Authorities in England and Wales that have designated AQMAs (as of March 2006), mainly in respect of the objectives for nitrogen dioxide and particles (PM₁₀). Road traffic emissions are the main source in 95% of the AQMAs. Only a handful has been designated as a result of industrial sources.

2.3 Current position in Buckinghamshire

Buckinghamshire is a County in south-east England, adjacent to London, but predominantly rural in character. Bucks County Council is the upper tier local authority and covers the districts of Aylesbury Vale, Chiltern, South Bucks and Wycombe. Milton Keynes is part of the historic County of Buckinghamshire, but is a separate Unitary Authority for the purposes of local government.

Wycombe, South Bucks and Aylesbury Vale District Councils have declared AQMAs. Chiltern District Council is undertaking further monitoring and Milton Keynes Council has shown that there is no current need for an AQMA. However, this situation will inevitably evolve as further reviews and assessments are undertaken.

Please refer to the Air Quality Strategy Action Report, which supplements the main strategy document.

2.4 District, County and Unitary Authority Strategic Objectives



This County-wide air quality strategy is being produced on behalf of the Bucks Air Quality Management Group (BAQMG), which consists of representatives from each of the District Councils, Milton Keynes Council, Bucks County Council and the Strategic Health Authority/Primary Care Trust.

BAQMG feeds into the Regional 'Thames Valley Environmental Protection Advisory Group' (TVEPAG) providing a direct link to the Office of the Deputy Prime Minister (ODPM) and the Department for Environment, Food and Rural Affairs (DEFRA). This allows us to keep abreast of the latest national and regional information on air quality issues and the environment.

Although Local Authorities are under no statutory obligation to prepare an air quality strategy, such initiatives can play a significant role in protecting the local environment.

The document describes the plans or actions drawn up by the participating organisations to improve and protect ambient air quality in the County. 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 concept of a Sustainable Community that includes:

- Social progress that meets the needs of everyone.
- Effective protection of human health and the environment.
- Maintenance of high and stable levels of economic growth and employment.

Although Local Authorities will play a key role, the success of the strategy will depend on partnerships within Local Government, local businesses, industry, community groups and by everyone 'doing their bit'.



Springtime in Buckinghamshire

3. Aims and Objectives

3.1 Aims of the strategy

The overall aim of the strategy is to attempt to minimise the effects of air pollution on human health and the environment. This document provides a framework for future action planning (especially with regard to Air Quality Management Areas) and details the group's proposals to:

- Improve air quality in Milton Keynes and Buckinghamshire.
- Work towards reducing pollutants with an aim of achieving standards set under the National Air Quality Strategy.
- Ensure a uniform approach towards air quality management across Buckinghamshire and Milton Keynes.
- Continue to inform and provide up to date information on air quality within the County.
- Ensure that all Council activities are considered with reference to their impact on air quality.
- To support and push forward national initiatives that can improve air quality.

3.2 Main objectives

- Emphasise the group's role in delivering cleaner air and, by setting an example, lead others to do the same.
- Raise the profile of air quality and keep it high on the local agenda.
- Help authorities to deal with air quality in a corporate and multi-disciplinary way by taking air quality considerations fully into account in all their wider policy areas such as land use planning, transport planning, energy efficiency, waste management, economic development and regeneration.
- Remind the local community of the main reasons for tackling air quality and of each individual's responsibility for minimising emissions to atmosphere i.e. "doing your own bit".
- Help build partnerships with neighbouring authorities, local businesses, industry and the community.
- Provide a framework to help ensure that Air Quality Objectives continue to be met in the long term (See Figure 1).

- Ensure local air quality management is incorporated into local transport planning, in particular the Local Transport Plan (2006/7 to 2010/11).

3.3. Local Air Quality Management Objectives

Pollutant	Air Quality Objective		Date to be achieved by	Air quality objective achieved Yes/No?
	Concentration	Measured as		
Benzene	16.25 µg/m ³	running annual mean	31.12.2003	Yes
	5.00 µg/m ³	annual mean	31.12.2010	Expected to be achieved
1,3-butadiene	2.25 µg/m ³	running annual mean	31.12.2003	Yes
Carbon monoxide	10 mg/m ³	max daily 8-hour running mean	31.12.2003	Yes
Lead	0.5 µg/m ³	annual mean	31.12.2004	Yes
	0.25 µg/m ³	annual mean	31.12.2008	Expected to be achieved
Nitrogen dioxide	200 µg/m ³ not to be exceeded more than 18 times a year	1-hour mean	31.12.2005	Yes
	40 µg/m ³	annual mean	31.12.2005	No, at several traffic hot-spots.
Sulphur dioxide	350 µg/m ³ not to be exceeded more than 24 times a year	1-hour mean	31.12.2004	Yes
	125 µg/m ³ not to be exceeded more than 3 times a year	24-hour mean	31.12.2004	Yes
	266 µg/m ³ not to be exceeded more than 35 times a year	15-minute mean	31.12.2005	Yes
Particles (PM₁₀)	50 µg/m ³ not to be exceeded more than 24 times a year	24-hour mean	31.12.2004	Yes
	40 µg/m ³	annual mean	31.12.2004	Yes

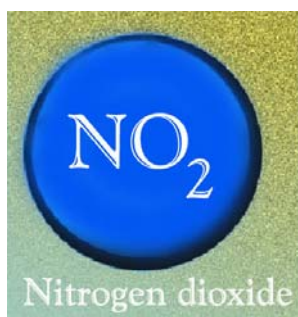
4. Pollutants considered

Local industry is one source of pollution, but it has been clearly demonstrated throughout the Air Quality Review and Assessment Programmes that vehicle emissions are the major source of air pollution in Buckinghamshire.

The following pollutants are detailed because they are included in the Government's National Air Quality Strategy:

4.1 Nitrogen dioxide

Nitrogen dioxide is a gas produced by the reaction of nitrogen and oxygen. All combustion processes in air produce oxides of nitrogen in the form of nitrogen dioxide (NO₂) and nitric oxide (NO), collectively referred to as NO_x.



Road transport is thought to account for about 50% of the total UK emissions, and industrial processes, including energy production, about 37%.

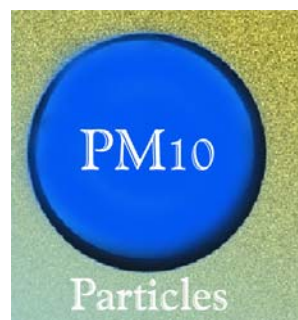
At relatively high concentrations, nitrogen dioxide causes inflammation of the airways. There is evidence to show that long-term exposure may affect lung function and that exposure enhances the response to allergens in sensitised individuals.

In Buckinghamshire it is the air pollutant of most concern, associated with our busiest roads.

4.2 Particles

PM₁₀ particles are particulate matter suspended in the air, with a diameter of less than 10 microns (see technical glossary).

They 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 with other pollutants in the air.



Associations between particle levels and a range of health outcomes have been identified. These include decreases in lung function, increases in respiratory symptoms and exacerbation of asthma. 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.

Although it can be a problem associated with busy roads, in Buckinghamshire monitoring and modelling shows that levels of particles currently meet national air quality standards at locations where public exposure may occur.

4.3 Carbon monoxide

Carbon monoxide (CO) is a colourless gas formed by the incomplete combustion of carbon containing fuels.



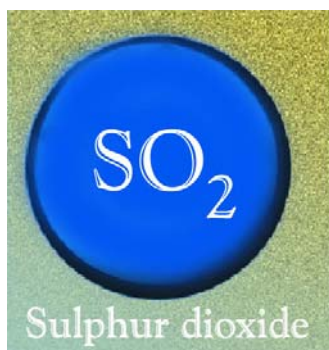
The main outdoor source is road transport, in particular petrol-engine vehicles, responsible for about 90% of CO in urban areas. It is well known as a poisonous gas, acting by combining with the haemoglobin in red blood cells, and so reducing the oxygen carrying capacity of the blood.

At levels below those that are lethal, this reduction in oxygen-carrying capacity can precipitate angina in those susceptible and reduce mental performance, resulting in confusion and reduced co-ordination.

In our region, monitoring and modelling shows that carbon monoxide levels currently meet national air quality standards at locations where public exposure may occur.

4.4 Sulphur dioxide

Sulphur dioxide (SO₂) is a colourless gas produced by the burning of sulphur compounds, which are a natural constituent of coal and oil. Therefore, power generation is the major source in the UK.



Historically SO₂ has long been of concern and was involved in the deaths and ill health seen in the London smogs of the 1950s and 1960s. Since then, however, emissions have been significantly reduced through legislative measures.

Sulphur dioxide causes constriction of the airways by stimulating nerves in the lining of the nose, throat and lungs. It also can affect plants at much lower levels in the air. As it is acidic, it corrodes stonework and other materials.

In our region, monitoring and modelling shows that sulphur dioxide levels currently meet national air quality standards at locations where public exposure may occur.

4.5 Benzene



Benzene is a chemical compound of carbon and hydrogen and is a colourless clear liquid at ambient temperatures. It readily evaporates and is highly flammable.

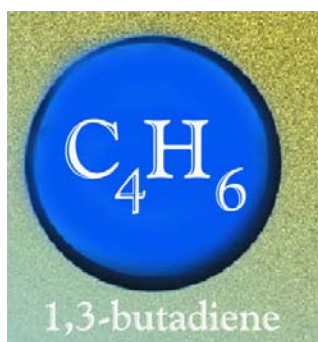
In the UK the main sources of benzene in the air are the distribution and combustion of petrol. About 70% of benzene emissions originate from petrol vehicle exhaust gases and most of the remainder from fuel evaporation during refuelling.

Benzene has the potential to cause cancer in humans. Occupational studies have shown that long-term exposure to significant concentrations may be associated with leukaemia.

In our region monitoring and modelling shows that benzene currently meets national air quality standards at locations where public exposure may occur.

4.6 1,3-butadiene

This is a hydrocarbon gas at ambient temperature and is formed during the combustion of petrol and diesel fuel. 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.

In our region monitoring and modelling shows that 1,3-butadiene currently meets national air quality standards at locations where public exposure may occur.

4.7 Lead

Lead is a widely used non-ferrous metal both in its pure form and in alloys and compounds. However, with the phasing out of leaded petrol, levels of this pollutant associated with vehicle emissions have become insignificant.



Although not purely an air pollutant, inhalation and ingestion of airborne lead and its fallout are important potential sources of exposure to this toxic substance. Exposure may occur through food, water, dust, soil and air.

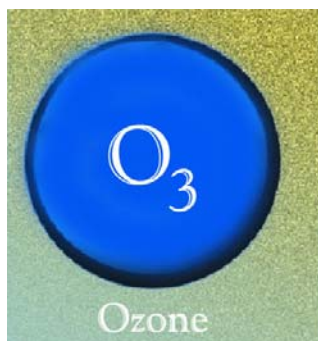
Lead can damage a range of biochemical systems in humans including haemoglobin production, the nervous system and the kidneys, Children are particularly sensitive and high blood levels have been linked to behavioural problems and lower IQs.

In our region monitoring and modelling shows that lead currently meets national air quality standards at locations where public exposure may occur.

Of all the pollutants covered in this strategy, it is currently expected that Buckinghamshire will meet the national objectives for each of the pollutants, with the exception of nitrogen dioxide from vehicle emissions at some traffic hotspots.

4.8 Ozone

Although included in the National Air Quality Strategy, because of its trans-boundary nature and its origin as a 'secondary pollutant', it is not included in the local air quality management regime.



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 primarily on 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 asthmatic people.

Ozone is recognised as a pollutant of concern when it reaches elevated levels. Ozone is, however, not addressed specifically on a local level as it is considered at a national and international level.

For more detailed information on air pollutants you can visit:
www.bucksairquality.net.

Also the UK National Air Quality Archive at:
<http://www.airquality.co.uk/archive/index.php>

Information about the medical effects of air pollution:
<http://www.advisorybodies.doh.gov.uk/comeap/>

5. Climate change and indoor air quality

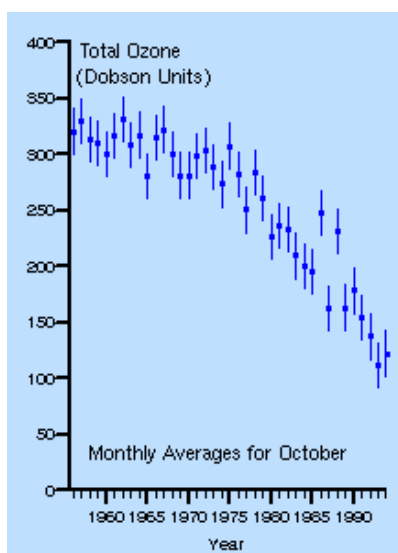
5.1 Topography and weather influence on air quality

Air quality also varies to some extent depending upon the time of year, the weather conditions and topography of the land.

The following table is a simple guide to where and when general air pollution may be expected to be lower or higher:

Higher pollution	Lower pollution
Cities/towns in valleys	Cities/towns on hills
In summer, during sunny, still weather, particularly ozone in suburban and rural areas	Windy or wet weather at any time of year
In winter, in cold, still foggy weather, particularly vehicle pollutants in large cities	Rural areas away from major roads and factories (for most pollutants except ozone)
Busy roads with heavy traffic next to high buildings and busy road junctions	Residential roads with light traffic
High levels of solid fuel, e.g. coal and wood, used for heating in the local area	Smoke control area or areas with high levels of gas or electric used for heating

5.2 Stratospheric ozone layer



There is unequivocal evidence that stratospheric ozone depletion is being caused by man-made emissions of chlorine and bromine-containing substances such as chlorofluorocarbons (CFCs) and halons. These are emitted as a result of their use in a variety of applications such as spray can propellants, refrigerants, foam-blowing agents and in fire extinguishers. Hydro-CFCs, which are similar to CFCs but have a lower potential for depleting ozone can be used as transitional replacements in many sectors.

Chemically initiated ozone depletion in the Antarctic occurs each winter and spring and in recent years the ozone hole has covered an area equivalent to the United States of America.

Figure 5.1 Total ozone above Halley Research Station Antarctica.

(Source: University of Cambridge Centre for Atmospheric Science. <http://www.atm.ch.cam.ac.uk/tour/part2.html>)

International agreement to limit the production and consumption of ozone depleting substances was reached in 1987 through the “Montreal Protocol on Substances that Deplete the Ozone Layer”. The provisions have been strengthened a number of times since 1987, most recently in November 1999 (Beijing Amendment), and the provisions of EC Regulation 2037/00 on “Substances that Deplete the Ozone Layer”. The new EC Regulation was introduced in 2000 to take account of the tighter controls introduced for HCFCs and methyl bromide by the Protocol in 1995 and 1997.

The Montreal Protocol has led to substantial reductions in the production and consumption of ozone depleting substances since the mid 1980s, but progress must be continued.

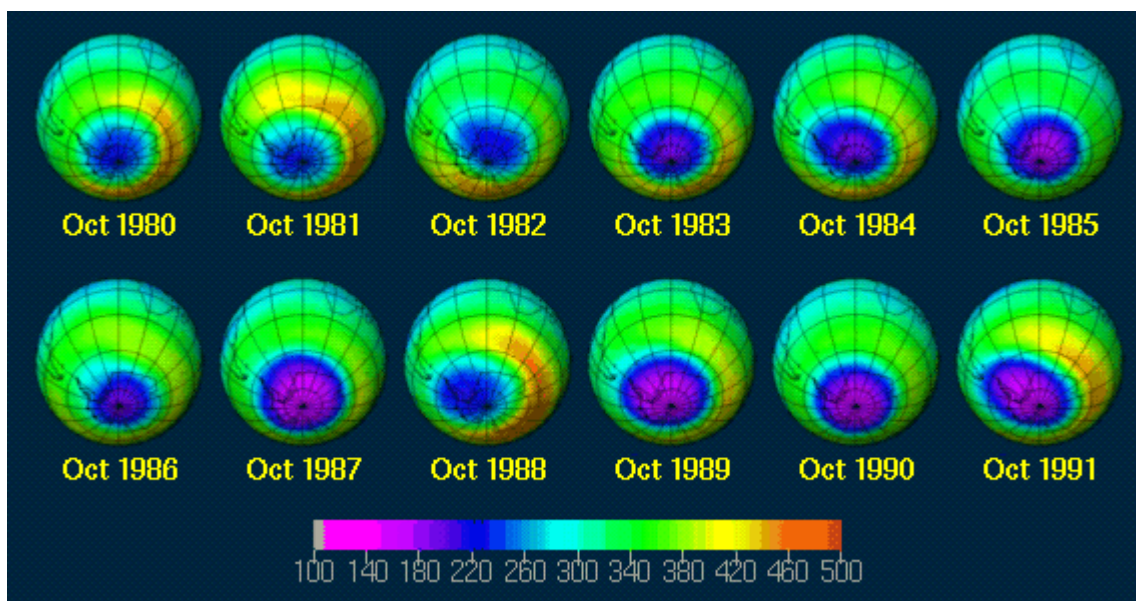


Figure 5.2 The ‘ozone hole’ over the Antarctic. Blue areas are low in ozone

(Source: University of Cambridge Centre for Atmospheric Science. <http://www.atm.ch.cam.ac.uk/tour/part2.html>)

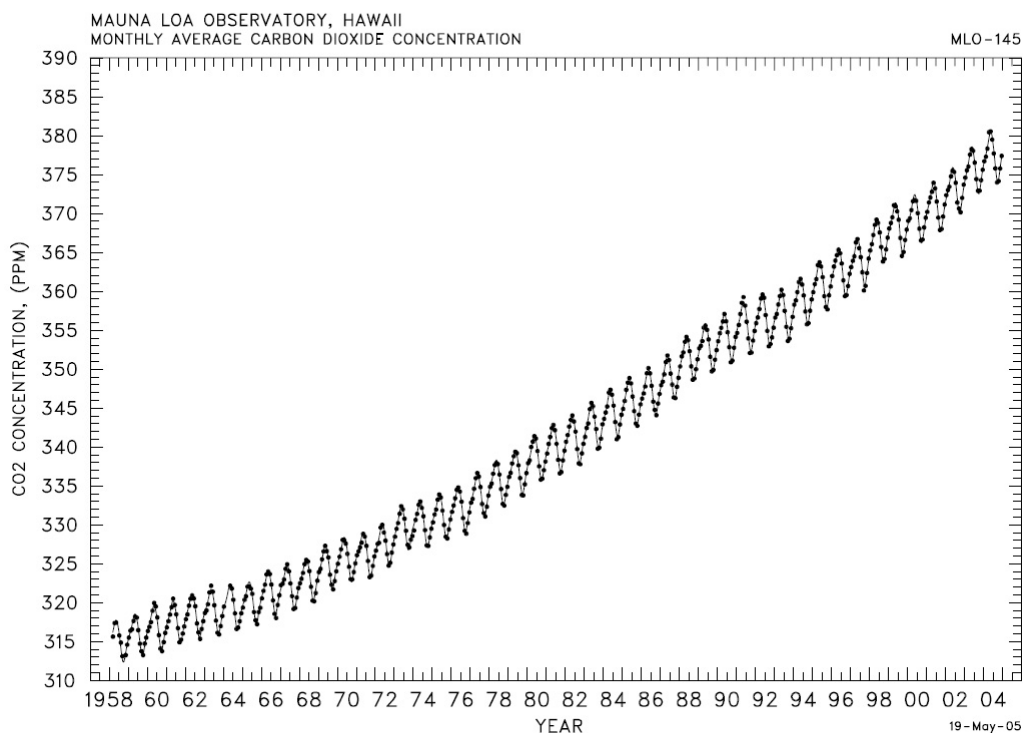
5.3 How can ozone be both good and bad?

Ozone occurs in two layers of the atmosphere. The layer surrounding the earth's surface is the troposphere. Here, ground level or "bad" ozone is an air pollutant that damages human health, vegetation, and many common materials. It is a key ingredient of urban smog.

The troposphere extends to a level about 15 kilometres up, where it meets the second layer, the stratosphere. The stratospheric or "good" ozone layer extends upward from about 15 to 40 kilometres and protects life on earth from the sun's harmful ultraviolet rays (UV-b). Summer weather forecasts include a ‘sun index’ (a measure of ultraviolet level) so people can limit their sun exposure.

5.4 Climate change: greenhouse gases, global warming and ozone depletion

The Earth's climate is changing. Scientific evidence shows that 'greenhouse gas' levels in the atmosphere are increasing and having a noticeable effect on the earth's climate (see Figures 5.1 and 5.2).



(Source: http://cdiac.ornl.gov/trends/co2/graphics/mlo145e_thrudc04.pdf)

Figure 5.3 Monthly average carbon dioxide concentration in the air 1950's to 2005 at Mauna Loa Observatory Hawaii.

Globally, the ten hottest years on record have all occurred since the beginning of the 1990s (Figure 5.2). Current climate models predict that global temperatures may rise between 1.4 to 5.8 °C over the next 100 years, depending on the amounts of greenhouse gases in the atmosphere and the sensitivity of the climate system.

The social, environmental and economic costs associated with climate change could be huge. How does it happen and can we do anything to influence this climate change?

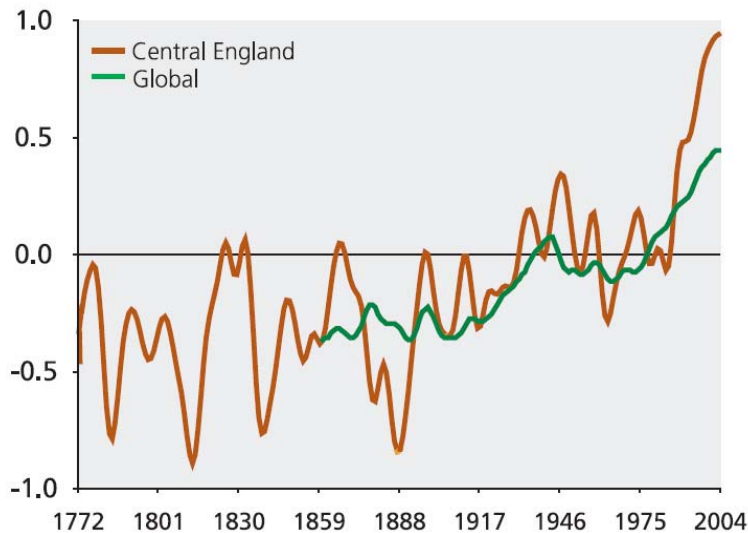
'Greenhouse gases' are gaseous components of the atmosphere that contribute to the 'greenhouse effect'. The main natural greenhouse gases are water vapour (not including clouds), which contributes about 60% of the greenhouse effect, carbon dioxide, which contributes some 26% of the effect, and ozone, responsible for about 8% of the effect. Other greenhouse gases include methane, nitrous oxide, sulphur hexafluoride and chlorofluorocarbons (CFC's).

The 'greenhouse effect' refers to the fact that the surface of the earth is warmer than it otherwise would be without an atmosphere because it receives energy from two sources, the Sun and the atmosphere. Unfortunately the name 'greenhouse effect' is a misnomer, a greenhouse keeps the air warm by suppressing convection (keeping the wind out). The atmosphere does not act like a greenhouse; rather the atmosphere emits radiation because it has a finite temperature. Its temperature is stable as the atmosphere emits energy at the same rate as it absorbs it. In fact the surface of the Earth receives nearly twice as much energy from the atmosphere as it does from the Sun. Thus the atmosphere has a profound effect on the surface temperature of the Earth. Without an atmosphere, and the so-called 'greenhouse effect', the Earth's surface would be about 30 °C lower and life, as we know it, would be impossible.

Average surface temperature: 1772–2004

Global and Central England

Anomaly in degrees C (compared to 1961–1990 average)



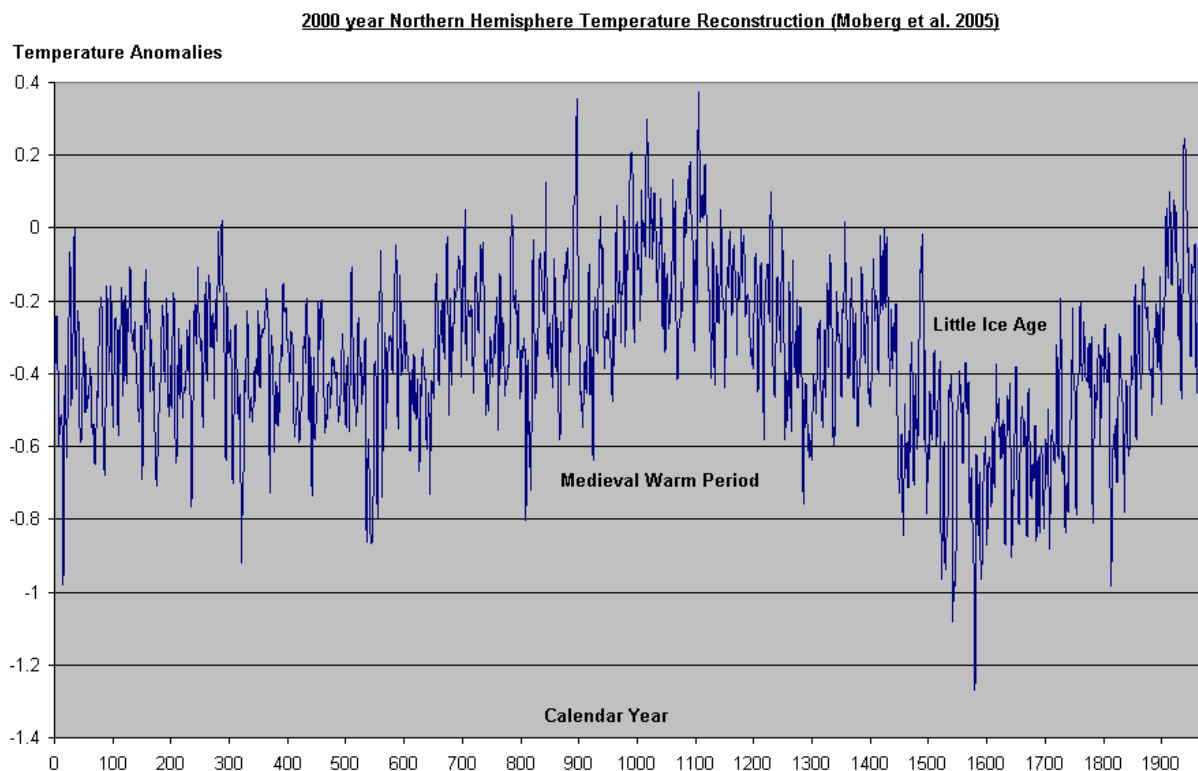
(Source: "The Environment in Your Pocket 2005", Crown Copyright).

Figure 5.4 Average surface temperatures from the 18th to the 21st century.

It is now widely believed that the magnitude of the 'greenhouse effect' is increasing due to the increase in 'greenhouse gases' in the atmosphere. This change is often referred to as 'global warming'. Part of this increase is due to human influence, burning fossil fuels for example; in part the increase is natural as the climate was becoming warmer long before the industrial revolution began (see Figure 5.3 increasing temperatures from a historic low in the 16th and 17th centuries to the present day).

The main human influence on the global climate is likely to be emissions of greenhouse gases such as carbon dioxide (CO₂) and methane. At present human activity causes the emission of about 6.5 gigatonnes (thousand million tonnes) of carbon globally each year, mostly through CO₂ from burning coal, oil and gas for

energy. Changes in land use (deforestation and soil cultivation) mean a further annual emission of about 2 gigatonnes of carbon (see Figure 5.4).



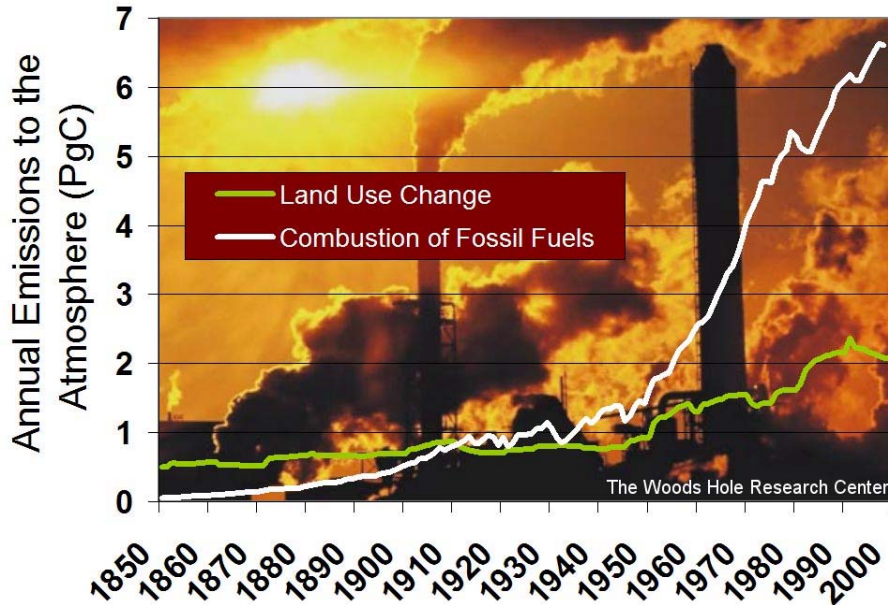
(Source of data: Moberg et al. 2005. Highly variable Northern Hemisphere temperatures reconstructed from low- and high-resolution proxy data. *Nature*, Vol. 433, No. 7026, pp. 613-617).

Figure 5.5 Reconstruction of northern hemisphere temperature variation over the last 2000 years. Note the 'Medieval Warm Period' of relatively high temperature, from about 900 to 1250, and the 'Little Ice Age' of relatively cool temperatures from about 1450 to 1900 showing the large natural variability in temperature. (The temperature scale is in temperature anomalies from the northern hemisphere annual mean temperature 1961 to 1990 average).

The only way in which we can reduce the rate of increase in global warming is to reduce our emissions of these 'greenhouse gases'.

The UK Government believes in the importance of taking domestic action to cut greenhouse gas emissions. Since 1997, the UK has been pressing ahead and introducing innovative policies that will have a significant impact in reducing emissions of 'greenhouse gases'.

The UK's Climate Change Programme was published in November 2000. It details how the UK plans to deliver its Kyoto target to cut its greenhouse gas emissions by 12.5%, and move towards its domestic goal to cut carbon dioxide emissions by 20% below 1990 levels by 2010.



(Source: www.whrc.org/carbon/landuse.htm).

Figure 5.6 Annual emissions of carbon to the atmosphere from combustion of fossil fuels and land use change (PgC is petagrammes, i.e. gigatonnes, of carbon). Woods Hole Research Center, 2004.

Action taken in the UK throughout the 1990s has significantly reduced greenhouse gas emissions. Central Government and the devolved administrations are continuing this positive approach with a substantial programme of integrated policies and measures to:

- Improve business use of energy, stimulate investment and cut costs.
- Stimulate new, more efficient sources of power generation.
- Cut emissions from the transport sector.
- Promote better energy efficiency in the domestic sector.
- Improve energy efficiency requirements of the Building Regulations.
- Continue the fall in emissions from agriculture and forestry.
- Ensure the public sector takes a leading role.

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.

5.5 Acid rain (acid deposition)

Rain is naturally acidic (pH c.5) as it contains dissolved carbon dioxide, which forms weak carbonic acid. The term “acid rain” is in widespread use to describe all forms of precipitation (rain, snow, hail, fog, etc.) that have a greater acidity (pH lower than 5) than natural rain. “Acid rain” is formed when industrial or transport emissions of gases such as sulphur dioxide, nitrogen oxides and hydrogen chloride, combine with water droplets in the atmosphere to form weak acids that increase the natural acidity of rain.

In the UK, most sulphur compounds are deposited down-wind from the area of highest man-made emissions, the English Midlands (Figure 5.5). Nitrogen compounds are deposited over a large area because large amounts of nitrogen oxides come from traffic. High deposits of both sulphur and nitrogen compounds are found where rainfall is highest, such as northern England and the Welsh hills.

Acid rain increases acidity in soils and water bodies, which is harmful to water life and vegetation. Acid rain accelerates the weathering of carbonate rocks, limestones, and building materials and can be particularly harmful to trees at higher elevations.

This acidification of water bodies has affected some salmon and trout fisheries in upland rivers and nearer home natterjack toads in parts of the south of England may have been lost due to the acidification of their spawning ponds.

However, acid rain may play a beneficial role in helping to curb global warming. Open University scientists have shown that sulphate deposition on wetlands significantly reduces the amount of methane produced by bacteria in wetland ecosystems (see <http://news.bbc.co.uk/1/hi/sci/tech/3528990.stm>).

5.6 How is acid and acid rain deposited?

Acidic pollutants can be deposited in three different ways:

- **Wet deposition** - pollutants are deposited in rain and snow (commonly termed "acid rain"). This happens mainly in upland areas where rainfall is highest.
- **Dry deposition** – gases and particles are deposited directly onto the land. This is more common than wet deposition in many parts of the UK
- **Cloud deposition** – clouds can deposit acidic pollutants over high ground.

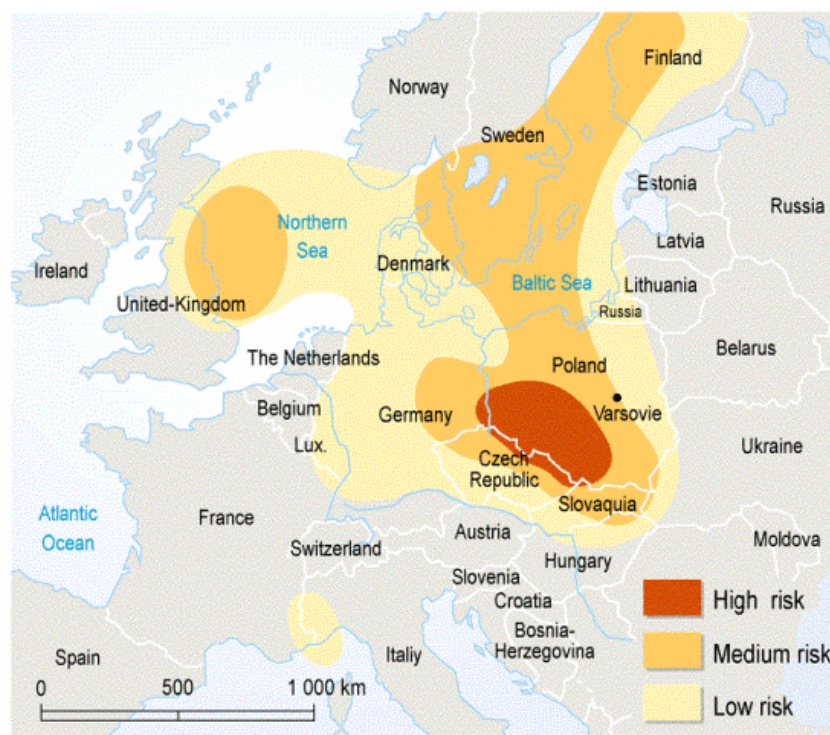
Sulphur dioxide and nitrogen oxides are relatively insoluble. This means that they might not combine with water in the air to make acid rain until they have travelled a long way from their source. For example, sulphur dioxide released into the air in the UK can be blown hundreds of kilometres away before it falls as acid rain on countries such as Norway, Sweden and Finland.

5.7 What are the current acidification levels?

Sulphur deposition levels have fallen in recent years. Sulphur dioxide emissions decreased by 75% from 1987 to 2003, which led to 78% less dry deposition and 61% less wet deposition (Source: Environment Agency 2005).

Sulphur levels have fallen because power stations have invested in technologies that remove sulphur from flue gases and use alternative, less sulphurous fuel sources such as natural gas. Also there are international agreements in place to reduce air pollutant emissions.

Through international protocols and the use of emission control technology introduced since the end of the 1980s, countries have witnessed reductions in acidic emissions from power stations and road vehicles. However, large parts of Europe are still at risk from acid deposition (see Figure 5.5).



(Source: http://maps.grida.no/go/graphic/acid_rain_in_europe)

Figure 5.7 Level of risk from acid deposition in Europe.

Note direct correlation with location of concentrations of industry and prevailing westerly wind direction.

It is only by reducing our dependence on fossil fuels and energy consumption that a long-term reduction in acid deposition can be maintained. However, individuals have little influence on how their energy is produced, for example by coal or gas fired power stations, or alternatively by wind or solar power. However, the individual does have control on how he or she uses that available energy.

Through the implementation of simple measures we can all effectively bring about a reduction in energy consumption, and help to reduce emissions that may produce more acid rain. For example, don't leave your computer and television on stand-by, switch them off and turn your central heating thermostat down. Using less energy also means you will make savings on your fuel bills.

5.8 Indoor air quality

Although this Strategy deals mainly with outdoor air pollution, as we spend about 90% of our time indoors, it is indoor air quality that has a greater effect on our health. Both outdoor air pollution levels and indoor sources affect air quality within buildings.

Indoor air pollutants include chemicals from a wide variety of sources, such as furnishings, gas cookers, gas and solid fuel fires, paints, glues, house dust mites and microbial organisms such as fungi and bacteria.

Indoor air quality also depends on a variety of factors, such as geography, climate, building construction, use of different fuels, methods of heating and cooking, external air pollution levels, activities of the occupants (such as DIY) and lifestyle factors, such as smoking. Central heating and hot water boilers, gas cookers and fires should all be checked regularly to ensure that they do not pose any potential risks.

Cigarette smoke is an obvious indoor air pollutant and also one of the most harmful. It gives rise to high levels of particles and many other toxic chemicals that are particularly harmful to any children living in households where there are smokers.

For information on how to stop smoking, please visit <http://www.csbpct.nhs.uk/>

5.9 Air quality in the workplace

By improving ventilation and buying tested materials (in terms of emissions potential), companies can help minimise staff exposure to pollutants.

Reducing moisture or dampness in the air can help to reduce microbial problems. People working in air-conditioned buildings have reported higher rates of sickness than those working in buildings that are naturally ventilated or that have mechanical systems of ventilation supplying ducted air without cooling or humidifying.

Companies should make sure that heating, ventilation and air conditioning systems are well maintained and if they have filters, that these are replaced regularly.

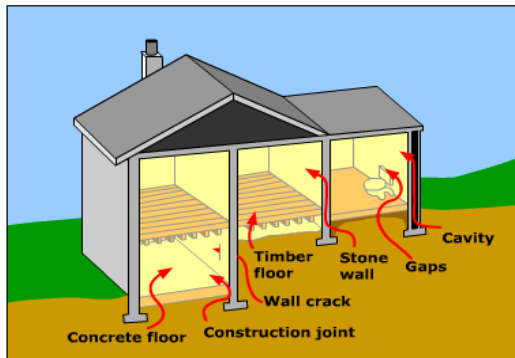
Photocopiers, printers and fax machines can be grouped away from workstations and their emissions removed by local extract ventilation. When not being used they should also be switched off which will reduce emissions and conserve energy.

The subject of indoor air quality is still evolving and the group will give due regard to any new legislation introduced.

5.10 Radon

Radon is a radioactive gas naturally formed in the earth, from the decay of radium, which forms from the decay of uranium and thorium. In the 1970s and early 1980s exposure to radon in the home was recognised as a health hazard for the first time. The levels of uranium and thorium, and hence the rate of production of radon, varies with rock type leading to considerable variation in radon levels across the country. Indoor radon levels also vary according to the season of the year (Figure 5.7).

The level of radon within a house will depend on its production from the underlying rock, the porosity of the rock and factors within the house itself, such as the amount of ventilation.



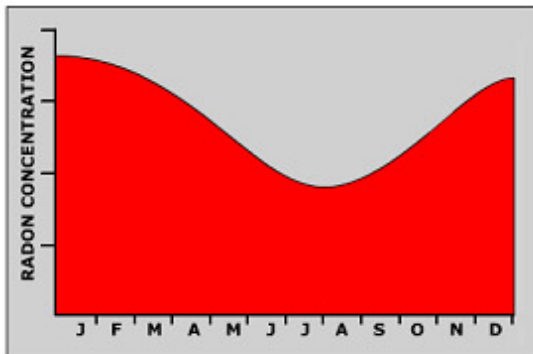
Radon gets into buildings from the ground in many ways.

Levels of radon may vary from house to house. Two houses next to each other can have very different levels of Radon.

It seems that smoking is an important co-factor in radon-related cancers. It has been suggested that the risk of lung cancer from radon is about 10 times greater in smokers than in non-smokers. Some studies suggest that smoking prevention could be a key factor in the control of radon and health effects.

Figure 5.8 Radon pathways into houses

As a **naturally occurring gas**, the release of radon cannot be prevented. However Building Regulations now ensure that new homes in the most affected areas are built to standards that significantly reduce the likelihood of high radon levels.



Radon levels indoor vary from season to season.

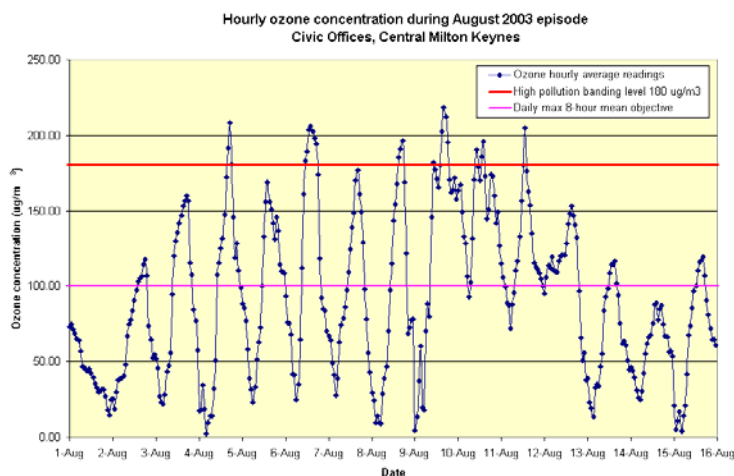
In Buckinghamshire, we are in a **LOW RISK AREA** with most areas of the County having negligible levels of radon. Testing kits and radon information leaflets are available from the Health Protection Agency

Figure 5.9 Variation of radon levels with Season.

(Radon Diagrams – Source Health Protection Agency 2005).

For more information on indoor air pollution or local Radon advice you can visit: www.bucksairquality.net
<http://www.hpa.org.uk/radiation/radon/index.htm>

6. Where to find information on air quality



Many people are concerned about air pollution and whether it might affect their health.

The fact is that most of the time, air pollution levels are low.

The air is certainly a lot cleaner today than in the days of the smogs of the

1950's, when factory chimneys belched out smoke and nearly everyone had a coal fire. But if you are concerned about daily levels of air pollution, there is a free and easy to use service that allows you to check levels in your area.

6.1 Air Pollution Information Service

Provided by DEFRA, up-to-the-minute information at your fingertips:

CEEFAX: pages 410-417; TELETEXT: page 106; Free phone: 0800 556677

- Concise easy to understand summaries.
- Regional forecasts.
- Detailed information on individual pollutants.
- Based on the latest medical and scientific research.
- Health advice.

This information can be particularly important to people with medical conditions which air pollution may make worse. It is detailed and easy-to-understand information on air pollution, completely free of charge.

6.2 Internet resources

The <http://www.bucksairquality.net/> site provides daily pollution levels for particles and nitrogen dioxide for quick reference and also will provide alerts for days of high ozone related episodes. The site also contains specially selected links to other air quality resources in the UK.

6.3 Monitoring results

There is a wide range of specific monitoring undertaken across Buckinghamshire. Results may be available to show yearly, monthly or daily levels and can be used to show trends.

7. Key Action Areas

The Bucks Air Quality Management Group has highlighted the following key areas where we may be able to influence and advance measures to improve air quality:



7.1 Planning

7.1.1 *Land use planning*

Air quality considerations must be integrated within the planning process at the earliest possible stage by having regard to all relevant Planning Policy Statements and Guidance.

These policy documents guide Planning Authorities and provide a mechanism for air quality issues to be considered.

- PPS 23 Planning and Pollution Control
- PPG 6 Town centres and Retail Developments
- PPS 11 Regional Spatial Strategies
- PPG 3 Housing
- PPG 4 Industrial and Commercial Development;
- PPG 13 Transport
- PPS 22 Renewable Energy

7.1.2 *Planning and pollution control*

Planning Policy Statement 23 (PPS 23) is the main planning document dealing 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.

7.2 Transport

7.2.1 *Transport planning*

Planning Policy Guidance 13 (PPG 13) on Transport is used to integrate planning and transport at the regional, strategic and local level by:

- Promoting more sustainable transport choices for both people and moving freight.
- Promoting accessibility to jobs, shopping, leisure facilities and services by public transport, walking and cycling.
- Reducing the need to travel by car by promoting other transport modes.

Before using your car, ask yourself:

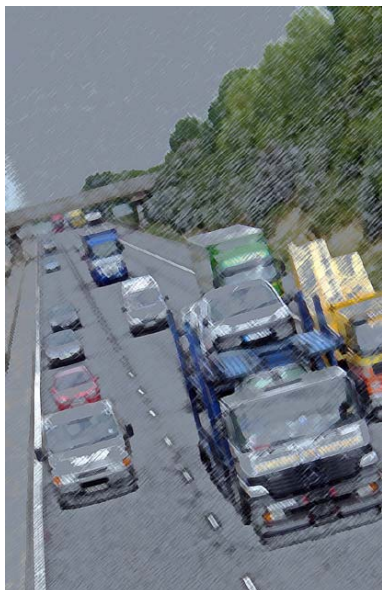
- Do I really need to make this journey?
- Could I walk or cycle instead of taking the car?
- Could I take a bus, taxi or train?
- Can I share a lift?

7.2.2 *New development plans*

Issues that should be considered in the preparation of development plans and assessment of individual planning applications include:

- Ensuring that the land use planning system makes an appropriate contribution to the achievement of National Air Quality Objectives.
- Use of any Supplementary Planning Guidance.
- Policies on the appropriate location for new development, reducing the need to travel and promoting public transport.
- Identifying land, or establishing criteria, for the location of potentially polluting developments and the availability of alternative sites.
- Separating potentially polluting and other land uses to reduce conflicts, e.g. by identifying areas around existing sources of air pollution (including roads) in which other developments should be carefully considered.
- Consideration of existing and likely future air quality in any area (including air quality management areas) where it is likely to be relatively poor.
- The findings of Air Quality Reviews and Assessments will be important in the consideration of local air pollution problems and the location of certain types of development.
- The requirements of air quality action plans resulting from the declaration of air quality management areas.

7.2.3 Air quality and transport



Continuing to reduce road transport emissions is a key part of local air quality management because road transport is a major source of local air pollution in towns and cities and accounts for over half of the total emissions of oxides of nitrogen and particles.

This is demonstrated by the significant number of AQMAs that have been designated nationally in respect of these two pollutants.

Between 1986 and 2000 the number of cars on the UK roads increased from about 17 million to around 21 million, whilst between 1980 and 2004 road freight traffic, in terms of weight per distance moved, increased by 70 per cent (source Department For Transport, DfT).

In Buckinghamshire and Milton Keynes traffic flows for all motor vehicles increased by almost 20% between 1994 and 2004, in line with the national figures (source DfT National Road Traffic Survey). Nevertheless national emissions of NO_x and particles have decreased by 51 and 37 per cent respectively between 1990 and 2003 (Source DfT see "The Environment in Your Pocket", 2005). In part this reduction is because of technological improvements in vehicles allowing for increased traffic with reduced emissions.

7.2.4 Local Transport Plans (LTP)

Air quality strategies (and Action Plans associated with AQMAs) will be closely tied to the LTPs. All the local authorities represented in the Bucks AQMG will therefore work in partnership to develop the most cost effective solutions to air quality problems.

In terms of air quality the new LTPs should:

- Build on local air quality assessment work and feed into this strategy.
- Quantify the source of contributions to any predicted exceedences of air quality targets.
- Set out how other transport related measures contained in the new LTP would aid authorities in meeting their air quality objectives especially for those local authorities with AQMAs.
- Quantify the expected impacts of any proposed measures to be implemented and indicate whether these measures will have a positive or negative impact on the air quality objectives.
- Set out where possible a 2004/5 baseline, a 2010/11 target, and annual trajectories for progress against targets related to air quality objectives.

- Indicate how progress will be monitored and reported through annual progress reports, and how the authorities will evaluate the effectiveness of the actions on air quality.
- Include evidence of relevant internal and external consultation undertaken particularly with stakeholders such as the Highways Agency and local business and community groups.
- Demonstrate that risks towards achieving the objectives have been fully considered.
- Assess air quality using a system of buffer zones to identify areas in each district that may be showing a trend towards deteriorating air quality, enabling solutions to be developed before targets are breached.
- Include Strategic Environmental Assessments as they now form part of LTPs.

7.2.5 Traffic reduction and reducing vehicle emissions

The Road Traffic Reduction Act 1997 requires the County Council and Milton Keynes Council as local highways authorities to assess traffic levels and make proposals to reduce levels or the rate of growth of traffic and publish these in a report. The Bucks Air Quality Management Group endorses the concept of traffic reduction throughout Buckinghamshire and LTPs will incorporate the mechanisms for achieving these targets. We will aim to achieve traffic reduction by improving the infrastructure needed to reduce unnecessary road use. Traffic reduction can also be achieved through transport planning including diversion of freight from road to rail.



7.2.6 Traffic regulation

The provisions of the Road Traffic Regulation Act 1984 give transport authorities extensive powers to make Traffic Regulation Orders (TROs). These can prohibit, restrict or regulate traffic or particular types of vehicle. Under Schedule 22 of the Environment Act 1995, traffic authorities can include pursuit of the Air Quality Objectives in Part IV of the Act in TRO.

The Highways (Traffic Calming) Regulations 1999 and the Highways (Road Humps) Regulations 1999 allow authorities a wide range of physical measures to control traffic at low speeds. A balanced view on traffic calming will be taken in setting speed levels with additional reference to safety requirements.

7.2.7 Roadside testing

The Road Traffic (Vehicle Emissions) (Fixed Penalty) (England) Regulations 2002 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 to exceed current emission limits. Currently the high cost of undertaking roadside

testing and the requirement for additional resources from the Police mean it is not considered appropriate at this time, but it may be so in the future.

7.2.8 Stationary vehicles (turn off your engine campaign)



The Road Traffic Regulations also permit Local Authorities to take action against drivers who leave their vehicle engines running for extended periods 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 has been introduced to encourage drivers to switch off their idling engines outside schools. Signs reminding drivers to “Cut your engines while you wait” have been erected at a number of schools in the County.

7.2.9 Targeting smoky vehicles

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

Currently, Local Authorities are not empowered to deal with such vehicles. However, details of any offending smoky diesel HGV or bus can be reported to the Vehicle and Operator Services Agency (<http://www.vosa.gov.uk/...moky%20vehicle%20report%20form.pdf> ; Tel. 0870 6060 440) who do have powers in respect of smoky vehicles.

- We will continue to promote this initiative with the introduction and distribution of new “vehicle emission watch” leaflets with freepost envelopes.
- We will continue to support a reporting system online at BucksAirQuality.Net.
- We will introduce leaflets on air quality and the importance of testing at MOT stations in the County.

7.2.10 Parking controls

A significant influence on whether people drive into towns is parking availability. The Road Traffic Regulation Act 1987 permits Local Authorities to determine where motorists can park and how much it will cost them. For example residents’ parking schemes can be an effective way of encouraging non-residents to find other ways of travelling into town centres.

Special Parking Areas (SPA) have been in place in Wycombe and Aylesbury for some time now. Chiltern is the latest area to take over enforcement from the Police and create a new SPA.

7.2.11 Travel plans

A travel plan is a package of measures designed to reduce car dependency by supporting more sustainable forms of travel, by reducing the need to travel to work and, particularly in the case of schools, improve 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 to work on implementing travel reduction measures for Council staff by providing such things as 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, which has been very successful with many schools taking part, and nationally recognised in the form of the National Transport Award.
- Continuing to support *Bucks Car share* and *CARSHAREMK* – free services 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.



7.2.12 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."

The BAQM Group shares this view, however we are also aware that increased use of larger commercial vehicles can cause environmental and amenity problems in some locations.



It is important for councils to help industry develop more sustainable distribution systems, which promote economic growth while reducing accidents, health risks, disturbance and environmental damage, and demands on maintenance.

Some of these objectives will be achieved through other means such as the implementation of land use policies as set out in PPG13: Transport when councils prepare development plans and determine planning applications.

Views of the public have been sought in arriving at the freight strategy. In addition, since the modern freight industry embraces a number of complex 'supply chain'

considerations, strong links with the Freight Transport Association (FTA) are needed to arrive at constructive measures that reconcile the need for access for goods and services with local environmental concerns. Together the various freight initiatives proposed comprise the initial stages in developing a Freight Quality Partnership with the FTA, in accordance with Government advice.

7.3 Alternative options

7.3.1 Promoting cleaner fuels

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

Currently, the use of cleaner fuel type vehicles is being encouraged throughout the county by such measures as use of LPG vehicles and refuse vehicles with cleaner Euro 3 engines with added particle traps, and the use of "green diesel".

In order to encourage the use of cleaner fuels, the BAQM Group will also attempt to:

- Develop partnerships with businesses and major fleet operators.
- Encourage local companies to consider using cleaner fuels technology.
- Encourage the adoption of council wide policies of replacing existing fleet with "greener" vehicles where appropriate.
- Seek to improve the availability of cleaner fuels at service stations.

- Review Buckinghamshire and Milton Keynes for gaps in the alternative refuelling infrastructure.
- Support the Energy Saving Trust in helping to increase the uptake of clean vehicle technologies and by promoting any discounts or initiatives.

7.3.2 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 that are encouraged to use public transport, Carshare MK can provide bus discounts to any person who works within Milton Keynes.
- 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 (bus stations and railway stations) and identifying barriers to use.



7.3.3 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, which attempts to influence people's habits in order to reduce dependence on the car for short trips, and encourage walking as a healthy alternative.
- Working closely with Councils who are responsible for implementing the cycling strategy by expanding the cycling route network, already a significant number of new cycling tracks have 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.



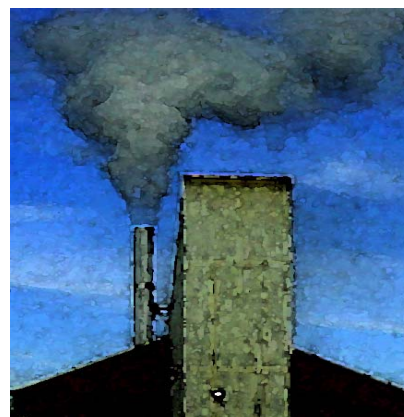
**For more information on walking and cycling
visit www.bucksc.gov.uk and www.mkweb.co.uk/transportmk**

7.4 Control of industrial sources of air pollution

7.4.1 Reducing emissions from industrial sources

Under Part 1 of the Environmental Protection Act 1990, Local Authorities are given powers to control air pollution from a range of industrial sources. These authorised processes are legally obliged to comply with specified conditions in order to prevent or minimise emissions to air.

Each Council authorises a significant number of processes ranging from unloading petrol at service stations to vehicle re-spraying businesses and concrete batching plants.



The present regime is currently being replaced by the new Pollution Prevention and Control Act 1999 and Regulations 2000. This will introduce Local Air Pollution Prevention and Control (LAPPC) and will be underpinned by the concept of the "Best Available Techniques" (BAT) to prevent or minimise air pollution.

7.4.2 Industrial smoke control

District and Unitary Councils are also empowered to control certain emissions from industrial or trade premises which fall outside the provisions of the Environmental Protection Act or Pollution Prevention and Control Acts, by enforcing the provisions of the Clean Air Act 1993, including powers to:

- Prohibit black smoke from a chimney or any building (subject to certain permitted periods and exemptions).
- Prohibit dark smoke from industrial or trade premises (subject to certain exemptions).
- Require notification of installation of industrial furnaces.
- Approve chimney heights of certain installations.
- Make Smoke Control Orders allowing domestic premises with open fires to burn only smokeless fuel as defined in the Act, unless on an exempted fireplace.

At home:

Avoid burning solid fuels if possible. If you live in a smoke control area, burn only authorised smokeless fuels (your local authority can advise you).

7.4.3 Statutory Nuisance and the Environmental Protection Act

The statutory nuisance provisions of the Environmental Protection Act 1990 complement the other regulatory regimes outlined above. They allow Local Authorities to deal with domestic and industrial emissions that, by legal definition, are prejudicial to health or a nuisance.

Industrial processes not regulated under the PPC Act must ensure that they do not cause a statutory nuisance by operating according to “best practicable means”.

Nuisance may originate from smoke (including bonfires), fumes, gases, dust and odour. Where the enforcing authority is satisfied that a nuisance exists, an abatement notice must be served.

Bonfires: Avoid lighting bonfires, but if you must, don't light them when pollution levels are high or while the weather is still and cold. Remember even burning only clean wood will produce toxic chemicals and harmful particles. To minimise the potential harm only burn dry material and never burn household waste, especially plastic, rubber, foam or paint which will produce large amounts of toxic chemicals.

Levels of air pollution can be particularly high on November the 5th, bonfire night, and other events/festivals with bonfires. Sensitive people, including people with respiratory conditions, may notice some effects. However remaining indoors and keeping windows closed can considerably reduce exposure.

FACT: Did you know? 14 % of annual national emissions of dioxins are produced by November the 5th bonfires and fireworks, which also produce 900 tonnes of PM₁₀ particles. (Source National Society for Clean Air).

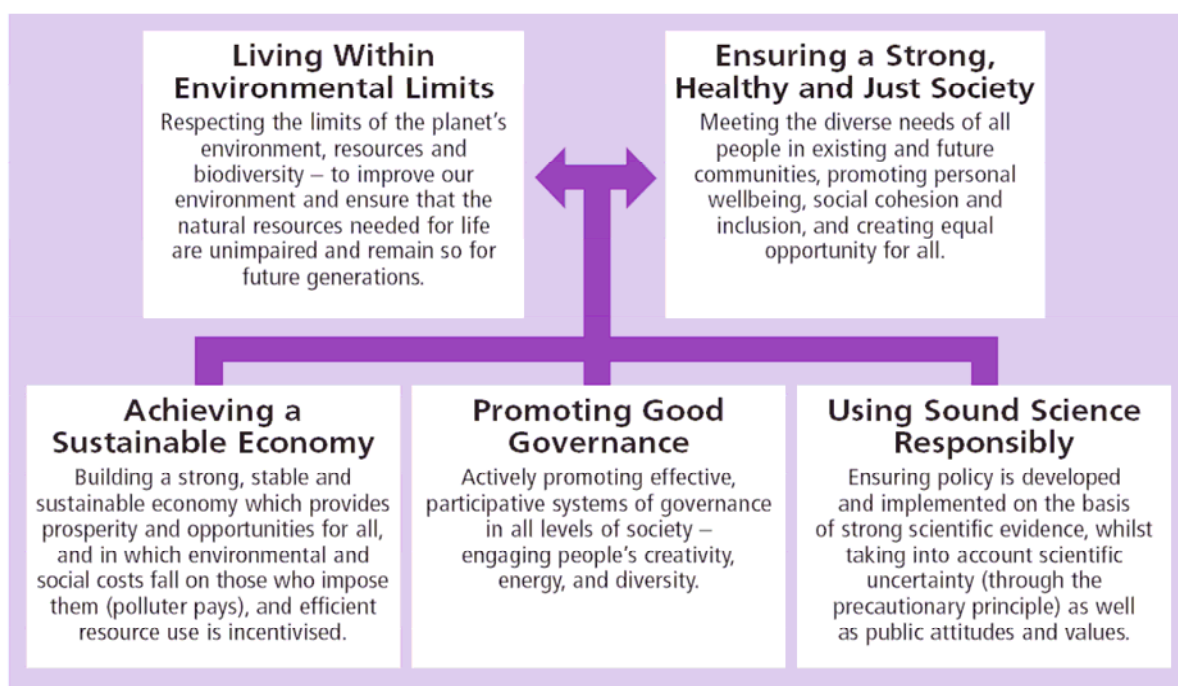
8. Sustainable development

The past 20 years have seen a growing realisation that the current model of development is unsustainable. In other words we are living beyond our means as demonstrated by such things as the loss of biodiversity from the felling of rainforests, over fishing, and the negative effect our consumption patterns are having on the environment and the climate. The increasing stress we put on resources and environmental systems such as water, land and air is unsustainable.

A widely used and accepted international definition of sustainable development is: 'development which meets the needs of the present without compromising the ability of future generations to meet their own needs'. Globally we are not even meeting the needs of the present let alone considering the needs of future generations.

Unless we start to make real progress toward reconciling these contradictions wherever we live we all face a future that is less certain and less secure than we in the UK have enjoyed over the past fifty years. We need to make a decisive move toward more sustainable development both because it is the right thing to do and because it is in our own long-term best interests. It offers the best hope for securing the future.

8.1 The UK guiding principles of sustainable development



For further information about the UK government's approach to sustainable development see "The UK Government Sustainable Development Strategy" published by DEFRA.

http://www.sustainable-development.gov.uk/publications/pdf/strategy/Chap_1.pdf

8.1 Air quality and sustainability

Buildings contribute directly and indirectly to the consumption of energy and resources; to environmental pollution from materials used in construction (including the use of raw materials); to energy consumed from heating, lighting and ventilation; to waste generated during construction and demolition. Energy efficient buildings and those incorporating sustainable design principles are now recognised as likely to provide healthier and more comfortable conditions.

The following initiatives will continue to be supported by Bucks AQMG.

- Under the Home Energy Conservation Act 1996, Local Authorities are required to improve energy efficiency in their areas by 30% by 2010. By improving energy efficiency, the quantity of unnecessary emissions of greenhouse gases, such as carbon dioxide (CO₂) and other pollutants, can be reduced. This can help to combat air pollution and global climate change.
- Affordable Warmth Strategies will be promoted in order to improve energy efficiency standards in housing stock of all tenures.
- Best Practice Guide for developers on sustainable design for buildings and the wider environment. This focuses on the conservation and efficient use of water, construction materials and land, and on developing opportunities for more sustainable lifestyles.
- The Government's Decent Home Standard 2002 defines a decent home as one that is "warm, weather proof and has reasonably modern facilities". Energy efficiency is an integral part of this national initiative aimed at improving housing standards.
- Promotion of Renewable Energy to meet National /Regional targets.
- 'Carbon Trust' funded schemes to reduce carbon emissions.
- Changes to Building Control Regulations to promote more energy efficient buildings.

9. Air Quality and Environmental Impact Assessment

9.1 Environmental Impact Assessment (EIA)

This is an important procedure for ensuring that the possible environmental effects (both direct and indirect) of a proposed development are fully understood and considered before a development is given final approval. The Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999 require a developer to prepare an environmental statement on larger developments describing the likely environmental effects of the project, including air quality.



9.2 Strategic Environmental Assessment

The Strategic Environmental Assessment (SEA) Directive (2001/42/EC) came into effect in July 2004 and is relevant to air quality management. The Environmental Assessment of Plans and Programmes Regulations 2004 transposed the Directive into English law. The Directive applies to plans or programmes that set the framework for future development consent of projects listed in the Directive, giving particular emphasis to the following areas:

- Collecting and presenting baseline environmental information.
- Predicting significant environmental effects of the plan or programme, including those of alternatives.
- Addressing adverse environmental effects through mitigation measures.
- Consulting the public and authorities with environmental responsibilities as part of the assessment process.
- Monitoring the environmental effects of the plan or programme during its implementation.
- Local authorities will have to undertake an SEA when preparing certain 'public' plans such as Local Transport Plans. They will apply the above regulations appropriately especially in terms of potential effects on air quality. Therefore Bucks AQMG will try to ensure that the representative from each council is consulted as appropriate.

9.3 Air Quality and Environmental Management Systems

Consideration will continue to be given to air quality issues in relation to the development of Environmental Management Systems and Environmental Policies.

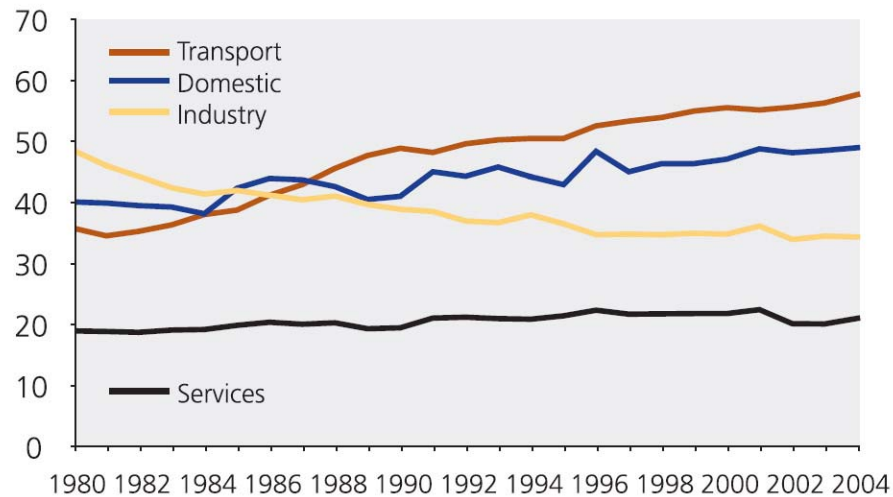
The following will be taken into account:

- Principles of sustainable development.
- Development of in-house environmental policies.
- Commitment to comply with relevant environmental legislation and regulations.
- Products or services should be produced, delivered or disposed of in an environmentally friendly way where possible.
- Expenditure on environmental protection is timely and effective.
- Planning for future investment and growth reflects market needs on the environment.
- Best available technology is used where appropriate and economically viable.
- Objectives and targets aimed at continuous environmental improvement, evaluation procedures, staff training and awareness, which we will also promote to other organisations and local businesses.

Final energy consumption: 1980–2004

United Kingdom

Million tonnes of oil equivalent



(Source: "The Environment in Your Pocket" 2005. Crown Copyright)

Figure 9.1 Energy consumption in the UK

10. Promoting clean air and 'doing your bit'

10.1 The Bucks Air Quality Management Group (BAQMG)

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.



10.2 BucksAirQuality.Net

In a joint initiative the District Councils, Milton Keynes Council and Bucks County Council have joined forces to develop an air quality website containing a wealth of information covering Buckinghamshire and Milton Keynes. 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 database 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.



This site was voted the best consortium air quality website by the Air Quality Management Journal in a review of air quality sites across the Country.

10.3 Teaching packs for schools

In conjunction with the “cut your engine” signs at school, we have increased the awareness and understanding of air quality and environmental issues by designing and circulating new teaching packs. These were distributed to schools in the County and interactive demonstrations/talks have also been available upon request. A number of successful classes have occurred in recent years at local primary schools. Following feedback from head teachers on the amount of printed material received in schools, the required teaching packs are now available for downloading from BucksAirQuality.Net

10.4 Co-operation and partnerships

Local air quality problems cannot be solved by council action alone. The success of this strategy depends upon co-operation and partnerships with other sectors and agencies. Therefore, in order to give air quality issues a high priority, the councils will continue to work closely together, and with the following:

- Central Government (e.g. DEFRA, ODPM).
- Environment Agency.
- Highways Agency.
- Primary Care Trust.
- Local businesses.
- Local schools.
- Local community.
- All other stakeholders.

The following are examples of partnerships already established:

- **Bucks Air Quality Management Group.**
- **Bucks Strategic Partnership (BSP).** The Bucks Strategic Partnership was formed in 1998 to bring together key partners in Buckinghamshire to work on improving the quality of life for local people. In 2002 the Partnership published the first countywide Community Plan, which included the targets in the Local Public Service Agreement (LPSA). The partnership was formerly known as the New Bucks Partnership for Action. The name was changed at the annual conference in October 2003 to reflect the way the partnership had evolved during this period. The BSP is made up of all the key organisations operating within Bucks, not just limited to the Public Sector but with representatives from the Voluntary and Community Sector, local business and various other agencies. BAQMG are members of the Environment Sub Group. See www.bucksonline.gov.uk.
- **Milton Keynes Local Strategic Partnership.** The Local Strategic Partnership (LSP) provides the forum through which citizens, businesses and service-providers work collaboratively to create the right atmosphere and environment that will enable the people of Milton Keynes to build the city to which they all aspire.

- **Thames Valley Environmental Protection and Advisory Group.** This group is represented by Managers and Officers from each of the District Councils and Unitary Authorities in the Thames Valley. It acts as a focus for environmental activities, providing examples of best practice for air quality, regulation and assessments. It also considers: Contaminated Land, Radiation, Transport, Licensing, and Anti-Social Behaviour.
- **Thames Valley Energy** operates in Berkshire, Buckinghamshire, Oxfordshire, northern Hampshire and Surrey. The principal interests of the Agency relate to renewable energy (wind, bio-energy, solar, hydro) but also embrace green waste and green transport initiatives. Activities are targeted at the countryside and the town/ urban environments and their respective communities. Sponsors and supporters are drawn from the public and private sector, as well as academic and voluntary organisations creating a broad base for this innovative, 'not-for-profit' initiative. Drawing on international research, TV Energy is a prime example of being able to 'think globally' and then 'act locally' for the benefit of the people of the Thames Valley and associated areas.
- **Freight Quality Partnerships.** Please see section 7.2.12 of this report.
- **Corporate Environmental Advisory Centre** was established in 1997 to provide environmental management support to businesses in the Thames Valley region. It works with partners such as the local Economic Partnerships, other business organisations and regional government agencies to develop environmental programmes that meet local business needs.
- **E-generation** is a 'one-stop' website offering advice on environmental and sustainable development issues to businesses across the South East. The website includes resources for business support services, best practice information, technical support, and a training tool providing learning pathways from basic to advanced for each subject area. BAQMG offer a section on regulation of air quality for businesses.
- **Safer Routes to Schools Team** (see sections 7.2.11 and 17.1.4)

11. Contact Details

Bucks Air Quality Management Group

C/O Ben Coakley
Strategic Environmental Protection
Health & Housing
King George V Road,
Amersham,
Bucks.
HP6 5AW

Aylesbury Vale DC – Environmental Protection Team

Bill Pegram
Environmental and Licensing Services
Aylesbury Vale DC
66 High Street
Aylesbury,
Bucks.
HP20 1SD

Chiltern DC – Strategic Environmental Protection Team

Strategic Environmental Protection
Health & Housing
King George V Road,
Amersham,
Bucks.
HP6 5AW

South Bucks – Environmental Health Team

South Bucks District Council,
Capswood,
Oxford Road,
Denham,
Bucks.
UB9 4OH

Wycombe DC – Control Of Pollution Unit

Control Of Pollution Unit
Queen Victoria Road,
High Wycombe,
Bucks.
HP11 1BB

Milton Keynes Council – Environmental Protection Team

Civic Offices
1 Saxon Gate East
Central Milton Keynes
MK9 3HH

Bucks County Council Transport Team

County Hall
Walton Street
Aylesbury
Bucks

Chiltern & South Bucks Primary Care Trust

2 & 3 Lacemaker Court
London Road
Old Amersham,
Bucks
HP7 OHS

Local Air Quality Strategy Action Reports 2006



Aylesbury Vale District Council



Chiltern District Council



Wycombe District Council



South Bucks
District Council

South Bucks District Council




Milton Keynes Council



Buckinghamshire County Council

12. Aylesbury Vale District Council



AYLESBURY VALE

Population	Number of Passive Monitoring Locations	Number of Continuous Monitoring Stations	Designated AQMAs	AQMA Action Plans	Number of PPC Industrial Processes in District
160,000	9	1	1	0	40

Mission Statement: "To make Aylesbury Vale the best possible place to live and work"

12.1 Air Quality Review and Assessment

To date, Aylesbury Vale District Council has completed two air quality Review and Assessments in accordance with the relevant legislation. For all but one of the seven pollutants it was concluded that the risk of exceeding the air quality objective was negligible. However, for nitrogen dioxide (NO₂) real-time monitoring clearly indicates exceedences of the annual mean air quality standard at certain traffic hot spots in Aylesbury Town. Consequently, an Air Quality Management Area (AQMA) was declared in July 2005.

This will be followed by consultation with all stakeholders, formal declaration of the AQMA by official Order, and an Action Plan designed specifically to address the air quality issues within the AQMA.

12.2 Local initiatives - The Aylesbury Transport Hub

Aylesbury public transport hub is a major scheme that significantly improves the quality of public transport. The following features are included:

- Bus priority around the town centre, making better use of road space on the ring road to create bus lanes.
- A link road from the railway station to the bus station, with wide footways and a signalised junction at Friarage Road.
- Provision of “super-stops” around the ring road with real time travel information.
- Provision of a new bus stop in the High Street with real time information.
- Creation of traffic free zones in the Market Square and Kingsbury Square.
- Upgrading of the current bus station waiting area for passengers.

12.3 Sustainable development

12.3.1 *Aylesbury Vale’s commitment to sustainability*

Aylesbury Vale District Council aims to reduce the negative effects and to increase the positive effects of what we do on the environment and will encourage others to do likewise.



AVDC have a long-term commitment to improving the way we do things in the light of new advances in technology, health and environmental science. We want to make constant, measurable progress in environmental performance, with a view to reducing our negative impact on the environment to levels that are as low as we can make them.

We also have a major role to play in encouraging businesses and the general public to follow the principles of this policy. We will achieve this by working in partnership with the wider community and by providing information, education and publicity by whatever means appropriate including through the Support Aylesbury Vale’s Environment (SAVE) initiative.

12.3.2 *Support Aylesbury Vale’s Environment (SAVE)*

“SAVE” is a partnership of Aylesbury Vale organisations, Local Authorities and individuals seeking to encourage more sustainable development at a local level. See www.saveaylesburyvale.org.uk.

Organised promotional events include family fun days; environmental projects; workshops and seminars; local farmers markets; cycling events; field trips; save awards and the re-cycled clothes show.

12.3.4 Accreditation ISO 14001

Aylesbury Vale's Environmental Health (EH) and Contract Services Divisions have already gained ISO 14001 accreditation in 2003. It is hoped that the programme will be rolled out to the whole of the Council. The EH Division is also working on its own individual Environmental Policy.

12.3.5 Sustainability and buildings

The following are examples of initiatives undertaken by AVDC:

- **Sustainable Construction Guide** made available to developers.
- Membership of the **Municipal Building Group**, which is affiliated to "SEPTVA" the Sustainable Energy Partnership for the Thames Valley Area.
- "**Fluorosave**", an energy saving initiative for the Council's public car parking lighting systems with the potential to reduce the power needed to create the same level of illumination, thereby reducing running costs by up to 30%.
- **Solar Panels**, funding is to be made available to test the viability of installing solar panels on some of our Community Centres.
- **Energy Management Systems**, funding is to be made available to research the possibility of a modernised central control point for our office heating systems, combined with a new software package this will create a more efficient and effective control system.
- **Service Contract for Heating Systems**, a new contract condition will require that, when necessary, all new heating boilers will be replaced by more energy efficient models.
- **Perimeter Lighting Systems**, at one of our larger offices, photo-sensors are to be fitted to the current perimeter lighting system in order to create a more efficient operation.

12.3.6 Improving emissions from council-owned vehicles

The Council has taken action to reduce emissions from its own vehicles:

- Since 1999 it has been the Council's policy to fit "CRT" (Continuously Regenerating Trap) particulate filters to all new HGV acquisitions.
- All HGVs have been running on "ULSD" – Ultra Low Sulphur Diesel.
- Since June 2003 the vehicle fleet has been running on "Bio-Diesel" which contains 5% vegetable oil.

12.3.7 Housing growth in Aylesbury Vale and surrounding areas

Proposed housing growth in the Milton Keynes and South Midlands area includes:

- An additional 14,100 homes in the Aylesbury area by 2021. This represents a 55% expansion of Aylesbury from 26,000 homes in 2001.
- A net growth in jobs of around 635 a year will be needed to support the housing growth, making a total of 12,690 new jobs required by 2021.

The transport infrastructure will need to be expanded to cope with the above projected growth. The potential impact on air quality, especially that associated with vehicle emissions, will be given careful consideration for the planning, development and post-development phases.

12.3.8 Renewable energy

Aylesbury Vale has supported (via the planning process) initiatives such as the wind turbine at Brill School. The school has recently become the Vale’s first electricity generating wind turbine.

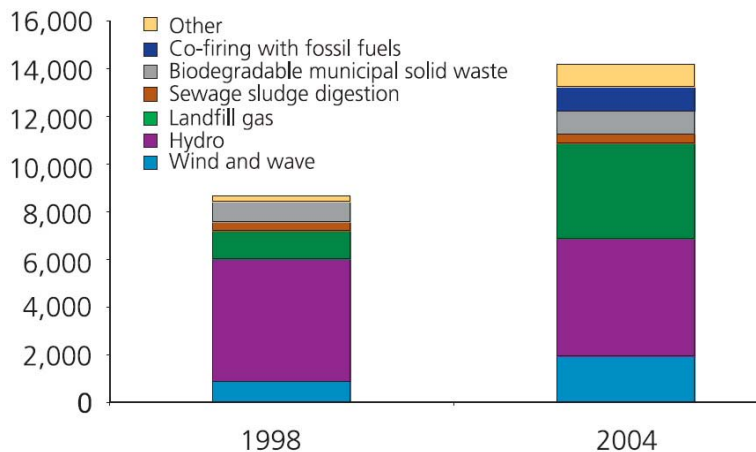
The project has been driven primarily by the school in partnership with Bucks County Council and Thames Valley Energy.

Aylesbury Vale’s second electricity generating wind turbine is being planned for Long Crendon School.

Electricity generated by renewable sources: 1998–2004

United Kingdom


Electricity generated (GWh)



(Source: "The Environment in Your Pocket" 2005. Crown Copyright)

Figure 12.1 Electricity generated from renewable sources in the UK

13. Chiltern District Council

 <h1 style="text-align: center;">Chiltern District</h1>					
Population	Number of Passive Monitoring Locations	Number of Continuous Monitoring Stations	Designated AQMAs	AQMA Action Plans	Number of PPC Industrial Processes in District
89,000	25	0	0	0	21
<p>Mission Statement: Delivering the Best for Chiltern.</p> <p>Objective 3 – Protecting, Preserving and Improving the Environment</p>					

13.1 Review and Assessment

Chiltern DC's first Review and Assessment was completed in March 1999 and consisted of a Stage 1 & 2 Review & Assessment. The results meant that a further review (Stage 3) was not required at the time and it was predicted that the air quality objectives would be met for all pollutants. At this time monitoring was undertaken at only a small range of sites.

There are no significant industrial sources of nitrogen dioxide in the Chiltern District, with vehicles producing the largest percentage of air pollutants.

In July 2003, an air quality Updating & Screening Assessment was undertaken and this indicated that some locations would require further passive monitoring. It was therefore decided to review the Council's monitoring programme. This resulted in redeployment of passive monitoring to other areas of the district and intensification in those areas that showed the greatest potential for elevated levels of NO₂. The number of sites now monitored is 25 (minimum number), which was an increase of about 50%.

CDC completed an annual Progress Report for air quality in 2004. It concluded that the air quality objectives were likely to be met for all pollutants and a detailed assessment would not be required. It did however recommend further monitoring with passive diffusion tubes along Berkhamstead Road in Chesham, as this area was showing the greatest elevations of nitrogen dioxide. Passive monitoring is generally used to indicate areas where further monitoring or modelling work is required

A second Progress Report was carried out in April 2005. This concluded that targets for carbon monoxide, benzene, 1,3-butadiene, lead, sulphur dioxide and PM₁₀ would be met. Air quality is an evolving subject with a constant supply of updated information, models, factors and technical methods. For this reason, the very latest assumptions and numerical factors were available for use in the 2005 Progress Report. Using these newer factors nitrogen dioxide still appears to be exceeding targets along the Berkhamstead Road. Consideration has also been given to any new major developments or changes in vehicle flows in the District. The location of each of the monitors is kerbside, each within a metre of the kerb. They have also been positioned carefully so as to represent the worst possible locations along the road (next to junctions etc). It is therefore considered that they are representative of worst-case positions. It is important at this stage to note that they DO NOT represent actual levels at potential receptor sites as defined under LAQM guidance, but kerbside levels. This is an important distinction that will require further investigation. At this stage CDC are awaiting official guidance from DEFRA and the Secretary of State as to the next steps. There may be a requirement to monitor levels at specific building facades, undertake modelling or install a new continuous monitor. It is also possible that an AQMA is declared in this area, on existing data.

13.2 Local initiatives

13.2.1 CATS (*Chesham & Amersham Transport Strategy*)

Chiltern District Council, in conjunction with the County Council, is working to develop the Chesham & Amersham Transport Strategy (CATS), which will consider measures to improve air quality, particularly in this area.

13.2.2 *CLAIRE: Chiltern's Local Air & Environment*



Chiltern has also developed an award winning web resource called [CLAIRE – Chilterns Local AIR & Environment](#). The site is broadly divided into 2 main areas: information for a younger audience, the 'Kids Zone'; and information for the older audience.

One of the aims was to make the site as interesting as possible and include material covering all the areas of frequently asked questions. Included are 'things that you may not be aware of'; projects that are taking place currently or will be available soon; activities for children; fun experiments and much more. The CLAIRE site is used in conjunction with the 'County Wide' sister site, [BucksAirQuality.Net](#), which provides information on air quality across Buckinghamshire.

13.3 Sustainability

The Council works hard at promoting sustainable activities and good practice as shown by the following initiatives.

13.3.1 Agenda 21 Strategy

In 1999, Chiltern produced its 'Local Agenda 21 Strategy', which has now been incorporated into the everyday activities of the Authority. The following **Environmental themes** have been included in the delivery of Agenda 21.

- Initiate and support measures to reduce all forms of pollution affecting air, noise, water and land.
- Encourage a positive attitude to the local environment from groups, schools and individuals, including environmental education and initiatives.
- Promote waste minimisation, encourage cost effective recycling, and the use of recycled materials.
- Encourage the use of environmentally friendly materials from renewable sources.
- Improve energy conservation, monitor energy use in its own buildings, and ensure that the best available technology is used for the combustion of fuel.
- Further develop planning, transport and environmental policies towards the provision of a high quality environment throughout the District.

13.3.2 Community Development Revitalisation Action Plan - CDRAP

The continued health of our planet is essential not only to those who now have the privilege of living on it, but also to future generations.

The Local Agenda 21 Strategy has evolved and now forms a significant part of the Community Development and Revitalisation Action Plan. This aims to ensure that we all participate in the social, economic and environmental well-being of the community, to promote a community identity and encourage regeneration. It is the aim of Chiltern District Council to work with community and local organisations to improve the 'Quality of Life' for everyone who lives or works in Chiltern, to make it a place where people, communities and business can flourish.

It is recognised that community projects cannot be delivered without effective partnership working. Community Appraisals will enable local communities to take local action that can influence the global environment. By encouraging communities to identify local needs and solutions, projects to improve bio-diversity, recycling, community renewables, transportation, and waste minimisation can be made at the local level.

The CDRAP also works to support the County and District strategies on waste minimisation and transportation etc by enabling and supporting events to increase participation.

13.3.3 Vehicle fleet



The Council, working in partnership with Verdant, have had its new refuse vehicles fitted with particle traps to reduce airborne particle emissions. In addition the council will be running two LPG fuelled vehicles from 2006.

13.3.4 Building management

“Chiltern District Council aims to reduce its use of energy in the work place and wherever possible minimise energy use for its own day to day activities”.

It will achieve this in a number of ways including the following:

- Sustainable Energy newsletter provided to all staff.
- Publicity campaign to reduce energy use through turning off lights, equipment etc. when not being used.
- Installation of timers on the water coolers, vending machines and on some other appliances with the intention of expanding this to cover any items that waste electricity out of working hours.
- A program of replacing all new plant with versions that can be operated with our building management system. This system allows for automatic switching on and off dependant upon weather, and time of day.
- Our lighting is Tri-Phosphorus. This means it lasts longer and uses less electricity. Thermostats are also being replaced with newer versions.
- Our electricity supplied to the Offices comes from ‘green energy’.

13.3.5 Taxi licence reduction for LPG vehicles

Chiltern offer a 50% reduction for Hackney Carriage Vehicle Licences when the vehicle runs on LPG or CNG fuel. (Professional fitting as per conditions). A reduction is also available for Private Hire Vehicles.

13.3.6 Renewable energy

Chiltern District Council contributes to funding of TV Energy, a renewable energy agency that promotes and supports renewable energy in the Thames Valley Region. This Agency is working with the Council to develop renewable energy projects in the district.



An example is The Shortenills Environmental Education Centre in Chalfont St Giles that has provided high quality environmental education to the children of Buckinghamshire for over 50 years.

Ever keen to highlight issues of sustainability, it was decided that some form of solar demonstration installation was required. This provides an introduction to solar technology for a whole generation of Buckinghamshire children, providing a valuable, working example of sustainable energy

solutions.

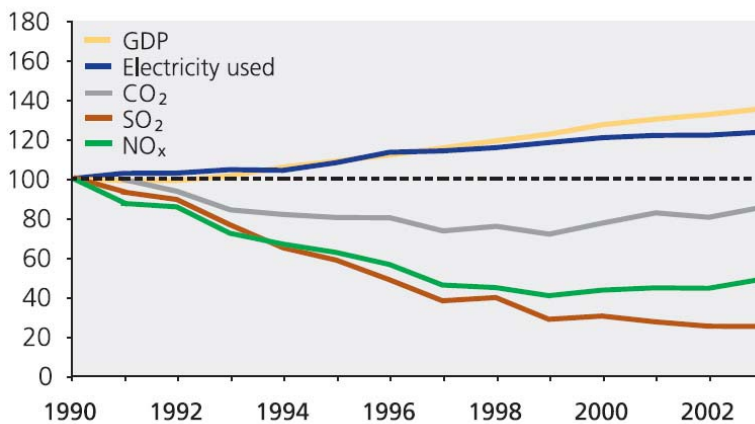
Secondly, it demonstrates the ease with which Photo Voltaic (PV) equipment can be built into everyday structures and how the result does not have to be bizarre or unusual. It is a working example for developers and architects that enables them to see at first hand the scope for integrating PV equipment into the built environment.



Electricity use, economic growth and environmental impacts: 1990–2003

United Kingdom


Index (1990 = 100)



(Source: "The Environment in Your Pocket" 2005. Crown Copyright)

Figure 13.1 Electricity use and environmental impact in the UK

14. Wycombe District Council

		<h1>WYCOMBE DISTRICT COUNCIL</h1>				
Population	Passive monitors	Automatic monitors	AQMA	Action Plan	PPC Industrial Processes	Smoke Control Orders
165,000	38	CO NO _x (x2) SO ₂ PM ₁₀ O ₃	YES	YES	Part A: 3 Part B: 61	YES
Mission statement		In 2026 Wycombe District will be economically strong and a good place to live, work and visit.				

14.1 Review and Assessment

Ambient air quality is monitored at 38 locations and the 2001 review and assessment exercise recognised an area where ambient levels are likely to exceed the national objective for one pollutant, nitrogen dioxide (NO₂) for the target date of 31 December 2005.



An Air Quality Management Area (AQMA) was declared which comprises a stretch of land 30 metres both sides of the M40 motorway kerb and includes approximately 120 properties.

Subsequently, an Action Plan was produced which addresses the problem and identifies what can be done to tackle air pollution, directly and indirectly.

14.2 Local initiatives

14.2.1 Air quality improvement at junction 4 - M40 Handy Cross layout changes

A study was conducted under the guidance of a steering group comprising representatives from the Government Office for the South East,



the Highways Agency, Buckinghamshire County Council and Wycombe District Council. The study identified a package of measures which were taken to public consultation through public exhibitions, leaflet drops, individual and group discussions. The measures should lead to:

- Improved traffic flow in the Handy Cross/ Cressex area.
- Improved safety along this stretch of M40.
- Reduction of vehicle travel times.
- Positive economic benefits with 'sister projects' running in parallel.

A cost assessment and a feasibility study have already been undertaken for this project. This is a very large scheme and it will also provide many major benefits for the area.



Although it has previously suffered with some time setbacks, the scheme has now received government approval and the work has recently started.

14.2.2 Air Quality in Handy Cross

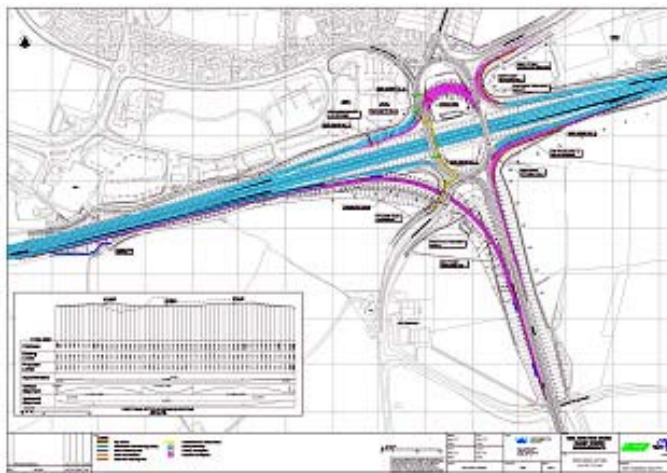


The Council, in partnership with the Highways Agency, has started a programme of monitoring to assess the improvement that the scheme will bring to local air quality.

Ten monitoring locations have been selected for this purpose.

Three types of locations have been agreed with the Agency to assess the impact of the work.

- Background.
- Urban residential.
- Motorway - It is assumed that the air quality impacts of the works will go far beyond the immediate vicinity of the junction as the dedicated slip roads from the A404 Marlow bypass and A404 Marlow Hill to the M40 West and East are likely to ease tailbacks of traffic waiting at the junction and get traffic moving more steadily on the actual motorway carriageway.



The area where these changes will take place is part of Wycombe's Air Quality Management Area and it is hoped that a decrease in air pollution levels in this critical area of the district will be observed.

14.3 Sustainability

14.3.1 ISO14001 Accreditation

Wycombe District Council is committed to improving its environmental performance and to 'putting its own house in order'. To achieve this, it is intended to have the whole of the Council registered for ISO14001 (the international environmental management standard) by March 2006. As evidence of this, eight of the Council's business units have so far been registered, including Environmental Services. This will be continued with the remaining business units.

This will have implications for the Council's suppliers, with whom we will be working to assist in improving their own environmental performance where necessary.

14.3.2 The council's environmental policy

ISO14001 requires the Council to have an Environmental Policy. This Policy sets out our commitment to improving environmental performance, reducing pollution and includes targets to reduce energy use and business and home to work mileage.

14.3.3 The Carbon Trust Local Authority Carbon Management Programme

Wycombe District Council is taking part in the 3rd phase of the above programme. This programme brings together many of the initiatives and actions for reducing carbon emissions which the Council is already undertaking in a coherent way and

which enables their effectiveness to be measured, as well as identifying other opportunities.

It is intended to have produced an action plan by March 2006, which will significantly reduce the Council's carbon emissions by 2011.

14.3.4 Renewable Energy

Wycombe District Council contributes to funding TV Energy, a renewable energy agency that promotes and supports renewable energy in the Thames Valley Region. This Agency is working with the Council to develop renewable energy projects in the district.

The Council is in the first phase of developing policy on renewable energy as part of the Local Development Framework. It is intended to make a requirement for provision of renewable energy technology in new developments of a certain size.

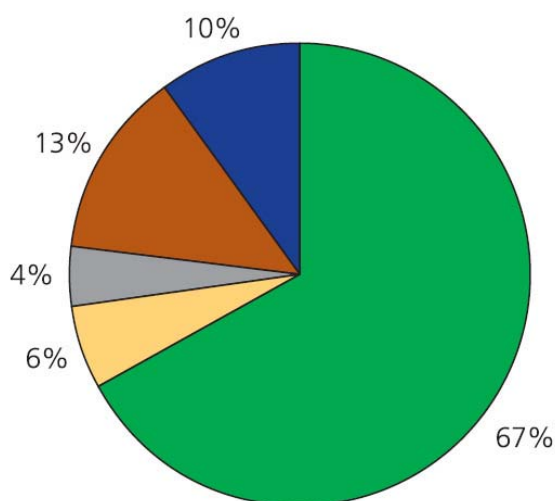
14.3.5 The Green Travel Plan

The Wycombe District Council Staff Travel Plan, Travel Choices, gives staff alternatives to just driving in to work on their own. These include:

- Discounts on Wycombe Park and Ride Annual Passes.
- Discounts on Annual Bus Passes.
- 34% discount on Chiltern Railways.
- Free shower, locker and cycle storage facilities.
- Pool bike available for business trips.
- Business bicycle mileage

Environmental protection expenditure by the public sector: 2003

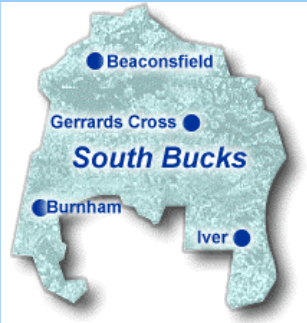
United Kingdom



Total expenditure = £4.9 billion

(Source: "The Environment in your Pocket 2005". Crown Copyright)

15. South Bucks District Council



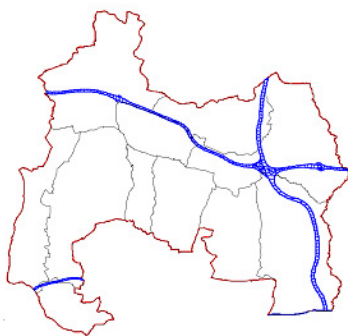
South Bucks District

Population	Number of Passive Monitoring Locations	Number of Continuous Monitoring Stations	Designated AQMA's	AQMA Action Plans	Number of PPC Industrial Processes in District
61,945	23	1	YES	Produced End 2005	29

South Bucks District Council Aim: *'Endeavour to make our environment measurably cleaner, healthier and managed in a way to preserve it for future generations.'*

15.1 Review and Assessment

To date, South Bucks District Council has completed two rounds of air quality review and assessment. The first review and assessment, which was completed in 2001, predicted that the whole District would achieve all of the National Air Quality Objectives. However, in order to provide clarification of the impact of traffic related pollutants and confirm the results of the first round, South Bucks District Council installed a real-time monitoring station in Gerrards Cross.



The second round of review and assessment required a detailed assessment of air quality to be undertaken during 2003/04. This 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 (shown in blue on the map above).

15.2 Local Initiatives

15.2.1 South Bucks Air Quality Action Plan

An Air Quality Action Plan has been developed to tackle air pollution issues within the District. The Consultation Draft Action Plan was produced in October 2005 and the Final Action Plan was published at the end of 2005. For further information about the Council's review and assessment process, visit:

http://www.southbucks.gov.uk/environment/pollution/air_pollution/air_quality/368.asp

15.2.2 South Bucks air quality information on the web

The South Bucks web site has a great deal of information on air quality under the following headings:

Please follow links below for valuable information on Air Quality

- o [Air Quality Review & Assessment](#)
- o [Air Pollutants](#)
- o [Air Quality - Monitoring](#)
- o [Monitoring Results](#)
- o [Doing Your Bit](#)
- o [Bucks Air Quality Net](#)
- o [Smoky Vehicle Reporting Form](#)



15.3 Sustainability

15.3.1 Sustainable development strategy - Sustaining South Bucks

South Bucks District Council has taken a proactive approach to sustainable development producing an initial local strategy, "Eco Logical Future" in 1996, which has evolved through two updated strategies, "Sustaining South Bucks" produced in 1998/99 and 2005.

The current strategy, the second update of the Sustainable Development Strategy, reflects the Council's commitment to making our environment measurably cleaner, healthier and managed in a way to preserve it for future generations. It also reflects the vision and objectives of the Council's Community Plan. The Community Plan's primary purpose is to deliver a better quality of life for people within South Bucks.

The Sustainable Development Strategy contains twelve main themes with related actions.

- Protection of the Green Belt and Village Amenities.
- Sustainable Transport and Road Safety.
- Waste and Recycling.
- Education, Information, Health and Community involvement.
- Protecting the Diversity of Nature.
- Reducing Air Pollution.
- Reducing Noise.
- Tackling Community Safety.
- Improving Housing Standards.
- Energy Conservation.
- Water Quality and Conservation.
- Economy, including combating unemployment and encouraging economic regeneration.

These action areas link well with the Government's headline indicators for sustainable development and also with objectives and indicators of sustainable development in the South East. The commitment to targets and indicators within this strategy will ensure it remains an active document.

The Strategy highlights the need to address air quality issues to provide for a better quality of life for people in South Bucks now and in the future. The Sustainability Strategy will be developed alongside an air quality Action Plan and will provide for a holistic approach to improving the environment within South Bucks.

15.3.2 Environmental Management Systems (EMS)

Environmental Management Systems provide a mechanism whereby organisations can assess their own environmental impact and develop mechanisms for improving their environmental performance.

South Bucks District Council encourages the uptake of Environmental Management Systems through the permitting procedure of the Pollution Prevention and Control Regulations 2000. Additionally, the Council encourages improved environmental performance by advertising the Envirowise service, a Government environmental advice line for businesses.

Envirowise Guidance Helpline 0800 585794

The Council is currently addressing its own environmental performance and are proposing to work towards EMAS accreditation. EMAS - the Eco-Management and Audit Scheme, is a voluntary initiative, which provides a practical approach to the development of an environmental management system.

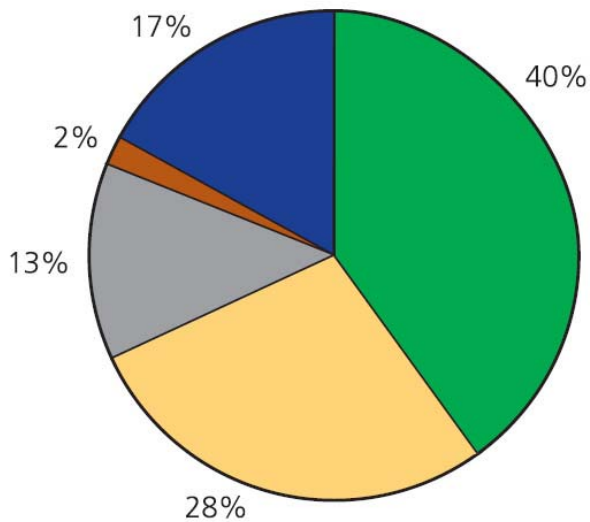
Its development requires the production of a public report on environmental performance and improvement targets, and therefore ensures transparency in environmental performance evaluation and gap analysis. It was established under EU Regulation 1836/93, (now Council Regulation 761/01). The goal of the scheme is to recognise and reward organisations that go beyond minimum legal compliance and continuously improve their environmental performance.



Environmental protection expenditure by private industry: 2003

United Kingdom


- Solid waste
- Water
- Air
- Nature Protection
- Other



Total expenditure = £3.4 billion

(Source: "The Environment in your Pocket 2005". Crown Copyright)

16. Milton Keynes Council

 Milton Keynes					
Population	Number of Passive Monitoring Locations	Number of Continuous Monitoring Stations	Designated AQMAs	AQMA Action Plans	Number of PPC Industrial Processes in District
210,000	28	4	0	0	72
<p>Our Vision: We will deliver the best possible future for Milton Keynes by creating sustainable communities and opportunities for all.</p>					

16.1 Review and Assessment

The Environmental Health Division operates four continuous automatic air quality monitoring stations. The stations contain National Environmental Technology Centre (NETCEN) type-tested and approved analysers, as used in national networks, housed in secure air-conditioned containers to maintain the correct operating temperature range.



There is a fixed monitoring station located within the walled garden at the rear of the Civic Offices. Two mobile air quality stations can be towed to various locations throughout Milton Keynes. The mobile stations are mainly used to assess possible air pollution hotspots and collect data over a monitoring period of a few months. A small semi-permanent monitoring station known as a "roadbox" is located on Wolverton Road, Newport Pagnell near the M1 bridge.

In addition to real-time continuous monitoring, the monthly nitrogen dioxide concentration is monitored

at 28 locations using passive diffusion tubes. Diffusion tubes are prepared and analysed in-house by the Environmental Protection Team.

There are currently no air quality management areas (AQMAs) within the borough as all air quality objectives are expected to be met.

16.2 Local initiatives

16.2.1 Car sharing scheme - CARSHAREMK

The CARSHAREMK scheme was introduced in October 2002 and is now managed by Milton Keynes Council. Car sharing is when two or more people share a car and travel together. It allows people to benefit from the convenience of the car, whilst alleviating the associated problems of congestion, pollution and parking.

Registered members employed in Central Milton Keynes are provided with a free parking permit. There are designated car share parking bays available in prime locations or members can park for free in standard parking bays. Members also benefit from discounted bus travel. Membership from individuals and employers is growing rapidly and membership of the scheme is now open to employees anywhere within the council area.

CARSHAREMK can be contacted on MK 01908 274274 or accessed at the website www.travelsmartuk.com or www.mkweb.co.uk/transportmk

16.2.2 TravelSmartuk

TravelSmartuk.com is a new and highly interactive website providing a one stop location for all travel and transport needs. The site provides information on bus, coach, rail and air services. It provides motorists with up to date traffic and parking information, route planners and fuel cost comparators.

The objective of the site is to create web based services that assist and promote smarter travel, in a way that links travel information systems for the area together into a single site. The aim is that this will lead to reductions in unwanted and unnecessary journeys and the promotion of alternative means of travel by providing information on different modes of transport.

For cyclists there are maps of cycle routes across the region. Walkers are catered for with links to various suggested routes many of which are suitable for all capabilities. If you're travelling by air or collecting family and friends from the airport the arrival and or departure times can be checked by clicking on the airports button at www.TravelSmartuk.com.

Rail passengers are also well catered for. You can now check the arrival and departures of trains from all local stations without leaving your armchair. Just click the station of your choice on the train page of TravelSmartuk.com. This is 'real time information' in other words it is telling you what is happening now. It is the same as being at the station reading the departure board.

16.2.3 Travel by bus

More people now commute by bus in Milton Keynes than at any stage in the city's history. This positive gain reflects the efforts that have been made by both MK Metro and the Council in ensuring the citizens of Milton Keynes have access to good quality bus services.

Passengers can expect to see future improvements to services through the £14.5 million public transport improvement project. This project includes junction improvements and real-time passenger information (so you can see when buses will arrive and depart). This will improve the reliability and efficiency of bus services. The project will be completed in 2008. A new bus interchange is also included in the plans which will be delivered along with the Centre:MK expansion over the next few years.

Comprehensive details of bus travel information can be found in the latest edition of the Milton Keynes Travel Guide available from newsagents and CMK bus station or can be downloaded from the website: mkweb.co.uk/transport.

16.3 Sustainability

16.3.1 Redways/Sustrans and the National Cycling Network

For cyclists and walkers, Milton Keynes has a traffic-free Redway system covering a total distance of over 320 kilometres. The Redway and Leisure Routes form an extensive network of shared-use paths passing through all the parks and every estate into the city centre.

Cyclists can also make use of the National Cycle Network, launched by SUSTRANS (Sustainable Transport), two routes of which pass through the city. Route 6 runs north-south, linking Northampton to Leighton Buzzard and Route 51 runs east-west, linking Bedford to Oxford. Free Redway guides are available from the Council offices, local cycle shops and the Parks Trust offices or can be viewed online at www.mkweb.co.uk/transportmk. Further information can be obtained from the Cycling Officer on 01908 691691.

16.3.2 Cycle-safe unit

The Cycle-Safe unit is designed to provide the complete range of facilities required to make cycling to work a practical, comfortable and enjoyable option. The unit is located on the corner of Witan Gate and Midsummer Boulevard. The facility is pre-built in a factory by one of the leading UK modular builders and provides a changing facility for 32 people. Users have lockable cycle cages, a drying room for wet gear, lockers for storing work gear and shower, toilet and changing room facilities.



16.3.3 Carbon Trust

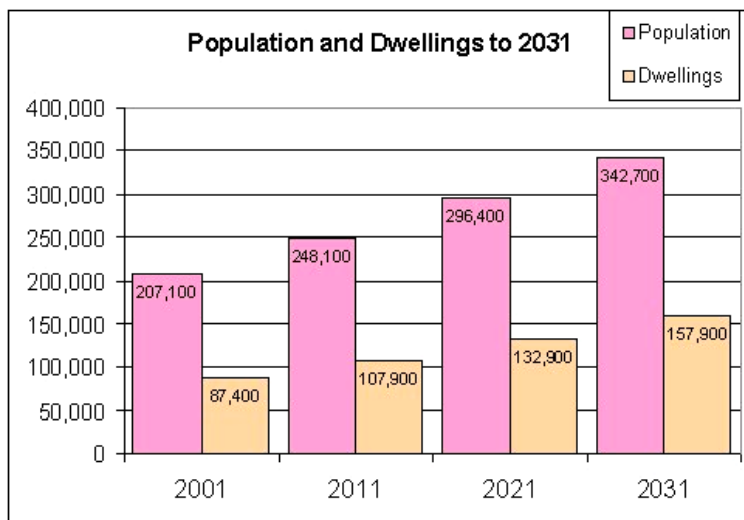
Improving the environment is one of the council’s eight priorities. By doing our bit to cut carbon emissions we can help limit greenhouse gases, which lead to global warming. Milton Keynes Council is working with the Carbon Trust – an independent company funded by the government - to create a carbon management Action Plan by January 2006. This will reduce emissions from council buildings and activities such as street lighting and transport. The project scope will be council-wide and is likely to include:

- Street lighting.
- Schools [including building new schools].
- Corporate buildings such as offices, libraries and leisure centres.
- Fleet transport.
- Staff business travel & commuting.
- Council housing.
- Waste, such as landfill gas.
- Council crematorium.
- Water use.
- Purchasing.

16.4 Population growth in Milton Keynes

Milton Keynes is the fastest growing urban area in the United Kingdom. Current estimates suggest that nearly 350,000 people will be living here in 2031, an increase of some 66% on the 2001 population

Figure 16.1
Projected growth
of population in
Milton Keynes



The local infrastructure is undergoing expansion to cope with this growth. The potential impact on air quality, especially that associated with vehicle emissions, will need to be given careful consideration for the planning, development and post-development phases.

17. Buckinghamshire County Council



Bucks County Council

Mission Statement

“We aim to improve the quality of life in the County and strike the right balance between encouraging prosperity and protecting the environment”

17.1 The County Council’s Strategy for Transport

17.1.1 Local Transport Plan (LTP 2006-11)

The LTP 2006-11 describes the County Council’s strategy for local transport.

The LTP seeks to meet individual travel needs, support 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 central 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 meeting local and national transport needs effectively.

Shared Priorities include:

- Tackling congestion.
- Delivering accessibility.
- Safer roads.
- Better air quality.

Air Quality Strategy is one of four key priorities in the forthcoming LTP for 2006-11.

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.

17.1.2 Traffic management

- Ensuring peak time travel is managed and congestion minimised.
- Priorities identified to combine sustainable travel with essential car and commercial vehicles.
- Examples include Oxford Road corridor in Aylesbury and London Road corridor in High Wycombe.
- The County Council have begun looking into Urban Traffic Management & Control and Intelligent Transport Systems.

17.1.3 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 public service vehicles procured through Government funding.
- Offering further bus discounts on bus and trains for council staff, teachers and town workers to reduce individual transport.
- Adhering to the Department for Transport's "Making Smarter Choices Work" scheme.
- Increasing accessibility of bus and rail routes to integrate wider communities with respect to jobs and services.

17.1.4 Safer Routes to School and school travel planning

- Implementing transport and education services into Safer Routes to School.
- Travel plans for schools involving communication, marketing and promotions.
- School Travel Advisory Group (STAG) involves developing new approaches to ensure a 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 modes.

17.1.5 Workplace travel planning and parking

- Active travel plans aimed at minimising car based travel to and from the workplace.
- Collectively, this initiative currently involves 8.7% of the workforce in Buckinghamshire.
- Investigating measured parking controls and residents parking schemes.

17.1.6 Cycling and walking

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

17.2 Sustainable development

Buckinghamshire County Council contributes to a wide variety of environmentally sustainable projects.

17.2.1 The Carbon Trust

The 2003 UK Government Energy White Paper set an aspiration for the UK to reduce carbon emissions by 60% and create a low carbon economy by 2050. The Carbon Trust is focused on reducing carbon emissions in the short and medium term through [energy efficiency](#) and [Carbon Management](#) and in the medium and long-term through [investment in low carbon technologies](#).

Through the Local Authority Carbon Management Programme, the Carbon Trust provides councils with technical and change management support and guidance to help them realise carbon emissions savings. The primary focus of the work is to reduce emissions in areas where the local authority can exert some control such as from buildings, vehicle fleets, and street lighting. Practical support is given in areas such as identifying carbon saving opportunities, developing an emissions reduction implementation plan, provision of analysis software, workshop support for staff and senior management training.

In June 2004 Phase 2 of the Local Authority Carbon Management Programme was launched and included Buckinghamshire County Council. The next steps involved in completing the phase include development of a strategy and Action Plan by March 2005 to reduce CO₂ emissions in Buckinghamshire.

17.2.2 Agenda 21 "A Better Quality of Life in Buckinghamshire"

In May 2001 Buckinghamshire County Council formally adopted its Local Agenda 21 Strategy 'A Better Quality of Life in Buckinghamshire'. The Council adopted a 'plan of plans' approach for the strategy, which sets out 'where we are now' by identifying key policy documents, which can act as delivery mechanisms for well being and sustainability.

"Working in partnership to provide a high quality of life and a sustainable future for the people of Buckinghamshire by delivering value for money services".

To deliver this vision the key aims and objectives are:

- Improve the places where people live and work.
- Safeguard the natural environment of the county.
- Promote economic success.
- Protect vulnerable groups.
- Reduce global impacts.



17.2.3 Action Energy

Action Energy is a government-funded programme, and is urging companies in Buckinghamshire to take steps to reduce energy bills. It aims to help businesses and public sector organisations save money through energy saving measures. The service offers a range of benefits from simple tips to in-depth advice and on-site support; it can show you how to make a big difference to the environment.

17.2.4 Green Energy Grants

- Two grant applications were awarded funding from the DTI's Clear Skies scheme to encourage renewable energy projects. Shortenills Environmental Education Centre has recently been awarded over £18,000 from the governments Community Energy Programme to install a woodchip fired boiler to provide heat to the classroom, dormitories and dining hall, while Brill CE Combined School has been granted £16,000 to help install solar heating for their swimming pool and a wind turbine to generate electricity.
- Community Energy is managed on behalf of DEFRA by the Energy Saving Trust and the Carbon Trust, assisted by the Combined Heat and Power Association.

Other buildings that will incorporate renewable energy (Wind Turbine and Solar Panels) in 2005 include Long Crendon School and Carrington Junior School. The County Hall in Aylesbury also has proposals to introduce Solar Panels, leading the way in Buckinghamshire as an environmentally sustainable energy consumer.

Buckinghamshire County Council recognises and takes a positive step into tackling the sources of poor air quality, while continuing to contribute and achieve a sustainable environment for the inhabitants of Buckinghamshire.

C. Summary of the actions to be taken as a result of the strategy

Action	Cost Effectiveness	Organisation Responsible	Positive effect 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	√√√	Immediate effect	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	√√√√	March 2006	Positive & preventative measure	Noise
Incorporate air quality measures into Local Transport Plans	£££££	DC BCC MKC	√√√√	Local Transport Plans to be implement-ed 2006	Positive & preventative measure	Noise Reduced congestion
Traffic reduction by improving infrastructure	££££	DC BCC MKC	√√√√	Local Transport Plan implemented	Positive impact across Bucks And MK	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 April 06	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 And MK	CO ₂ Reduction Noise
Targeting smoky vehicles by reporting them to the Government's Vehicle Inspectorate	£££££	DC BCC MKC	√√√√√	Continue scheme	Positive impact across Bucks And MK	CO ₂ Reduction
Promote vehicle emission watch leaflets	£££££	DC BCC MKC	√√√√√	April 06	Positive impact across Bucks And MK	CO ₂ Reduction

C. Summary of the actions to be taken as a result of the strategy

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	√√√	Dec 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
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 Carshare 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

C. Summary of the actions to be taken as a result of the strategy

Develop a Freight Quality Partnership with the Freight Transport Association	£££££	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 and in LTP	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 with the aim to negotiate improved bus service packages	£££££	DC BCC MKC	Indirect	Ongoing	Indirect positive	Improved accessibility
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 where existing policy allows	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

C. Summary of the actions to be taken as a result of the strategy

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 industrial furnaces	£££££	DC BCC MKC	√√√√	Ongoing	Positive impact across Bucks	CO ₂ Reduction
Approve chimney heights of certain installations	£££££	DC BCC MKC	√√√√√	Ongoing	Positive impact across Bucks	Odour
Enforce smoke control 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

C. Summary of the actions to be taken as a result of the strategy

Strive to 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	√√√	Update when appropriate	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 Local Transport Plans	£££££	DC MKC	√√	Ongoing	Small but positive	Setting a good example
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 updating and innovating the current website	£££££	DC MKC	√√	Ongoing	Small but positive	Education
Increase public awareness of local air quality / pollution issues	£££££	DC MKC	√√	Ongoing	Small but positive	Education
Strive to further 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	√√√	Dec 06	Small but positive	None

C. Summary of the actions to be taken as a result of the strategy

Provide a database for current and historical air quality monitoring for all interested parties	£££££	DC MKC	√√√	Dec 07	Small but positive	Information exchange
Provide a teaching aid for educational establishments	£££££	DC MKC	√√√	Dec 06	Small but positive	Information exchange
Promote the ideal of taking responsibility for our environment	£££££	DC MKC	√√√	Ongoing	Small but positive	Community participation

KEY :

Cost effectiveness
 £££££ Most cost effective
 £££ Medium cost effective
 £ Less cost effective

Actions
 √√√√√ Most Positive Action
 √√√ Medium
 √ Less Positive Action

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