

# A strategy for Cheltenham

January 2004



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\* Background papers contain more detailed information and references to specific topics covered in the strategy. These papers are available on request – please see appendix 3 for more details.

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## Foreword

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Climate change represents a fundamental threat to our quality of life. Whilst our planet's climate has been constantly changing since its beginning, human activity now threatens to change the climate faster than the environment's ability to act. Although the 1°C increase in Cheltenham's average temperature over the last sixty years is not that discernible now, the impact of climate change will be highly evident in the medium to long term. We consider it essential to act now to start addressing this global issue at a local level.

We recognise the importance of tackling climate change on two fronts; reducing greenhouse gas emissions to minimise future climate change and planning for the unavoidable impacts of climate change. We have prepared this strategy to ensure that in Cheltenham we have a clear framework for addressing both these issues. We will endeavour to implement the measures contained in the strategy through activities within our own organisations, and through working with our public sector, community and business partners on the Cheltenham Climate Change Project Board and with the wider community of Cheltenham.

Signed by Andrew McKinlay, Leader of Cheltenham Borough Council, and endorsed by Cheltenham Climate Change Board, which consists of :

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Chris James  
*Carillion Building*

Alex White  
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Jacqui Taylor and Mike Simpson  
*Gloucestershire County Council*

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*Project Sponsor & chair of  
Climate Change Board,  
Group Director (Environment)*

and the following officers from Cheltenham Borough Council:

Grahame Lewis  
Carol Rabbette  
Philip Williams  
Tom Mimmagh  
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John Crowther  
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Wendy Jackson

## Climate change – the context

### Introduction and aims of the strategy

Climate change is now widely regarded as the most pressing environmental problem confronting mankind at the outset of the 21<sup>st</sup> century. Although the earth is naturally warmed by a combination of gases that trap the sun's heat to create the 'greenhouse effect', man-made emissions of these gases are now building up in the atmosphere and starting to change our climate.

Most of the climate change over the last 200 years is due to human activities increasing greenhouse gas concentrations in the atmosphere. The most important of these gases is carbon dioxide (CO<sub>2</sub>), with 80% of the increased carbon in the atmosphere due to burning fossil fuels.

Given that CO<sub>2</sub> can last for up to 100 years once released into the atmosphere, some of the climate changes we are likely to face over the next century are unavoidable. The UK Government is urging local authorities to cut greenhouse gas emissions, particularly CO<sub>2</sub>, and to adapt to the effects of the changing climate to protect our communities.<sup>1</sup>

This strategy sets out Cheltenham's response to the threat of climate change. It has been developed by Cheltenham Climate Change Project Board.

**The OVERARCHING AIM of this strategy is to make Cheltenham a carbon neutral borough.**

**The MAIN OBJECTIVES of this strategy are to:**

- **raise awareness of the potential impact of climate change;**
- **establish accurate data of greenhouse gas emissions from activities in Cheltenham;**
- **propose measures to help prevent the causes of climate change, by aiming to reduce CO<sub>2</sub> emissions from activities in Cheltenham by 20% from 1990 levels by 2010;**
- **propose measures to help us adapt to the inevitable consequences of climate change;**
- **and engage with external agencies and other stakeholders to gain commitment to addressing climate change issues and delivering the climate change action plan.**

### How is the climate predicted to change?

By 2100, experts predict that average global temperatures will increase by between 1.4° and 5.8°C. This is likely to bring sea level rises, more frequent and intense storms, pronounced droughts, coastal erosion, less snow cover and ecosystems out of balance. Entire climate zones could shift, agriculture could be thrown into turmoil and millions of people might have to migrate from unliveable areas. Some animal and plant species could become extinct and tropical diseases and insect pests could spread. Even when emissions have been stabilised, warming will continue, and sea levels will carry on rising.

#### Fact box

*If the sea level rises by 1m, densely populated areas in Bangladesh, the Nile delta and Louisiana could be uninhabitable, affecting 80 million people. (Source: IPCC)*

### What does this mean for the UK?

Experts predicts that the UK will become warmer, rising by 2° to 3.5°C by the 2080's<sup>2</sup>. Under all scenarios we will have milder, wetter winters (with up to 15% more rain in the south west); hotter, drier summers (up by 1-2.5°C by 2050 in the south west, with 15 to 30% less rain) and sea level rises of about 30cms. Extreme conditions such as heat waves or stormy and rainy days will become more common. The Gulf Stream may weaken but is unlikely to cool the UK climate over the next century.

#### Fact box

- 1998 and 2002 were the two warmest years ever in the UK (UKCIP)
- Temperatures in Cheltenham have risen by 1°C over the last 60 years (SWCCIS)
- Until 2003, Cheltenham held the record for the UK's maximum temperature (SWCCIS)

### What does this mean for Cheltenham?

<sup>1</sup> Climate Change - the UK Programme - DETR 2000 ([www.defra.gov.uk/environment/climatechange/cm4913/](http://www.defra.gov.uk/environment/climatechange/cm4913/))

<sup>2</sup> Climate change scenarios for the UK – UKCIP briefing report 2002 ([www.ukcip.org.uk](http://www.ukcip.org.uk))

Based on these predications, the possible impact of climate change on Cheltenham would be:

|                                  |   |
|----------------------------------|---|
| Higher temperatures              | <ul style="list-style-type: none"> <li>• Less demand for winter heating, which may reduce fuel bills and fuel poverty</li> <li>• Longer growing season for crops, lawns and flowers, less hardy species will survive better, but so will weeds, pests and diseases</li> <li>• Increased potential for outdoor activities, encouraging the 'café culture', but could lead to more intensive use of parks and green spaces</li> <li>• Could attract more visitors to Cheltenham, benefiting tourism sector, but increasing pressure on infrastructure</li> <li>• Increasing demand for electricity in the summer to cool buildings</li> <li>• More deaths from higher temperatures, &amp; higher risk of food poisoning &amp; tropical diseases</li> <li>• Working conditions could be uncomfortable in summer</li> </ul> |
| Wetter winters                   | <ul style="list-style-type: none"> <li>• Increased flooding risk, especially in floodplain areas, and difficulties in getting insurance cover</li> <li>• Increased risk of damp in older buildings</li> </ul>   |
| More storms and weather extremes | <ul style="list-style-type: none"> <li>• More building damage from storms and subsidence, increasing insurance premiums</li> <li>• Disruption to telecommunications and transport from weather extremes</li> <li>• Road surfaces requiring more frequent repairs</li> </ul>   |
| Drier summers                    | <ul style="list-style-type: none"> <li>• Water shortages in summer, which will impact on vegetation and wildlife</li> <li>• Traditional species of trees could suffer from drought, which could threaten existing habitats</li> </ul>   |
| General impact                   | <ul style="list-style-type: none"> <li>• New business opportunities likely in renewable energy, new building and environmental technology</li> </ul>  |

## Global, national and local responses to climate change

Action to combat climate change has been happening at an international level for a number of years, culminating in the 1997 *Kyoto Protocol*. 86 nations have agreed to ratify the protocol although the USA, as the world's largest emitter of CO<sub>2</sub> has not yet done so. The UK's Kyoto target is to reduce greenhouse gas emissions to 12.5% below 1990 levels over the period 2008-12. The UK government has set its own goal of a 20% reduction in CO<sub>2</sub> levels by 2010 and is keen to pursue a reduction of 60% by 2050, with real progress by 2020.<sup>3</sup>

### Fact box

In 1995, the UK was responsible for about 2% of global CO<sub>2</sub> emissions, producing just under 10 tonnes of CO<sub>2</sub> per person per year (twice the world average) (Source - UKCIP)

UK greenhouse gas emissions fell 13% between 1990 and 2000 and CO<sub>2</sub> emissions fell 7.5%, reflecting the switch from coal to gas and nuclear power for electricity generation. Emissions rose again in 2000 due to increased use of coal in power stations. Greenhouse gases are expected to rise after 2005, mainly due to the projected growth in transport activities.<sup>4</sup> The *UK Climate Change Programme* sets out measures designed to bring about greenhouse gas reductions of up to 23% below 1990 levels by 2010, including a number of measures that local authorities can undertake.

### Fact box

Of the 154 million tonnes of CO<sub>2</sub> produced in the UK, 28% is produced by industry (especially agriculture, coal and gas power and aviation), 28% in people's homes, 26% on transport and the remainder on services.

The *Regional Planning Guidance for the South West* commits local authorities, energy suppliers and other agencies to supporting a 20% reduction in CO<sub>2</sub> emissions by 2010, and a minimum of 11-15% of electricity production from renewable energy sources by 2010.

## Cheltenham Borough Council's response to climate change

In May 2002 the Leader of Cheltenham Borough Council confirmed our commitment to tackling climate change by signing the *Nottingham Declaration*<sup>5</sup>. This committed the council to producing a climate change strategy and to reducing greenhouse gas emissions from council activities.

*Cheltenham's Community Plan*<sup>6</sup> identifies climate change as a key issue and commits Cheltenham Climate Change Board to delivering this strategy over the next 5 years. This commitment was confirmed in *Cheltenham Borough Council Business Plan*, approved November 2003. *Cheltenham Borough Local Plan*<sup>7</sup> has been reviewed to reflect the government's emphasis on sustainable development and contains a number of policies to help address climate change. A key theme of the council's *Environmental Management Strategy*<sup>8</sup> is the need to cut greenhouse gases.

<sup>3</sup> White Paper - Our Energy Future – Creating a Low Carbon Economy, DTI 2003 ([www.dti.gov.uk/energy/whitepaper/index.shtml](http://www.dti.gov.uk/energy/whitepaper/index.shtml))

<sup>4</sup> The Environment in Your Pocket, DEFRA 2002 ([www.defra.gov.uk](http://www.defra.gov.uk))

<sup>5</sup> A government-promoted initiative to commit local authorities to preparing a plan to address climate change issues

<sup>6</sup> Our future, our choice – Cheltenham's community plan, October 2003 to March 2007 ([www.cheltenham.gov.uk](http://www.cheltenham.gov.uk))

<sup>7</sup> Cheltenham Borough Local Plan Second Review Initial Deposit - 2002 ([www.cheltenham.gov.uk](http://www.cheltenham.gov.uk))

<sup>8</sup> Environmental Management Strategy - Cheltenham Borough Council, 1997 ([www.cheltenham.gov.uk](http://www.cheltenham.gov.uk))

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## How do activities in Cheltenham contribute to greenhouse gases emissions?

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Most activities in Cheltenham generate greenhouse gas emissions. Fossil fuels such as coal, gas and oil are used to generate electricity for homes and businesses; they also fuel the transport system that supports our economy and gives us mobility. Combustion of these fuels, however, produces carbon dioxide, the most significant greenhouse gas. We consume vast quantities of goods, some essential, but many luxury items, all requiring energy in production and transport. We also throw away huge volumes of waste, which generates both CO<sub>2</sub> and methane, another greenhouse gas.

### Emissions data

The Severn Wye Energy Agency has estimated CO<sub>2</sub> emission levels from activities in Cheltenham by scaling down UK statistics to the Borough area population. Emissions from council activities are set out on page 17.

### Total estimated carbon dioxide emissions from activities in Cheltenham:

**1990 CO<sub>2</sub> emissions** – 1,191,318 tonnes

**1996 CO<sub>2</sub> emissions** – 1,148,914 tonnes

**1999 CO<sub>2</sub> emissions** – 1,092,544 tonnes

**Fact box**

*On average each resident of Cheltenham produced about 10.3 tonnes of CO<sub>2</sub> in 1999.*

Cheltenham's estimated CO<sub>2</sub> emissions fell by just over 10% between 1990 and 1999, despite an increase in population of 1.5%. Most of the reduction is due to increasing use of gas in generating electricity and the corresponding fall in the use of high carbon fuels such as coal and oil. Such savings are unlikely to be repeated in the future and Cheltenham is therefore likely to see rises in carbon dioxide emissions unless a carbon management framework is introduced which maximises energy efficiency and significantly widens renewable energy use.

### Reductions targets for CO<sub>2</sub> emissions

Taking action to cut CO<sub>2</sub> levels will be the most important strand of reducing greenhouse gas emissions although reducing other emissions such as methane and hydrofluorocarbons should also be addressed.

In line with Cheltenham Community Plan, this strategy seeks to reduce carbon dioxide emissions in Cheltenham. **Although baseline data is limited, the strategy sets out an action plan of measures designed to move us firmly towards the government's CO<sub>2</sub> target of a 20% reduction in 1990 levels by 2010 and the aspiration of a 60% reduction by 2050.** As CO<sub>2</sub> levels reduced by over 10% between 1990 and 1999, this leaves a medium-term goal for Cheltenham of a 50% reduction from 1999 to 2050, roughly 10% per decade. The strategy will also work towards a longer-term aspiration of becoming a carbon neutral borough.

### These strategic objectives will be delivered through a combination of:

- improving the energy efficiency of activities in Cheltenham and reducing wastage;
- increasing the share of renewably sourced energy and other low carbon fuels;
- reducing emissions from activities such as transport, purchasing and construction;
- and exploring the scope to offset unavoidable emissions through sustainable new planting to help absorb the carbon produced (carbon sequestration).

Improvement measures designed to help meet Cheltenham's CO<sub>2</sub> emissions reduction target are set out in the following sections with a more detailed action plan in Appendix 1.

### **KEY IMPROVEMENT MEASURES (see action plan for more details)**

***In order to monitor progress towards the CO<sub>2</sub> emissions reduction target of 20% from 1990 levels by 2010 from activities in Cheltenham, members of the Climate Change Board will:***

- ***Refine baseline data on CO<sub>2</sub> and other greenhouse gases as more information becomes available, and revise targets accordingly***
- ***Lobby the government for local energy consumption data from utilities companies***
- ***Report progress towards targets annually to the Climate Change Board.***





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## Reducing emissions from activities in Cheltenham

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This section proposes a number of measures designed to reduce CO<sub>2</sub> emissions from activities undertaken by everyone living and working in Cheltenham. It covers emissions from energy use in buildings, transport, purchasing and waste. Council emissions are covered on pages 17-19.

### Reducing emissions from energy use in buildings

#### Home energy conservation

Improving the energy efficiency of residential accommodation is important because it is responsible for about 25% of CO<sub>2</sub> emissions. The *Home Energy Conservation Act, 1996* (HECA) requires councils to identify measures to significantly improve the energy efficiency of homes in their areas, in order to reduce energy consumption by 30% over a 10 to 15 year period.

Significant progress towards this target has already been made in Cheltenham. From 2003-2010 energy efficiency needs to improve by a further 16.5%. **To meet the government's 20% CO<sub>2</sub> reduction target by 2010, we will need to reduce domestic CO<sub>2</sub> emissions by 6.7% between 2003 and 2010, roughly 1% per annum. We will aim to achieve this through a combination of domestic energy efficiency measures and promoting the use of electricity from renewable sources.**

#### Actions to improve home energy efficiency

Since 1996 this council has worked with other Gloucestershire local authorities to improve the energy efficiency of their housing stock. Some key achievements to date include:

- establishing the *Gloucestershire Energy Efficiency Advice Centre* to promote domestic energy efficiency and provide free home energy advice to householders;
- adopting an affordable warmth strategy<sup>9</sup> by the six Gloucestershire local authorities and South Gloucestershire unitary authority to tackle fuel poverty;
- establishing the 'Warm and Well' scheme in 2001, which improved the energy efficiency of 428 private dwellings in Cheltenham during its first two years.

*Cheltenham Borough Homes* is a not-for-profit arms length management company that manages and maintains the council's 5,000 homes. It aims to invest £70 million in council homes over the next seven years and improve the energy efficiency of its dwelling stock from an average SAP<sup>10</sup> rating of 63% in 2002/3 (compared with a national average of 54%) to 68% by 2007/8.

#### **KEY IMPROVEMENT MEASURES (see action plan for more details)**

***The council will continue to work with the Severn Wye Energy Agency, the Energy Efficiency Advice Centre, Gloucestershire local authorities and other partners to improve the energy efficiency of the housing stock in Cheltenham by 16.5% from 2003 to 2010.***

***Specific measures include:***

- ***Continuing to implement a programme of private sector housing improvements***
- ***Continuing to improve the energy efficiency of public sector stock***
- ***Promoting changes in behaviour and investment to encourage the efficient use of energy by householders***
- ***Encouraging local electrical appliance retailers to increase awareness of energy issues and labelling systems and promote sales of energy efficient appliances***
- ***Exploring opportunities to reduce CO<sub>2</sub> emissions from dwellings by encouraging the use of electricity generated from renewable energy sources (see pages 10 and 11 for more information).***
- ***Educating the public to encourage sustainable home energy use***

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<sup>9</sup> Action for Affordable Warmth – an Affordable Warmth Strategy for Gloucestershire and South Gloucestershire – 2001

<sup>10</sup> A SAP (Standard Assessment Procedure) rating is a number between 1 and 120 that reflects the notional cost of providing energy for heating and domestic hot water in a dwelling – the lower the energy cost, the higher the rating.

## Energy use in the business and community sectors

Industrial and commercial activities account for about 48% of Cheltenham's CO<sub>2</sub> emissions (not including associated road transport) and so improving energy efficiency in these sectors is an important objective. Energy use in the community sector is less easy to quantify, although there are over 400 voluntary sector organisations located in Cheltenham.

The introduction of the climate change levy has increased business costs and in the medium term the cost of carbon will become an increasingly important issue, particularly after 2005 when the UK will need to start importing energy as oil, gas and coal production reduces. All these factors may affect business profits and image and so the importance of good energy management will grow.

The community sector is obviously mainly concerned with keeping running costs down, and energy efficiency will play an important role in reducing the utilities bills for premises. Some organisations are keen to move beyond this to demonstrate their commitment to sustainable energy management, including the use of renewable electricity. (For local examples see case studies 1 and 2 in appendix 2).

### **KEY IMPROVEMENT MEASURES (see action plan for more details)**

**Members of Cheltenham Climate Change Board will work with local agencies to encourage businesses and community organisations to adopt more sustainable energy management practices and to reduce the environmental impact of their operations by:**

- **emphasising the benefits, improving signposting to support organisations and making better use of existing networks and newsletters to promote energy message**
- **encouraging appropriate agencies to initiate free energy checks for business and community groups**
- **encouraging businesses and community groups to adopt EMAS / ISO 14001/ BS 8555 or work towards energy efficiency accreditation**
- **exploring the preparation of an updated green guide for businesses**

## Energy from renewable sources

Renewable energy, such as wind or hydropower, reduces emissions of carbon dioxide as fossil fuels do not need to be burned to produce the energy.

The *Regional Planning Guidance for the South West*<sup>11</sup> suggests that a minimum of 11-15% of electricity production should be from renewable energy sources by 2010. Regen SW, the regional office for renewable energy, is working with key stakeholders to develop renewable electricity targets for the seven counties in the region. Although the potential for wind, hydro, tidal and wave power throughout the South West is considerable, within Gloucestershire options are more limited.

### **Fact box**

Renewables provided 2.8% of electricity generated in the UK in 2000. The 2003 Energy White Paper aims to double the renewables share of electricity generation to 20% by 2020.

The Severn Wye Energy Agency helps facilitate the development of small-scale renewable energy projects under the *Community Renewables Initiative*<sup>12</sup>, and has also established *Gloucestershire Renewable Energy Forum* to develop an action plan for renewable energy in Gloucestershire.

The promotion of renewable energy is an important objective in Cheltenham's community plan and is a key element of this strategy. As an urban area, with the Cotswolds escarpment abutting the town on two sides, and few large watercourses, the scope for renewable energy generation in Cheltenham Borough is likely to be focused on photovoltaics, but opportunities for energy from biomass, ground source heat pumps, wind power and other technologies should also be explored.

Proposals for renewable energy in Cheltenham should be considered within the context of *Gloucestershire Structure Plan Second Review (1999)* and *Cheltenham Borough Local Plan Second Review (draft 2002)*. Further guidance on the principles of incorporating renewable energy in new developments is set out in Supplementary Planning Guidance.<sup>13</sup>

### **KEY IMPROVEMENT MEASURES (see action plan for more details)**

<sup>11</sup> *Regional Planning Guidance for the South West* – GOSW, 2001 ([www.gosw.gov.uk](http://www.gosw.gov.uk))

<sup>12</sup> A support team providing advice and support to potential local community renewable energy projects ([www.swea.co.uk/](http://www.swea.co.uk/))

<sup>13</sup> SPG's on 'Sustainable Buildings' and 'Sustainable Developments' – ([www.cheltenham.gov.uk/libraries/templates/thefuture](http://www.cheltenham.gov.uk/libraries/templates/thefuture))

**Members of Cheltenham Climate Change Board will encourage and promote the generation of energy from renewable sources both locally and further afield to help meet Cheltenham's energy requirements, endeavouring to ensure that Cheltenham meets, and where practicable, exceeds national targets. To achieve this the council will:**

- **support the development of a Gloucestershire renewable energy target and action plan**
- **use electricity from renewable sources when electricity contracts are renewed**
- **support the development of small-scale renewable energy projects meeting local plan criteria and will promote the use of renewable energy in new developments, seeking to implement showcase projects to demonstrate what can be achieved.**

**All Climate Change Board members will:**

- **consider changing to renewable energy sources and will work with community organisations and local businesses to encourage them to use renewable energy**
- **promote the use of renewable electricity to local householders**

## **Reducing emissions from transport**

With road transport accounting for about 25% of the UK's total CO<sub>2</sub> emissions, the way we travel has the potential to support or undermine efforts to limit emissions.

### **Fact box**

*A medium size petrol car produces roughly its own weight in CO<sub>2</sub> every 6000 miles.*

## **Reducing CO<sub>2</sub> emissions from car use in Cheltenham**

The most effective tools to reduce CO<sub>2</sub> emissions from vehicles are likely to be EU and national legislation and taxes. Car manufacturers are reducing average CO<sub>2</sub> emissions from new cars by 25% from 1995 to 2008, and changes to vehicle tax bands and company car taxation are designed to encourage cleaner vehicles.

Given that almost two thirds of our car journeys are less than five miles, local authorities have a major role in helping to reduce CO<sub>2</sub> emissions from transport at a local level by encouraging more walking, cycling and use of public transport.

### **Fact Box**

*If you walked or cycled 3 miles instead of taking the car you would save 1kg of CO<sub>2</sub>.*

*If you travelled from Cheltenham to Edinburgh you would generate:*

- *34 kg of CO<sub>2</sub> using a train or bus*
- *123 kg of CO<sub>2</sub> by using a petrol car (single occupancy)*
- *99 kg of CO<sub>2</sub> by using a plane (but the impact of aviation on climate change is approximately 3 times greater than the CO<sub>2</sub> emissions alone)*

*(Source: National Energy Foundation using DEFRA reporting guidelines)*

**Members of Cheltenham Climate Change Board will support measures to reduce CO<sub>2</sub> emissions from transport in Cheltenham, by reducing the need to travel and encouraging the use of more sustainable alternatives, including greener fuels and technologies.**

## **Transport and land use planning issues**

Cheltenham Borough Council is able to help reduce local CO<sub>2</sub> emissions from transport as a planning authority, as agent to the highway authority, Gloucestershire County Council, and as a major local employer.

Cheltenham's transport strategy derives from the *Local Transport Plan* (LTP)<sup>14</sup>. This sets out how the county council, working with its agents in Cheltenham and Gloucester, proposes to achieve a key objective of controlling the growth in traffic on county roads below national forecasts. Each year Cheltenham Borough Council delivers approximately £1.3m of LTP funded transport schemes to support LTP objectives and targets.

### **Fact Box**

- *On an average weekday 180,000 vehicles use main roads in Cheltenham.*
- *Average car occupancy on these roads was 1.28 per car*
- *Journey to work data from the 2001 census showed that 6% of journeys are by public transport, 7% by bicycle and 17% on foot.*

## **KEY IMPROVEMENT MEASURES (see action plan for more details)**

**The council and its partners will implement Local Transport Plan schemes to deliver the integrated transport strategy and reduce CO<sub>2</sub> emissions from transport. These include:**

- **improvements to bus services delivered through a Bus Quality Partnership with Stagecoach**
- **improvements to the pedestrian environment and cycle network**
- **road safety measures such as improved lighting, signing and traffic calming**
- **reviewing the current LTP and preparing LTP2 to cover 2006-2011**

<sup>14</sup> Gloucestershire County Council Local Transport Plan - [www.gloucestershire.gov.uk/index.cfm?articleID=167](http://www.gloucestershire.gov.uk/index.cfm?articleID=167)

It is also recognised that, as part of a package of transport measures, expanding Park and Ride Services on radial routes in Cheltenham may make a useful contribution towards reducing CO<sub>2</sub> emissions.

### **Effects of climate change on travel patterns**

Warmer, drier summers may lead to increased cycling and walking. However wetter winters could cancel this out, bringing more weather-related variations in traffic levels, and more winter congestion, although fewer frosts will reduce the need for gritting.

### **Employee travel**

Congestion costs UK industry over £20bn a year. 'Travel Plans' can be drawn up by organisations to help to reduce staff commuting and may also include business travel, fleet management and freight issues. Measures covered by a travel plan can help make alternatives to the car more attractive, encourage more sustainable vehicles and reduce the need to travel. (For examples see case studies 3 and 4 in appendix 2). The Cheltenham Travel Plan Group was set up by the borough council in 1999 to share best practice and involve transport users in planning and implementing schemes.

#### **KEY IMPROVEMENT MEASURES (see action plan for more details)**

**Members of Cheltenham Climate Change Board will support the development of travel plans to reduce work-related car use and CO<sub>2</sub> emissions. To facilitate this, Cheltenham Borough Council will:**

- **Maintain the profile of travel plans through Cheltenham Travel Plan Group**
- **Work with the county council and partners to promote travel plans in the area.**

### **Fleet travel**

While most company vehicles are essential business tools, they also contribute to CO<sub>2</sub> emissions. There is an overwhelming case for organisations to adopt effective fleet management measures, to cut costs and improve environmental performance.

#### **KEY IMPROVEMENT MEASURES (see action plan for more details)**

**Members of Cheltenham Climate Change Board will help signpost organisations operating vehicle fleets to sources of information and advice on running fleets more efficiently.**

### **Encouraging alternatively fuelled vehicles**

The Energy Saving Trust's PowerShift programme, launched in 1996, has helped to help kick start the market for alternative, cleaner fuel vehicles in the UK. The programme, through government grants and assistance, aims to encourage cleaner fuel vehicles (Liquefied Petroleum Gas, Compressed Natural Gas, electric and hybrid-powered) to be practically and economically viable.

#### **KEY IMPROVEMENT MEASURE (see action plan for more details)**

**Members of Cheltenham Climate Change Board will encourage other organisations and individuals to actively explore the use of alternative fuels in their activities.**

### **Gloucestershire Airport**

Cheltenham Borough Council is part owner of the airport. Whilst outside the borough, the airport is nevertheless a source of CO<sub>2</sub> emissions. Although emissions from the airport are minimal compared with local road transport, nationally the aviation industry is one of the fastest growing sources of CO<sub>2</sub> emissions and there are growing concerns about the environmental impacts of pollutants from aircraft engines. A study on the long-term role of the airport has been commissioned by Gloucestershire First, which will include an environmental assessment of development options and the impact on CO<sub>2</sub> emissions.

#### **Fact Box**

Aviation currently contributes about 3.5% of greenhouse gases. This could rise to 15% within 50 years. Source – Airport Watch.

#### **KEY IMPROVEMENT MEASURE (see action plan for more details)**

**Members of the Climate Change Board will endeavour to ensure that climate change issues are considered in future plans for Gloucestershire Airport.**

## Reducing emissions from domestic and commercial purchasing

The purchase of goods and services contributes to greenhouse gas emissions in several ways, from transportation through to packaging, the energy efficiency of products themselves and our own shopping habits. By tackling these issues there is significant potential to reduce the emissions created through this process.

### Buying locally produced goods and services

Road transport in Cheltenham accounts for just under a quarter of CO<sub>2</sub> emissions and a significant proportion of this is due to the movement of goods and services. When buying fresh food, purchasing local produce reduces the 'food miles' (the distance food travels from where it is grown to where it is consumed) and hence also emissions. A number of farmers' markets have already been established within Gloucestershire to promote the availability of local food (see case study 5 in appendix 2) and the council is a member of *Gloucestershire Food Links*.<sup>15</sup> The concept of 'food miles' can also be applied to other goods and services, for example buying timber from a local wood or employing a local building firm will reduce transport emissions. The production of a local materials directory (see appendix 2 case study 6) will encourage the use of local building materials and products.

#### Fact box

*In 2002 the average person in the UK consumed 18 tonnes of materials (Green Futures magazine)*

### Factors to consider in purchasing decisions

**Energy efficient products** – buying appliances "A" rated for energy efficiency reduces emissions and encourages the market for more efficient appliances. Many goods using alternative sources of energy are also now available.

**Purchasing 'green' energy** – switching to renewable energy is now easy and prices are now comparable. Friends of the Earth have a league table of suppliers available from [www.foe.co.uk](http://www.foe.co.uk). The website [www.greenprices.co.uk](http://www.greenprices.co.uk) has a calculator to compare suppliers.

**Packaging and disposable goods** – buying products with less packaging and a longer life reduces waste. Buying products made from reused or recycled materials also reduces waste and energy consumption during manufacture, and will encourage the manufacture of more of these goods.

**Shopping habits** – sharing a car to the supermarket, buying in larger quantities to reduce the number of trips that need to be made, or using local outlets can all reduce emissions.

#### Fact box

*Typically a tumble dryer produces 1kg of CO<sub>2</sub> in 60 minutes, a dishwasher produces 1kg in 90 minutes and a fridge produces 1kg in 25 hours.*

#### Fact box

*It takes 350 times more energy to make cans from raw materials than to make them from recycled material. (Green Futures magazine)*

### Commercial purchasing

Commercial purchasers can also encourage their suppliers to consider their environmental performance and the scope to reduce greenhouse gases. Cheltenham's community plan encourages all organisations on the local strategic partnership to develop strategies to reduce the use of unsustainable materials and encourage local products and services. (see case study 1 for an example).

#### Fact box

*Good sources of information about sustainable products are the Ethical Consumer website ([www.ethicalconsumer.org](http://www.ethicalconsumer.org)), the Green Consumer Guide website ([www.greenconsumerguide.com](http://www.greenconsumerguide.com)) or the Green Directory ([www.greendirectory.net](http://www.greendirectory.net)).*

### KEY IMPROVEMENT MEASURES (see action plan for more details)

**Members of Cheltenham Climate Change Board will work with their partners to reduce the use of materials, goods and services that contribute to climate change and encourage local products and services. They will:**

- **Continue to promote local produce, support other opportunities to promote local services and goods and support Gloucestershire Food Links initiatives**
- **Investigate buying local food for in-house events and encourage local hotels and catering businesses to source food locally**
- **Promote energy efficient appliances and products**
- **Develop their own policies for commercial purchasing encompassing suppliers' environmental performance**
- **Promote green energy suppliers and sources of information**

<sup>15</sup> A Gloucestershire not-for-profit company set up to promote local food and products. See [www.foodlinks.info/](http://www.foodlinks.info/)



- **Promote responsible shopping**

## Reducing emissions from waste

When biodegradable waste breaks down in landfill sites it gives off a gas which consists of up to 65% methane and 35% carbon dioxide. As both are potent greenhouse gases it is important to examine the impact of waste disposal when considering climate change.

### Fact box

- 3% of UK greenhouse gas emissions come from methane from landfill sites
- Methane is 21 times more potent as a greenhouse gas than CO<sub>2</sub> over a 100-year period.

## Municipal waste

46,000 tonnes of municipal (household and garden refuse, street sweepings and litter) waste was collected in Cheltenham and landfilled, producing 13.8 tonnes of CO<sub>2</sub> and 0.96 tonnes of methane. 4,700 tonnes or 9.3% were recycled.

### Fact box

About 400 million tonnes of waste is produced in the UK each year, ranging from industrial, commercial and domestic waste to construction, mining, sewage and agricultural waste. Around 83% of municipal waste is landfilled, 8% recycled and 1% composted (source Grantfinder)

The Government has ambitious targets for reducing the amount of waste landfilled. The *Gloucestershire Waste Management Strategy*<sup>16</sup> sets a recycling and composting target for Cheltenham of 24% by 2005/6. To help meet this target, Cheltenham Borough Council has introduced a kerbside-recycling scheme to 39,000 households. This will initially collect glass, paper and tins but the range of materials and the number of households will be reviewed in future years. This scheme should decrease CO<sub>2</sub> emissions by 3.9 tonnes and methane emissions by 0.3 tonnes by 2005/6.

All waste management policies will be reviewed to ensure they provide the best practicable environmental option. The council works with community groups and other agencies, especially the *Gloucestershire 'Get It Sorted' Waste Campaign*<sup>17</sup>, to promote waste reduction and re-use to households, businesses and community groups. An example of where reuse is being encouraged is the *'RECLAIM – reusing resources for Cheltenham'*<sup>18</sup> project. At present this project collects furniture and redistributes it within the community.

## Industrial and commercial waste

The total quantity of industrial and commercial waste landfilled is difficult to gauge as this waste stream is handled by many different agents. The national *Waste Strategy 2000* sets a target of reducing the amount of industrial and commercial waste going to landfill to 85% of the 1998 level by 2005. In Gloucestershire this could mean diverting about 60,000 tonnes of waste from landfill. Cheltenham will need to contribute a significant amount to this tonnage. Businesses and other organisations can help meet this target by tackling waste and improving resource efficiency (see case study 7 in appendix 2 for an example).

## KEY IMPROVEMENT MEASURES (see action plan for more details)

**Members of Cheltenham Climate Change Board support initiatives to reduce, reuse and recycle the amount of waste generated in Cheltenham. Cheltenham Borough Council will:**

- **Review waste management policies and evaluate further options for waste minimisation and recycling to support recycling and composting targets**
- **Introduce a kerbside recycling scheme, aiming to extend the numbers of households participating and range of materials collected, and closely monitor performance**

**All members of the Climate Change Board will work with their partners to promote waste reduction and re-use with schools, businesses, community groups and individuals.**

<sup>16</sup> Gloucestershire Municipal Waste Management Strategy – 2002 ([www.gloucestershire.gov.uk](http://www.gloucestershire.gov.uk))

<sup>17</sup> A motivational campaign that focuses on household waste reduction, recycling and composting, developed in partnership with the seven local authorities ([www.getitsorted.org/](http://www.getitsorted.org/))

<sup>18</sup> For more information on Cheltenham Furniture Recycling Scheme contact 01242 228823.

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## Sustainable construction – reducing energy use and adapting to climate change in development proposals

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### Reducing energy use in new building and refurbishment projects

The process of constructing new buildings, redeveloping existing buildings and maintaining and heating completed structures accounts for 69% of CO<sub>2</sub> produced in the UK.

### Raising energy efficiency standards above the Building Regulations

Parts L1 and L2 of the Building Regulations set standards to ensure high levels of insulation and efficient heating systems in developments. The government is committed to raising energy efficiency standards and is reviewing insulation values in the current Buildings Regulations.

In designing development schemes the construction industry generally regards the Regulations as a maximum, rather than minimum, standard. Most buildings are designed to meet the regulations, but go no further to address climate change issues.

#### **Fact box**

*By making existing and new structures more thermally efficient and airtight, EuroACE estimate that European CO<sub>2</sub> emissions could be reduced by 430 to 452 million tonnes per year by the end of 2010. This is around one-eighth of current emissions. Implementation would create over 3 million job/years of employment.*

Building control services, whether public or private sector, are provided to ensure that construction projects meet the Regulations, but they do not have the legal backing to request higher standards. Market forces cannot be relied on to drive a change in the construction industry in Cheltenham. Change will need to be led by the council, with training and education the key mechanism to change the industry's culture.

### Encouraging more sustainable construction techniques

Council services can encourage more sustainable building designs through the provision of sound and practical information and advice. Council officers have limited knowledge of sustainable construction techniques, however, and will require training to raise the awareness and knowledge of these issues if they are to offer useful guidance.

The planning process can set the context for encouraging more sustainable construction techniques. The council's supplementary planning guidance (SPG) documents 'Sustainable Developments' and 'Sustainable Construction'<sup>19</sup> suggest how construction projects can become more sustainable.

To assist with raising the profile of sustainable building practices a checklist for planning applications could be developed, which council staff and designers could use. Such a checklist should enable sustainability issues to be addressed early in the design process, whether at a Planning or Building Control stage.

Independent environmental appraisal and rating systems such as the BRE's BREEAM scheme and EcoHomes assess development schemes and enable projects to be compared. All new housing development receiving Housing Corporation funding has to be built to this standard. Phase 4 of the regeneration work in Hesters Way has achieved an EcoHomes rating of 'good' (see case study 12 in appendix 2).

### Sustainable refurbishment projects

In a historic town such as Cheltenham much of the development undertaken is refurbishment or conversion. This offers opportunities to extend the life of existing buildings and reduce the materials used in construction. The basic design of the buildings usually makes them thermally less efficient than a new structure, however, and also less able to deal with a more severe climate. There is an urgent need to identify solutions that satisfy the combined needs of conserving natural resources and protecting the historic and aesthetic character of buildings.

Refurbishment projects also offer the potential to use recycled materials, removing surplus materials from the waste stream and reducing the demand for new products. Case study 6 in

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<sup>19</sup> Cheltenham Borough Local Plan Supplementary Planning Guidance - [www.cheltenham.gov.uk/libraries/templates/thefuture.asp?URN=1248&FolderID=0](http://www.cheltenham.gov.uk/libraries/templates/thefuture.asp?URN=1248&FolderID=0)

appendix 2 gives an example of a resource that could, when available, provide invaluable information on local and sustainable materials.

## **Adapting to climate change**

### **Existing buildings**

Cheltenham is an old town with many buildings dating back to the Regency period. These buildings were designed and constructed when technology, materials and climate were substantially different to today's environment.

As the climate changes existing buildings will need to be able to maintain an acceptable internal environment when the external conditions become hotter, wetter and more violent than now. Points of particular concern with older buildings will be:

- More extreme soaking and drying of soil may cause subsidence and heave.
- Warmer temperatures may mean existing buildings are no longer comfortable to live in without artificial cooling, but the need for double-glazing may reduce.
- Wetter winters may increase problems of damp in older properties.
- More extreme weather will cause greater storm damage.

Existing buildings will need to be modified to deal with more extreme weather and to make them more comfortable without the need to resort to mechanical cooling systems (fans) and air conditioning, which will increase energy use and CO<sub>2</sub> emissions.

### **New building projects**

New projects offer an opportunity to introduce design measures that will vastly improve the thermal efficiency and sustainability of the building at reasonable cost and ease. It will always be easier to design for sustainability in a new build structure than to up-grade an existing building. Building designers and constructors take advantage of the design technology and knowledge currently available. Designers of new buildings will need to address issues of maximising solar heat gain, providing adequate and efficient natural ventilation, managing higher volumes of rainwater, recycling water to overcome water shortages, using materials which minimise damage to the environment throughout their whole lifecycle and considering the scope to use and generate renewable energy. A good initial source of information is the Association of Environment Conscious Building [www.aecb.net](http://www.aecb.net). See case study 8 in Appendix 2 for details of Cheltenham's first eco-house.

### **KEY IMPROVEMENT MEASURES (see action plan for more details)**

***This climate change strategy aims to promote high standards of sustainability in new buildings and refurbishment projects, through a combination of planning policy and building control advice and information. In particular it will encourage sustainable energy management in development schemes incorporating energy efficiency and renewables.***

***To support this objective Cheltenham Borough Council will:***

- ***Lobby the Government to increase Building Regulations standards***
- ***Ensure development plan and associated guidance fully reflect sustainable development objectives***
- ***Distribute Sustainable Construction and Sustainable Developments leaflets with all planning and building regulation application forms***
- ***Support the development of the Gloucestershire Local Materials Directory and other initiatives promoting materials with a low environmental impact***
- ***Provide training for local authority staff and members, construction professionals and the public to raise awareness of more sustainable building techniques and to facilitate the provision of accurate and practical information on new technology***
- ***Explore the development of a sustainability checklist for planning applications***



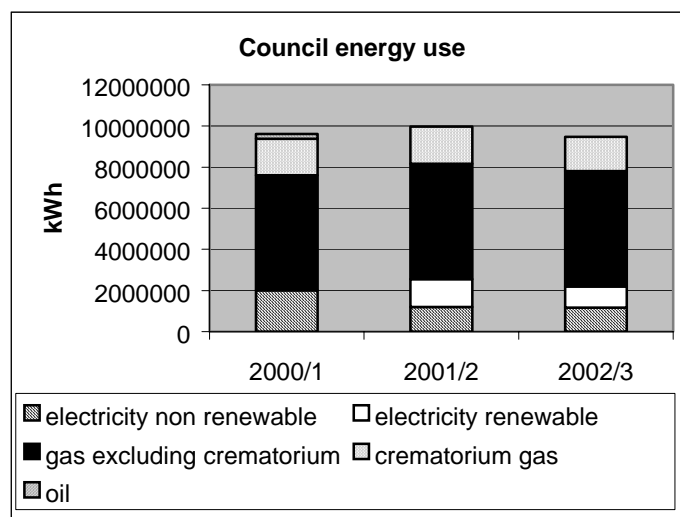
## Greenhouse gas emissions from Cheltenham Borough Council's activities

This section looks at how much carbon dioxide the council produces from its own operations and what steps it is, or will introduce, to reduce emissions.

### Reducing emissions from the council's use of energy

2000/1 is the first year with reasonably accurate energy consumption data and has been used as a base year from which to work. The council has three large sites – the Municipal Offices, Town Hall and Depot – plus a number of smaller sites. Figures for the recreation centre, a high-energy user, are not included, as management of the centre was contracted out until April 2003.

After an overall increase in 2001/2 the figure for energy use in council buildings dropped in 2002/3 to about 9.5 million kilowatt-hours (kWh) of energy. The council uses about 3 times more gas than electricity. By far the biggest user of gas is the crematorium, accounting for just under a quarter of gas used.

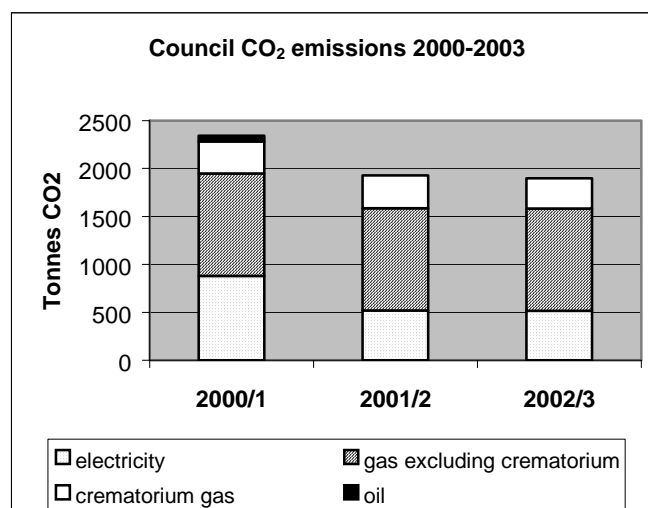


The council began a process of switching to renewable electricity in April 2001 and has been implementing energy efficiency improvements to council buildings for a number of years.

### CO<sub>2</sub> emissions

CO<sub>2</sub> emissions from energy use in 2002/3 totalled just over 1,881 tonnes, a 20% reduction from the estimated 2,342 tonnes in 2000. Emissions from electricity usage dropped by 43%, largely due to the switch to a renewable energy supply, but also reflecting the overall decrease in energy use and the higher ratio of gas to electricity usage. (Gas produces less CO<sub>2</sub> per kWh than electricity.)

The council has set a target to reduce energy consumption in its buildings by 5% per annum over the next two years. **It will endeavour to reduce its carbon dioxide emissions from energy use by 50% from 2000 to 2005; 37% by switching to green tariff electricity supplies, and the remainder through energy conservation measures and exploring the scope to generate renewable energy on-site.**



Since 1997 a number of measures to reduce CO<sub>2</sub> emissions have been introduced to the council's operational buildings. These include:

- **energy and water efficiency measures**, including fitting new 95% efficient gas condensing boilers and a new CHP unit at the recreation centre (see case study 9 in appendix 2).
- **Monitoring** - centralised monitoring arrangements are being developed for energy bills. More detailed analysis of energy and water data is planned.
- **Use of renewably sourced electricity** - 100% of the council's electricity now comes from a mix of wind, hydro and landfill gas, all of which are considered to be carbon neutral. However the council will continue to investigate sourcing all of its electricity from renewable sources that avoid burning.

The potential for council properties to generate their own electricity from renewable sources will also be explored in partnership with Severn Wye Energy Agency.

**KEY IMPROVEMENT MEASURES (see action plan for more details)**

**In order to meet its own CO<sub>2</sub> emissions reduction target of 50% from 2000 to 2005 Cheltenham Borough Council will :**

- **Continue introducing energy saving measures to CBC operational buildings as resources permit to meet the 5% per annum energy consumption reduction target**
- **Develop energy and water monitoring arrangements for all CBC buildings, set reduction targets for each building and identify further scope for improvement**
- **Ensure that 100% electricity used by CBC is purchased from renewable sources**
- **Investigate the scope to generate renewable energy at CBC premises**
- **Explore opportunities for reducing energy use on computer equipment**

**Street lighting**

The county council has an agency agreement with the borough council to cover street lighting. The county council retain control over the energy contract and the specification of new equipment.

**Water use**

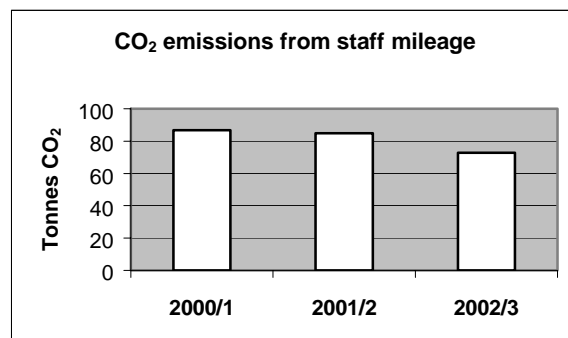
The collection of water data is proving difficult as some buildings are billed by rateable value. Centralised billing will be introduced shortly, which should enable some data collection.

**Reducing council transport-related emissions**

**Staff commuting and work travel**

The mileage claimed for work travel by staff has dropped by 16% since 2000/1, although the number of employees has stayed fairly static. Some of the decrease may be explained by the increased use of email and changes in job descriptions reducing the need to travel.

The council has started to prepare a corporate travel plan. A 'Travel to work' survey was undertaken in June 2003 and the results will be used to inform the priorities for the travel plan.



**KEY IMPROVEMENT MEASURE (see action plan for more details)**

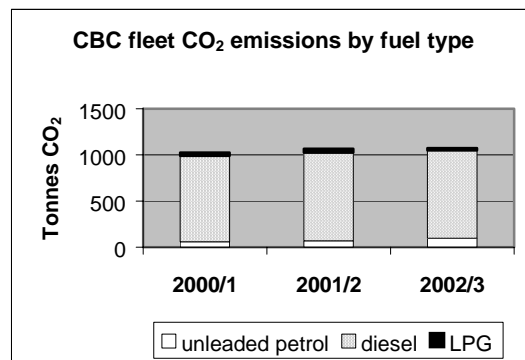
**Cheltenham Borough Council will prepare and implement a Corporate Travel Plan with the objectives of encouraging more employees to use alternatives to the car for travelling to work, reducing work-related car use and encouraging the use of low emission vehicles.**

**Fleet vehicle use**

The council owns a fleet of about 100 vehicles, ranging from refuse lorries to ride-on lawnmowers, which cover about 600,000 miles per annum. Cheltenham Borough Homes have 34 vehicles and the council hires a further 20-25 vehicles.

As a whole, 402,711 litres of fuel were used during 2002/3, 86% of which was diesel. Fuel use is increasing, reflecting the need to do more operational trips to provide improved council services. As a result, it is difficult to set any reductions targets for the fleet although it is possible to set targets to improve fuel efficiency and reduce CO<sub>2</sub> emissions.

**The council will aim to improve the gross MPG of the fleet by 1% per annum and to reduce CO<sub>2</sub> emissions per litre of fuel consumed by 1% per annum.**



In line with the council's Environmental Management Strategy steps have been taken to reduce the fleet's impacts on the environment and there are now 18 LPG vehicles. CO<sub>2</sub> emissions have reduced by about 10% per converted vehicle, however the use of LPG has brought higher

maintenance costs and the key criteria for purchasing new vehicles are now fuel efficiency and CO<sub>2</sub> emissions.

All council diesel vehicles use ultra low sulphur fuel, which helps to reduce local pollutants but not CO<sub>2</sub> emissions. The use of biodiesel is being explored but local supplies are currently poor. The use of Compressed or Liquefied Natural Gas (CNG/ LNG) has also been explored, but the cost of storage facilities is too expensive. The council is keeping abreast of developments in the electric and electric-hybrid field, aware of the potential to use renewable energy, and will also explore the potential of the Green Fleet Advisory Service and Motorvate to help meet the CO<sub>2</sub> reduction target.

Fleet vehicles are maintained to high standards to ensure optimum fuel efficiency, although more specialist equipment is needed. Driver training on reducing fuel consumption could be introduced.

**KEY IMPROVEMENT MEASURES (see action plan for more details)**

**Cheltenham Borough Council will implement measures to improve council fleet fuel efficiency by 1% per litre of fuel used and reduce CO<sub>2</sub> emissions by 1% per annum by :**

- **Basing vehicle purchasing decisions on fuel efficiency and CO<sub>2</sub> emissions**
- **Continuing to investigate the suitability of greener fuels for fleet vehicles**
- **Maintaining vehicles to manufacturers and MOT standards, and investing in equipment to monitor emissions to higher standards**
- **Exploring opportunities to introduce driver training on fuel-efficient driving**

## **Reducing other council emissions**

### **Emissions from waste**

The Gloucestershire Waste Management Strategy stresses the importance of councils demonstrating commitment to sustainable waste management. All authorities are committed to reviewing policies impacting on waste over the next three years.

Data on the volumes of waste collected from council operational buildings is not available. Although this issue has been identified as a priority in the council's emerging corporate plan, action in this area is limited due to staff resourcing.

**KEY IMPROVEMENT MEASURE (see action plan for more details)**

**Cheltenham Borough Council will review recycling in the Municipal Offices and identify improvement measures.**

### **Emissions from council purchasing and use of materials**

The council spends over £30 million a year on purchasing, much of which is likely to have an impact on the environment and climate change. It recognises that it has to adopt policies to deliver more sustainable purchasing and play a lead in setting a good example to the community, in line with Cheltenham's community plan.

To support this process a new post of Corporate Procurement and Contracts officer has been created. Work is now underway on a procurement strategy which will take account of sustainability and climate change considerations. Guidelines for all types of products and for managing contractors and suppliers will also be produced.

**KEY IMPROVEMENT MEASURES (see action plan for more details)**

**Cheltenham Borough Council will develop a council procurement strategy and guidelines incorporating sustainability objectives**



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## Effects of climate change on local wellbeing and how to adapt

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This section looks in more detail at some of the impacts of climate change on Cheltenham and proposes a number of measures to help us adapt. It covers impacts on air quality, flooding and water supplies, the natural environment, human health and tourism and the economy.

### Air quality impacts

Global climate change will affect air quality in Cheltenham. Temperature changes, amounts of sunshine and increasing global pollution will affect ozone levels in the lower atmosphere. The annual mean background concentration of ozone in Cheltenham could rise by 40% by 2080. This higher background level may affect Cheltenham's trees and other vegetation. It is also important because it is a higher baseline from which peak levels would rise on hot summer days, exacerbating respiratory problems. It is predicted that other pollutants could reduce, as changes in wind and weather patterns help disperse pollutants such as nitrogen dioxide and particulate matter (PM10). Overall emissions of pollutants will also be lower due to emission controls.

#### **Fact Box**

- *High ozone levels can be found in the UK during fine weather in summer, often associated with polluted air drifting from the continent.*
- *Monitoring at remote sites across the UK has shown a rise in background ozone levels. Emissions of the gases responsible for ozone production are likely to grow in the future.*

### Action to limit air pollution

There are currently a range of UK pollution controls to limit ozone-producing emissions. Central to these are emissions controls over volatile organic compounds (VOC's) from industrial processes and motor vehicles exhausts. These have achieved widespread reductions in ozone levels and are being strengthened by the implementation of the EC solvent emissions directive.

Ensuring that activities in Cheltenham comply with these regulations helps reduce ozone levels, however its ability to travel large distances means that background ozone levels are likely to increase in spite of local action.

#### **KEY IMPROVEMENT MEASURES (see action plan for more details)**

***The council will continue to review and assess local air quality<sup>20</sup> and publish information about local air quality on its website. It will also:***

- ***Develop an ozone episode warning system***
- ***Raise awareness of the need to minimise the use of volatile organic compounds***

### Flooding and water shortage impacts

#### Flooding

Cheltenham has a number of watercourses crossing the town. Flooding on watercourses is already a problem and can pose a risk to life and damage properties, leading to difficulties in obtaining insurance. More frequent winter rainfall and 'extreme events' could impact on floodplain areas around Sandford Park, Cox's Meadow and Wymans Brook, which are already prone to flooding. If nothing is done to help accommodate flooding now, climate change could mean more frequent flooding and more areas at risk. Clean water supplies could also become contaminated.

#### **Sustainable urban drainage systems (SUDS)**

*SUDS are designed to manage surface water runoff in a more sustainable way than traditional drainage systems by using natural approaches to runoff management.*

#### **What are we doing now to limit the risk of flooding?**

New development can significantly increase the risk of flooding by increasing the amount of hard standing or removing flood capacity when building occurs within the flood plain. The local plan review contains guidance on flood risk assessment and development in flood risk areas. The council implements this policy as part of development control. Where major schemes are proposed, developers can be required to construct flood alleviation works. Developers are also required to limit runoff through implementing sustainable drainage systems as part of new

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<sup>20</sup> Cheltenham air quality assessment - May 2003 ([www.cheltenham.gov.uk/libraries/templates/ourservice.asp?URN=559&FolderID=0](http://www.cheltenham.gov.uk/libraries/templates/ourservice.asp?URN=559&FolderID=0))

development. The council has adopted supplementary planning guidance on sustainable drainage systems.<sup>21</sup>

### **Flood alleviation works**

The Environment Agency is responsible for main rivers and is implementing a flood alleviation scheme to upgrade the flood capacity of the River Chelt corridor. The council is working closely with the Environment Agency to progress the final part of the scheme, which received planning permission in January 2004.

Works to alleviate flooding in parts of Prestbury have been carried out in the past. Further works are needed to reduce flood risk and a flood risk assessment of other non-main river watercourses is also needed. Both of these are subject to resources. In addition, ways to limit surface water runoff from existing development, for example by using water butts, could be encouraged.

### **Adaptation**

There are a number of measures that can help adapt to the increased risk of flooding associated with climate change. Measures already being implemented include:

- Identifying areas which can flood without high risk of damage to properties or injury, and using these areas for storage of storm water or to carry flood flows.
- Designing development within the flood plain to ensure that it does not reduce flood storage and that in the event of flooding it does not cause injury to people or damage to property.

Other measures that may need to be considered in the longer term include:

- Locating emergency services and hospitals in areas which are at very low risk of flooding.
- Identifying measures to protect individual properties and advising householders.

### **Water shortages**

Current analysis suggests that summers could become drier and winters wetter, with more rain in total. However the demand for water is difficult to predict as it depends on personal choice. Smaller household sizes could lead to higher demands, with peak demand in the summer months when there is less rainfall.

The Environment Agency has identified a number of measures to protect future water supplies<sup>22</sup>, including enhancing supplies by about 5%, promoting household and business water efficiency and metering, and controlling leaks.

#### **Fact box**

- Households use about 150 litres of water a day – enough to fill 15 buckets.
- Severn Trent Water estimates that only around 1% of tap water is actually drunk. 33% is flushed down the toilet. A further 29% is used for bathing, washing machines and dishwashers.

Educating the community about water conservation will become increasingly important. The Environment Agency publishes tips on its website ([www.environment-agency.gov.uk](http://www.environment-agency.gov.uk)). Severn Trent Water works with a number of organisations to encourage domestic and business water conservation. Education programmes could also include encouraging soakaways, grey water recycling and rainwater harvesting.

### **KEY IMPROVEMENT MEASURES (see action plan for more details)**

**To reduce the risk of flooding Cheltenham Borough Council will continue to :**

- **implement the local plan policy on flood risk as part of development control policy**
- **require sustainable drainage systems to be implemented as part of new development where possible**
- **work with the Environment Agency to upgrade flood capacity of River Chelt corridor**
- **explore the need for flood alleviation work in Prestbury, and funding opportunities, and consider the need for flood risk assessment on other non-main river watercourses.**

**Members of Cheltenham Climate Change Board will encourage water conservation by:**

- **exploring opportunities to encourage grey water recycling and the use of water butts**
- **continuing to actively educate the community about the need for water conservation.**

<sup>21</sup> Supplementary Planning Guidance 'Sustainable Drainage Systems' adopted April 2003 ([www.cheltenham.gov.uk](http://www.cheltenham.gov.uk))

<sup>22</sup> Environment Agency South West Region Water Resources Strategy - published March 2001 ([www.environment-agency.gov.uk](http://www.environment-agency.gov.uk))



## Natural environment impacts

### Natural environment and biodiversity

Climate change is likely to have a considerable impact upon ecosystems both locally and globally. Plants and animals are essential to our lives, not only in terms of providing food, medicines and clothing but also in improving own quality of life. It is vital to conserve a wide range of species, habitats and ecosystems for the future.

Earlier springs, longer frost-free seasons and reduced snowfall could affect wildlife breeding times and lengthen the growing season. Species will have to deal with new predators, and diseases. Summer water supplies will become critical. Some existing drought-sensitive natives may be lost, including species like beech or oak, while weeds and pests may be more prolific, requiring more control. Cheltenham's landscape setting will change, although it is not yet possible to say how.

*Gloucestershire Biodiversity Action Plan (BAP)* has been prepared to enhance wildlife in the county and Gloucestershire Biodiversity Partnership coordinates its delivery. To support the BAP, the council has designated a number of Local Nature Reserves within Cheltenham and is undertaking conservation work at Leckhampton Hill. It will also carry out a biodiversity audit of the borough and produce a nature conservation strategy, which will include climate change impacts.

### Management of public open spaces

Cheltenham has many parks and gardens and public open spaces. As the climate changes there is likely to be greater use made of these areas. The council's emerging green space strategy will consider new approaches to managing these areas within the changing climate. As many of these practices may also apply to private gardens the council will also have an educational role to play.

Display planting may need to move towards more low-maintenance, drought tolerant species and there may also be opportunities to include more tender plants. Shading of public spaces will become increasingly important. New or improved water features will help cool open spaces; playing fields and areas of sports turf may have to move away from natural grass surfaces. Sustainable urban drainage systems (SUDS), green roofs and rooftop gardens could be incorporated into the design of spaces and surrounding buildings. Cheltenham with its outstanding reputation as a garden town could lead nationally on open space management in this respect.

### The tree stock

Trees absorb carbon dioxide and pollutants, and filter solar radiation. The town needs a varied tree stock to ensure that significant numbers thrive in future climates. Trees will need to be carefully monitored during drought years to ensure that they are not weakened so much that they could blow over.

The council's emerging urban trees strategy will consider the impacts of climate change on trees and the scope for new planting to aid carbon sequestration (planting trees to absorb carbon dioxide from the atmosphere and help offset CO<sub>2</sub> emissions) and also to provide shade for buildings.

#### **Fact box**

*The Royal Commission for Integrated Pollution says that to offset CO<sub>2</sub> emissions over the next 50 years, a forest the size of Europe will need to be planted (Source: Green Futures Magazine)*

### Cotswolds Area of Outstanding Natural Beauty (AONB)

22% of Cheltenham Borough lies within the Cotswolds AONB and the council is one of 34 organisations making up the Cotswolds AONB Partnership. The partnership's *draft management plan*<sup>23</sup> recognises that climate change could radically alter the AONB. The council will continue to work with the partnership to ensure that climate change does not harm the special character of the Cotswolds.

### Allotments and community gardening

The council is keen to raise the profile of allotments and community gardens to encourage gardening skills and raise awareness of climate change and sustainable gardening issues, and is developing a project specifically to achieve this. (See case study 10 in appendix 2.)

## **KEY IMPROVEMENT MEASURES (see action plan for more details)**

<sup>23</sup> Cotswold AONB Partnership draft management plan - ([www.cotswoldsaonb.com/management.htm](http://www.cotswoldsaonb.com/management.htm))

**The council will:**

- **undertake a biodiversity audit and produce a nature conservation strategy.**
- **develop a comprehensive and integrated green space strategy for Cheltenham.**
- **explore opportunities to incorporate drought tolerant plants in display planting**
- **produce an urban trees strategy which will address climate change issues and explore opportunities to offset carbon emissions through sustainable new planting**
- **continue working with AONB partners on climate change issues**
- **develop an allotments and community gardening project in the town**

## Health and social impacts

Evidence suggests that climate change will have significant effects on health in the UK<sup>24</sup>. These range from more deaths from heat waves, food poisoning or poorer air quality to more indirect impacts, such as increased mental health problems from stress from property damage caused by storms and flooding.

### Direct health effects of climate change

**i) Temperature related rates of illness and death** – in the UK, death rates are significantly higher in winter. As the climate changes there could be fewer cold related deaths (60,000 per annum compared to 80,000 under current climate)<sup>24</sup>. However an increase in summer related deaths, especially among the elderly, is also predicted, caused by higher temperatures and air pollution associated with warm weather.

**Fact box**

*An estimated 800 heat related deaths currently occur in the UK per year. By 2050 this is predicted to increase to about 2800 per year, with more cases likely in urban zones because of the "heat island" effect of built-up areas.*

**ii) Effects of Ultra Violet (UV) radiation** – exposure to UV radiation in direct sunlight can cause a number of illnesses, particularly sunburn, skin cancer and cataracts. A likely increase in outdoor leisure pursuits, combined with the increase in harmful UV rays reaching the Earth's surface because of ozone layer depletion, is likely to increase the risks of sun-related health problems.

**iii) Incidences of food poisoning** – food poisoning is associated with warm weather and can lead to death in the elderly or sick. Climate change is likely to lead to more cases of food poisoning<sup>24</sup> as high temperatures favour the growth of harmful microorganisms in food and will encourage more outdoor eating, especially barbeques.

**iv) Refrigeration of perishable foods and temperature-sensitive medicines** – as average temperatures rise, refrigeration equipment will need to work harder to maintain lower temperatures and old appliances may be unable to improve performance. While legislation already exists to regulate temperatures in food businesses there is little guidance for householders.

**v) Effects of extreme weather events** – the predicted increase in gales and flooding may cause more injuries through people being blown over in high winds, hit by flying debris, swept away in water flows or involved in traffic accidents.

### Indirect health effects of climate change

**i) Disturbances to ecological systems** – warmer temperatures will encourage the survival of microorganisms and pests, including those harmful to human health. This will increase the likelihood of diseases such as malaria spreading, although it is unlikely to pose a major problem in the UK. Other diseases and irritations caused by ticks, flies and fleas may also increase.

**ii) Effects on water-borne diseases** – water supplies may be affected in terms of quality, quantity and availability. Outbreaks of Legionnaires' disease are more likely due to increased use of air conditioners/humidifiers. Water-borne infections may increase as people travel abroad more.

**iii) Impact of air pollution** – air pollution is a potential danger to health, causing deaths and hospital admissions from allergies, asthma and breathing disorders.

<sup>24</sup> Health effects of Climate Change in the UK - Department of Health 2001. ([www.doh.gov.uk](http://www.doh.gov.uk))



## Measures to address the impact of climate change

Many of the health impacts covered above can be most effectively tackled through educating the public and industry. The Department of Health's *Infectious Disease Strategy*<sup>25</sup> proposes more cooperation with local authorities on health education and promotion to control diseases. The council already works closely with the Health Protection Agency and other Gloucestershire authorities on health promotion and will ensure this includes climate change impacts.

Resources have limited the council's ability to pursue promotional or educational activities on food hygiene or infectious disease control. With additional resources talks in schools or other events could be provided, with printed material for distribution or display in public buildings, GP's surgeries, on the council website etc.

### **KEY IMPROVEMENT MEASURES (see action plan for more details)**

**Members of the Climate Change Board will continue to work with the Health Protection Agency and other partners to raise awareness of the increased risk to health from climate change. In particular, they will endeavour to:**

- **Provide advice on staying cool in hot weather, protection against sun exposure and safeguarding health when visiting areas where malaria and other diseases are endemic**
- **Encourage improved ventilation of homes, public buildings, hospitals, other institutions and workplaces to avoid the need to change working hours to cool times of the day**
- **Raise awareness of health risks for outdoor workers and undertake risk assessments for council employees working outdoors**
- **Support Food Standards Agency initiative to reduce food poisoning by 20% by 2006**
- **Lobby for improvements to the food production chain especially for meat products**
- **Provide publicity on refrigeration issues**
- **Encourage the provision of extreme weather warnings to civil defence bodies**

## Economic development and tourism impacts

Cheltenham is fortunate to have a thriving local economy. It is recognised, however, that the impact of climate change on the local economy will be significant.

### **Impact on businesses**

The potential impact of climate change on business is huge; there will be more disruption from flooding and storms, affecting telecommunications, transport and insurance, the working environment will be hotter in summer, but there will also be benefits for businesses able to adapt to new opportunities.

Financial and business services are key sectors in Cheltenham's economy. The impact on these businesses could be significant. Insurance companies are vulnerable to storm and flood losses and there may be more health insurance scheme claims. Lending institutions may be vulnerable to losses from properties in flood risk areas.

#### **Fact box**

- *In 2000 Cheltenham had a gross domestic product (GDP) of 126% of the national average*
- *Its key sectors are financial and business services (28 % of GDP); manufacturing (18 % of GDP); and distribution, hotels and catering (18% of GDP). (This sector includes retailing and tourism.)*
- *Cheltenham is a key sub-regional retail centre with just under 8,000 people employed in this sector and an output of £190m*
- *Tourism also employs about 8,000 people in the town, bringing in some £235m to the local economy.*

The likely increased costs of air travel may have a detrimental effect on local engineering industries, but there may also be opportunities to develop innovative solutions to climate change impacts, especially in the fields of renewable energy and other environmental technologies.

### **KEY IMPROVEMENT MEASURES (see action plan for more details)**

**To reduce the impact of climate change on businesses in Cheltenham, members of the Climate Change Board will :**

- **Increase awareness of climate change and its impacts with the business community**
- **Encourage companies to undertake their own audits and risk assessments**
- **Encourage businesses to exploit opportunities of climate change**

<sup>25</sup> *Getting ahead of the curve – a strategy for combating infectious diseases* – DoH, 2002 ([www.doh.gov.uk/cmo/idstrategy/](http://www.doh.gov.uk/cmo/idstrategy/))

### **Impact on residents**

The economic impact on residents will be significant. Potential impacts will come from increased insurance costs, or problems with getting insurance cover, and property depreciation. These factors will need to be addressed in strategies to support vulnerable groups.

### **Impact on tourism**

Hotter, drier summer weather could have a major impact on tourism in Cheltenham, especially if destinations abroad become less popular as a result of climate change. A longer and warmer summer may increase visitors in rural locations, especially the Cotswolds. Although this will benefit the local economy, increasing pressures on local infrastructure and environmental systems may arise. Any growth in tourism will need to be carefully managed to minimise environmental impacts. Increased visitor numbers are likely to put considerable pressure on the local road networks. How tourists travel to and around the town will become increasingly important.

Rather than having a single major tourist attraction, the council has helped develop a range of events and festivals to attract visitors to the town and has promoted the 'café culture'. Although most festivals are reasonably weatherproof, town centre improvements being delivered as part of the civic pride scheme will need to be resistant to weather.

### **KEY IMPROVEMENT MEASURES (see action plan for more details)**

***To reduce the impact of climate change on tourism, Cheltenham Borough Council will:***

- ***Raise awareness of climate change with tourism partners and promote sustainable tourism***
- ***Encourage the café culture***
- ***Plan for more weather-proof tourist attractions, and ensure town centre improvements are resistant to extreme weather***

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## Raising awareness and understanding of climate change

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Evidence supports the idea that climate change is, and will continue to happen. There are many measures that can be taken both to mitigate against increasing climate change and also adapt to it. The challenge is firstly to engage with the community to raise awareness of the issue and secondly to encourage action to address it. In some cases this will require a real culture change to achieve.

Global issues such as climate change can be seen as being too large to tackle and communities and individuals may feel powerless to act. However these issues impact on local communities and there are many simple measures that could be taken which, collectively, would make a difference to local quality of life. Individuals need to be encouraged to feel that they have a role to play and how they may benefit from taking simple steps. There is also a need to educate people to equate their own behaviour with being part of the problem.

**Quote**  
*"If you think you are too small to have an impact, try going to bed with a mosquito." Philip Elmer, DeWitt writer on technology and change*

Although climate change is likely to have some positive effects on the Cheltenham, there is a need to recognise the negative effects, which are likely to have a much greater impact if nothing is done to tackle them. By tackling these negative effects, the quality of life in Cheltenham in a changing climate is likely to be at least maintained.

### Community awareness of climate change in Cheltenham

In late 2001 the council asked it's citizens' panel, Cheltenham Viewpoint<sup>26</sup>, what they knew about climate change and were encouraged by the results, which demonstrated a level of knowledge within the community already and a commitment to more sustainable lifestyles.

There are a number of vehicles that can be used to raise awareness of the issue and encourage people to make changes. These could include articles in in-house or community publications, training sessions, leaflets and web material demonstrating the benefits of measures and with a clear signposting service for all sectors.

A number of organisations are already working on raising awareness within the community. Vision 21 works with community organisations and schools, Cheltenham Centre for Change runs short courses on sustainable living and the Gloucestershire Environmental Business Forum provides specialist training for small businesses. (See case study 11 in appendix 2).

The University of Gloucestershire is the leading educational establishment in the region working on climate change and has significant expertise. It organised Cheltenham Climate Change Forum in 2001 and has strong links with the UK Climate Impacts Partnership and C-CLIF (Centre for Climate Change Impacts Forecasting). The university also offers a postgraduate certificate in climate change management.

### **KEY IMPROVEMENT MEASURES (see action plan for more details)**

**All the members of the Climate Change Project Board will need to act as champions in their field to encourage others to take up the challenge of climate change. In particular, they will work together to:**

- **Raise awareness of climate change within the community**
- **Ensure that the most up to date information about the potential impact on Cheltenham is made available and provide signposting service for sources of information and advice**
- **Raise awareness of practical measures that can be taken, tailored to specific business sectors, households & individuals, schools, the young and community groups**
- **Play a leadership role in demonstrating what can be achieved and the benefits.**

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<sup>26</sup> **Cheltenham Viewpoint** is a panel of 1,000 local residents, business, community and voluntary organisations. The council consults with the panel on issues affecting the town.



**APPENDIX 1 – Action plan**

| Existing or proposed improvement measure  | Target/timescale/possible performance indicator   | Lead officer/agency  | Resource implications  |
|---|---|--|--|
| <b>How do activities in Cheltenham contribute to greenhouse gas emissions?</b>  |   |  |  |
| Refine baseline data on CO <sub>2</sub> and other greenhouse gases as more information becomes available, and revise targets accordingly  | More accurate baseline data available   | CBC, SWEA and Climate Change Board                                       | Within existing budgets  |
| Lobby the government for local energy consumption data from utilities companies   | Appropriate lobbying undertaken each year   | Climate Change Board   | Within existing budgets  |
| Report progress towards targets annually to the Climate Change Board.   | Annual report to Climate Change Board   | CBC/SWEA   | Within existing budgets  |
| <b>Reducing greenhouse gas emissions from activities in Cheltenham</b>  |   |  |  |
| <b>Home energy conservation</b>   |   |  |  |
| Implement measures to improve energy efficiency of Cheltenham housing stock by 16.5% between 2003 / 2010 by: <ul style="list-style-type: none"> <li>Continuing to implement a programme of private sector housing improvements</li> <li>Continuing to improve the energy efficiency of public sector stock</li> </ul> | Annually reported HECA data, outputs against the affordable warmth strategy and Best Value Performance Indicator 163 – SAP rating | Assistant Director Neighbourhood, SWEA, Cheltenham Borough Homes         | Provisional commitment in medium term to council funding of energy efficiency and local authority stock programmes (subject to Housing Inspection outcome) |
| Promote changes in behaviour and investment to encourage the efficient use of energy by householders  | “   | Assistant Director Neighbourhood Regeneration, SWEA                      | As above   |
| Encourage local electrical appliance retailers to increase awareness of energy issues and labelling systems and promote sales of energy efficient appliances  | “   | Assistant Director Neighbourhood Regeneration, SWEA                      | “  |
| Explore opportunities to reduce CO <sub>2</sub> emissions from dwellings by encouraging the use of energy from renewable sources  | “   | Assistant Director Neighbourhood Regeneration, Sustainability Team, SWEA | “  |
| Educate the public in general, and especially school children, to encourage sustainable home energy use   | “   | Assistant Director Neighbourhood Regeneration, SWEA                      | “  |
| <b>Energy use in the business and community sectors</b>   |   |  |  |
| Encourage businesses and community organisations to adopt more sustainable energy management practices and to reduce the environmental impact of their operations by: <ul style="list-style-type: none"> <li>emphasising benefits</li> <li>improving signposting to appropriate support organisations</li> </ul>      | Environmental groups/agencies involved in 21/22 April 2004 Business Connections Exhibition  | GEMRU, Glos First, Business Link, GEBF, CBC, Action Energy, SWEA         | Within existing budgets  |

| Existing or proposed improvement measure   | Target/timescale/possible performance indicator  | Lead officer/agency   | Resource implications  |
|--|--|---|--|
| <ul style="list-style-type: none"> <li>making better use of existing networks and newsletters to promote energy message</li> </ul>   |  |   |  |
| Encourage appropriate agencies to initiate free energy checks for business and community groups  | Number of businesses in Cheltenham receiving advice  | Action Energy / Severn Wye Energy Agency  | Government funded  |
| Encourage businesses and community groups to adopt EMAS / ISO 14001/ BS 8555 or work towards energy efficiency accreditation   | Number of local businesses with ISO 14001  | GEMRU / Glos First / Business Link Glos (BLG)/ CBC                                  | Using CBC website business pages and Business Link Glos (BLG) <i>Limelight</i> e-bulletin        |
| Explore preparing an updated green guide for businesses, possibly in conjunction with Gloucestershire agencies   | 2004/5 trial CBC/GCC/BLG web-based information   | CBC Economic Development Manager/ BLG/ Sustainability Team / GCC                    | CBC / GCC / BLG staff time   |
| <b>Energy from renewable sources</b>   |  |   |  |
| Support the development of a Gloucestershire renewable energy target and action plan   | Sub-regional target in place mid 2004, action plan developing. % of electricity produced from renewable sources by 2010  | RegenSW, SWEA, Glos. Renewable Energy Forum, CBC                                    | CBC staff time   |
| CBC to use electricity from renewable sources for its electricity requirements when contracts are renewed  | 100% by December 2004  | CBC Property Maintenance Manager  | Should be covered by existing budgets  |
| Support the development of small scale renewable energy projects that meet local plan criteria   | 1 renewable energy project being developed in Cheltenham by December 2005  | CBC Sustainability and Land Use Teams, SWEA   | CBC staff time   |
| Promote the use of renewable energy in new developments  | 1 new development incorporating renewable energy provision by December 2005  | CBC Sustainability and Land Use Teams, SWEA   | CBC staff time   |
| All Climate Change Board members to consider changing to renewable electricity   | 25% by December 2005   | All Climate Change Board members  | Commitment from CCB members, CBC staff time  |
| Work with community organisations and local businesses to use renewable energy, starting with members of the Cheltenham Strategic Partnership  | 10% by December 2005   | Climate Change Board and Local Strategic Partnership, CBC Sustainability Team       | Commitment from LSP members, CBC staff time  |
| Promote the use of renewable electricity to local householders and Cheltenham Borough Homes  | 10% Viewpoint members committed to purchasing green energy   | CBC Neighbourhood Renewal and Sustainability Teams, SWEA , Cheltenham Borough Homes | CBC staff time, cost of promotional materials  |
| <b>Reducing emissions from transport</b>   |  |   |  |
| <b>Effects of climate change on travel patterns</b>  |  |   |  |
| Implement Local Transport Plan schemes to deliver the integrated transport strategy and reduce CO <sub>2</sub> emissions from transport. These include: <ul style="list-style-type: none"> <li>improvements to bus services delivered through a</li> </ul> | <ul style="list-style-type: none"> <li>2011 modal share target for the Central Severn Vale – maximum 55% car driver and minimum 45% total by non-car driver modes.</li> <li>By 2010 average daily</li> </ul> | CBC Integrated Transportation Assistant Director/ GCC                               | <ul style="list-style-type: none"> <li>Glos. LTP funding</li> <li>CBC staff resources</li> </ul> |

| Existing or proposed improvement measure  | Target/timescale/possible performance indicator   | Lead officer/agency   | Resource implications                    |
|---|---|---|--|
| <p>Bus Quality Partnership with Stagecoach to include bus shelters, lanes and bus priority;</p> <ul style="list-style-type: none"> <li>improvements to the pedestrian environment – pedestrianisation, footway improvements, pedestrian crossings, better lighting;</li> <li>cycle network improvements designed to give cyclists advantage – cycleways, cycle plugs, contra-flow lanes and cycle parking;</li> <li>road safety measures such as improved lighting, signing and traffic calming.</li> </ul> | <p>traffic flows across the Cheltenham central area traffic cordons to increase by zero compared with 2000 levels.</p> <ul style="list-style-type: none"> <li>To increase the number of public transport journeys in the County by 10% by 2011 from 1998/2000 average.</li> <li>To increase the number of walking journeys in the County by 10% by 2011 from 1998/2000 average.</li> <li>To double cycle journeys in the County by the year 2012 from a base year of 2002.</li> </ul> |   |  |
| Review of current LTP and formulation of LTP2 to cover 2006-2011  | <ul style="list-style-type: none"> <li>Consultation 2004</li> <li>Publication 2005</li> <li>Major scheme bid to enhance Park &amp; Ride and public transport in Cheltenham and Glos</li> </ul>  | Glos County Council, CBC Integrated Transportation Assistant Director | Ongoing commitment – CBC staff resources |

#### Employee travel

|  |   |  |   |
|--|---|--|---|
| Maintain profile of travel plans through Cheltenham Travel Plan Group  | Ongoing awareness raising – number of organisations using travel plans                              | CBC/GCC/ Cheltenham travel Plan Group                          | Cheltenham Travel Plan Group / CBC staff  |
| Work with Gloucestershire County Council and partners to promote travel plans within Cheltenham Travel to Work area, improve information to give people more travel choice and to launch CarShareGloucestershire | <p>CarShareGloucestershire launched – Feb 2004</p> <p>Transport information on web by June 2004</p> | GCC/Vision 21/ District Councils/ Cheltenham Travel Plan Group | Start up financial contributions from GCC £400, start up fee and £200 a year licence per 'private' organisation on database |

#### Fleet travel

|   |                                   |                      |            |
|---|-----------------------------------|----------------------|------------|
| Signpost organisations operating vehicle fleets to sources of information and advice on running fleets more efficiently | Website page in place by end 2004 | Climate change board | Staff time |
|---|-----------------------------------|----------------------|------------|

#### Alternative fuels

|   |  |                      |                            |
|---|--|----------------------|----------------------------|
| Encourage other organisations to actively explore the use of alternative fuels in their operations and also encourage individuals to consider these options | Information included in green guide for businesses | Climate change board | CBC / GCC / BLG Staff time |
|---|--|----------------------|----------------------------|

#### Gloucestershire Airport

|  |  |   |  |
|--|--|---|--|
| Assess CO <sub>2</sub> emissions from Glos. Airport and endeavour to ensure climate change issues are considered in future development options | Data on emissions available. Climate change impact included in airport study | Climate Change Board/ Glos. Airport Working Group | Airport study funded by Gloucestershire First and other partners |
|--|--|---|--|

#### Reducing emissions from domestic and commercial purchasing



| <b>Existing or proposed improvement measure</b>   | <b>Target/timescale/possible performance indicator</b>  | <b>Lead officer/agency</b>  | <b>Resource implications</b>  |
|---|---|---|---|
| Continue to promote local produce, support other opportunities to promote local services and goods and support Glos. Food Links initiatives.<br>Encourage local hotels and catering businesses to source food locally and investigate buying local food for in-house events. Promote use of allotments. | 24 farmers markets held a year, with average attendance of 40 stalls.<br>Number of tenanted allotments. | CBC in partnership with other agencies, eg Glos Food Links, organisations on climate change board | Staff time, possible funding requirement if dedicated material required |
| Promote energy efficient appliances and products  | Website page in place by end 2004   | SWEA, CBC   | Staff time to develop website   |
| Develop own policies for commercial purchasing encompassing suppliers' environmental performance  | % of board members with sustainable procurement strategies  | Climate change board  | External organisations, staff time to monitor                           |
| Promote green energy suppliers and sources of information   | Website page in place by end 2004   | CBC, SWEA   | Staff time to develop website   |
| Promote responsible shopping  | Website page in place by end 2004   | CBC   | Staff time to develop website   |

### **Reducing emissions from waste**

|   |   |  |  |
|---|---|--|--|
| Review waste management policies and evaluate further options for waste minimisation and recycling to support recycling and composting targets  | 2003/04<br>Kgs of waste per household per annum<br>% of waste recycled or composted | CBC<br>Environmental Maintenance   | £33k identified in medium term financial strategy to achieve 2005/06 statutory target of 24%                 |
| Introduce a kerbside recycling scheme to 39,000 households, extend to remaining households and expand range of materials, retain existing bring sites and closely monitor performance, and increase recycling capacity at Civic Amenity site  | 2003/04<br>% of waste recycled or composted   | CBC<br>Environmental Maintenance   | Within existing budget   |
| Work with community groups and other agencies to promote waste reduction and re-use; including training in schools and for local authority staff, developing community recycling and composting schemes, promoting reusable nappies, and reuse of computer equipment, furniture and white goods | Initiatives supported<br>Waste diverted from landfill through re-use initiatives    | CBC<br>Environmental Maintenance,<br>Environment Forum,<br>Sustainability Panel,<br>Cheltenham Tidy Group, Get it Sorted | Reserve of £30k set aside to fund increased waste awareness in partnership with Cheltenham Centre for Change |
| As part of the green guide for businesses, promote waste minimisation for construction, catering and other businesses   | 2004/05 trial<br>CBC/GCC/BLG<br>web-based information                               | CBC Economic Development<br>Manager/GCC/<br>BLG  | Within existing budgets  |

### **Sustainable construction – reducing energy use and adapting to climate change in development proposals**

|  |   |                       |                         |
|--|---|-----------------------|-------------------------|
| Lobby the Government to increase Building Regulations standards, especially relating to thermal efficiency; storm and grey water management; | Lobbying initiative taken by April 2004 | CBC Environment Group | Within existing budgets |
|--|---|-----------------------|-------------------------|



| Existing or proposed improvement measure  | Target/timescale/possible performance indicator   | Lead officer/agency  | Resource implications  |
|---|---|--|--|
| construction waste management; provision of effective storage and collection facilities; structural stability and design to cope with changing climate  |   |  |  |
| Ensure development plan and associated guidance fully reflect sustainable development objectives including siting, materials, transport and waste issues  | Linked to local plan review   | CBC Policy and PR and Urban Design Team  | Linked to the Built Environment service delivery plan 2004/5.              |
| Distribute <i>Sustainable Construction and Sustainable Developments</i> leaflets with all planning and building regulation application forms  | March 2004  | CBC Sustainability Team and Environment Group                                      | Covered within existing budgets  |
| Support the development of the Gloucestershire Local Materials Directory and other initiatives promoting materials with a low environmental impact  | Publication of Glos. Local Materials Directory by Vision 21, promotion by CBC Built Environment group. No target date | Vision 21, CBC Environment Group   | CBC contribution to cost of directory covered within existing budgets      |
| Provide training for local authority staff and members to raise awareness of more sustainable building techniques   | 1 training event organised for CBC staff by the end of 2004 (primarily Development Control)                           | CBC Environment Group, SWEA  | No budget resources identified for this task. Needs further consideration  |
| Provide training on the opportunities to produce efficient and sustainable buildings to construction professionals and the public   | December 2004   | CBC Building Control team, SWEA?   | This service would need to be funded centrally or via some external source |
| Provide accurate and practical information on new technology in the construction sector   | Already happening but additional training would provide an improved facility  | CBC Building Control team  | Training budget required   |
| Explore the development of a sustainability checklist for planning applications   | Begin exploration of feasibility during 2004  | CBC Environment Group and Policy Section, Forum for the Future, Future Foundations | Staff time   |
| <b>Reducing greenhouse gas emissions from Cheltenham Borough Council activities</b>   |   |  |  |
| <b>Council energy and water use</b>   |   |  |  |
| Continue introducing energy saving measures to CBC operational buildings as resources permit in order to meet the 5% per annum energy consumption reduction target and 50% CO <sub>2</sub> emissions reduction target 2000-2005 | Year-on-year consumption reductions   | CBC – Property Maintenance Manager, SWEA   | Funded from Invest to Save budget  |
| Develop energy and water monitoring arrangements for all CBC buildings, set individual consumption reduction targets and work with public and private sector organisations to identify further scope for improvement            | Targets set and consumption reducing  | CBC Property Maintenance Manager, SWEA, Action Energy, Carbon Trust                | Any savings should cover consultant fees                                   |
| Ensure that 100% electricity used by CBC is purchased from renewable sources  | 100% achieved October 2003  | CBC - Property Maintenance Manager   | Should be covered by existing budgets                                      |
| Investigate the scope to  |   | CBC Property   | Funded from Invest   |

| <b>Existing or proposed improvement measure</b>  | <b>Target/timescale/possible performance indicator</b>  | <b>Lead officer/agency</b>                                 | <b>Resource implications</b>   |
|--|---|--|--|
| generate renewable energy at CBC premises  |   | Maintenance Manager, SWEA                                  | to Save budget   |
| Explore opportunities for reducing energy use on computer equipment  |   | CBC ICT services   |  |
| <b>Staff commuting and work travel</b>   |   |  |  |
| Complete analysis of survey data and identify priorities. Prepare Corporate Travel Plan for Cabinet approval   | March 2004  | CBC Policy Team  | Within existing budgets  |
| Implement Corporate Travel Plan to encourage more employees to use alternatives to single occupancy car use for travelling to work, to reduce work-related car use and to encourage the use of low emission vehicles   | From 2004 onwards. Monitoring arrangements to be developed, likely to include repeat 'Travel to work' surveys | CBC Policy Team  | Work in 2004/5 to be met from existing budgets. Further work subject to approval of budget bid to Cabinet for 2005/6   |
| <b>Fleet vehicle use</b>   |   |  |  |
| Implement measures to improve council fleet fuel efficiency by 1% per litre of fuel used and reduce CO <sub>2</sub> emissions by 1% per annum by: <ul style="list-style-type: none"> <li>Basing vehicle purchasing decisions on fuel efficiency and CO<sub>2</sub> emissions</li> <li>Continuing to investigate the suitability of greener fuels for fleet vehicles</li> <li>Maintaining vehicles to manufacturers and MOT standards, and investing in equipment to monitor emissions to higher standards</li> <li>Exploring opportunities to introduce driver training on fuel efficient driving</li> </ul> | Gross fleet miles per gallon, fleet CO <sub>2</sub> emissions   | CBC Fleet Manager, Green Fleet Advisory Service, Motorvate | Higher specification vehicles may increase leasing costs.<br><br>Additional funding would be required for emissions monitoring equipment and driver training (cost to be determined)<br><br>Major new initiatives would need to be subject to grant funding from Govt agencies |
| <b>Council waste</b>   |   |  |  |
| Review recycling in Municipal Offices and identify improvement measures  | Complete review by mid 2004 and start to identify improvement measures  | CBC - Property Maintenance Manager                         | Staff time to develop proposals and possible funding requirement   |
| <b>Council purchasing and use of materials</b>   |   |  |  |
| Develop a council procurement strategy and guidelines incorporating sustainability objectives  | February 2004   | CBC Corporate Procurement officer, Forum for the Future    | Within existing budgets  |
| <b>Effects of climate change on local wellbeing and how to adapt</b>   |   |  |  |
| <b>Air quality impacts</b>   |   |  |  |
| Continue to review and assess local air quality and publish information about local air quality on its website   | Ongoing   | CBC Public Protection                                      | Annual cost to run air quality unit  |
| Continue to provide a link to the BBC air quality forecast on the website  | Ongoing   | CBC Public Protection                                      | Nil  |

| <b>Existing or proposed improvement measure</b>   | <b>Target/timescale/possible performance indicator</b>   | <b>Lead officer/agency</b>                          | <b>Resource implications</b>   |
|---|--|---|--|
| Develop an ozone episode warning system by providing forecasts of moderate or high ozone levels to GP surgeries and susceptible groups and individuals (perhaps online) | Prediction of pollution episodes difficult due to many influencing factors. Potential for email warnings when levels become elevated | CBC Public Protection                               | Officer time to establish warning programme and source email addresses                 |
| Raise awareness of the need to minimise the use of, and avoid the evaporation of, solvents, petrol and other volatile organic compounds                                 | Maintain education message to public to minimise pollution generation  | CBC Public Protection                               | Significant as multiple pollutant sources from multiple users                          |
| <b>Flooding and water shortage impacts</b>  |  |   |  |
| Implement local plan policy on flood risk as part of development control policy   | Ongoing  | CBC Built Environment and Environment Agency        | Existing budgets   |
| Require sustainable drainage systems to be implemented as part of new development where possible  | Ongoing  | CBC Built Environment, Severn Trent Water           | Existing budgets   |
| Work with the Environment Agency to upgrade flood capacity of River Chelt corridor  | Ongoing  | Environment Agency and CBC                          | Existing budgets   |
| Explore the need for flood alleviation work in Prestbury and funding opportunities and consider need for flood risk assessment on other non-main river watercourses     | Continual review   | CBC Built Environment with Environment Agency       | Subject to funding   |
| Explore opportunities for encouraging use of water butts  |  | CBC / Severn Trent Water                            | Staff time to develop proposals  |
| Continue actively educating community about the need for water conservation   | Ongoing  | Environment Agency / Severn Trent Water             | External organisations   |
| <b>Natural environment impacts</b>  |  |   |  |
| Continue implementing Glos. Biodiversity Action Plan by undertaking biodiversity audit and producing nature conservation strategy for Cheltenham                        | Biodiversity audit, nature conservation strategy and biodiversity action plan for Cheltenham – 2006                                  | CBC Green Environment and Policy & Public Relations | Need to identify funding from within existing budgets                                  |
| Complete green space strategy and develop action plan   | Council priority 2005  | CBC Green Environment                               | Knowledge Transfer Partnership with university. Budget bid 2004/5 supported by cabinet |
| Explore opportunities to incorporate drought tolerant plants in display planting  | Complete review of planting schemes  | CBC Green Environment                               |  |
| Produce urban trees strategy which will address climate change issues and develop action plan   | Draft strategy produced, continuing review with Cheltenham Trees Group   | CBC Green Environment / Cheltenham Tree Group       | In-house work  |
| Explore opportunities for sustainable planting in Cheltenham to offset CO <sub>2</sub> emissions  |  | CBC Green Environment                               |  |
| Continue working with AONB partners on climate change   | Ongoing  | CBC Green Environment                               |  |

| Existing or proposed improvement measure  | Target/timescale/possible performance indicator   | Lead officer/agency   | Resource implications  |
|---|---|---|--|
| issues  |   |   |  |
| Develop an allotments and community gardening project in the town   | Grant aid obtained, project starting in January 2004  | CBC Green Environment / Cheltenham & District Allotment Holders Association   | In-house work with Cheltenham & District Allotment Holders Association and Esmee Fairbairn Foundation                      |
| <b>Health and social impacts</b>  |   |   |  |
| Provide advice on: <ul style="list-style-type: none"> <li>how to stay cool in hot weather, especially with fans</li> <li>protection against sun exposure</li> <li>safeguarding health to public/ travellers when visiting areas where malaria and other diseases are endemic or areas of poor sanitation</li> </ul> | Already exists to some extent eg leaflets in GPs' surgeries, information packs for those seeking inoculations etc.  | DoH, Health Protection Agency, Health Promotion, GPs  | External organisations only  |
| Encourage improved indoor ventilation of homes, public buildings, hospitals, other institutions and workplaces to avoid the need to change working hours to cool times of day   | Raise awareness as soon as possible, difficult to gauge uptake  | Health and Safety inspectors for workplaces (routine enforcement work), building control officers, surveyors and architects     | Negligible or non compared with existing   |
| Raise awareness of health and safety laws regarding health risks for outdoor workers  | Could raise awareness with employers/self employed. Inspection form could be adapted to show this had been mentioned                                      | Health and Safety inspectors  | Negligible or no increase over existing costs  |
| Undertake risk assessments for council employees working outdoors   | CBC should do risk assessment of all employees exposed to hazards   | Relevant managers/council health and safety advisor   | Should not cause significant additional workload. Capital costs to provide essential air conditioning to council buildings |
| Support Food Standards Agency initiative to reduce food poisoning by 20% by 2006 through advice on improvements in food storage, preparation and hygiene at home and in commercial premises   | Hygiene promotional event in next 2 years (incorporating these messages), followed by a commitment to do same at regular intervals (subject to resources) | Food Standards Agency / CBC, food safety inspectors. Promotional events programmed into local annual Food Service Delivery Plan | Time implication for existing staff and facilities. May be nominal sum to purchase eg stationery/printing services         |
| Lobby for improvements to food production chain especially for meat products, from animal husbandry to slaughtering   | National food poisoning statistics  | FSA, DEFRA, local food authorities  | Negligible or no increase over existing costs  |
| Publicity on refrigeration issues with centrally sourced promotional materials, or by locally targeted initiatives  | Local participation in Food Safety Week, a regular calendar event run jointly by local authorities and the Food and Drink Federation                      | Food and drinks Federation, CBC Food Safety Team  | Time implication for existing staff  |

| <b>Existing or proposed improvement measure</b>  | <b>Target/timescale/possible performance indicator</b>          | <b>Lead officer/agency</b>   | <b>Resource implications</b>  |
|--|---|--|---|
| Encourage provision of extreme weather warnings to civil defence bodies inc. County and District/ Borough councils especially in relation to storms and flooding   |   | As above and Met Office  | Mainly external organisations; may involve CBC as part of County emergency planning; officer overtime may apply |
| <b>Economic development and tourism impacts</b>  |   |  |   |
| <b>Impact on business</b>  |   |  |   |
| Increase awareness of climate change and its likely impacts with the business community  | 2004/5 CBC to undertake a study looking at all business sectors | Glos First / Business Link /CBC Economic Development / Glos University | Within existing budgets   |
| Encourage companies to undertake their own audits and risk assessments   | CBC to add into Glos First / BLG service level agreements       | Glos First / Business Link   | Within existing budgets   |
| Work with strategic planners through planning process to ensure that where possible employment land is located away from floodplains   | High percentage of new employment land outside floodplain       | Glos County Council / CBC  |   |
| Encourage businesses to exploit opportunities of climate change  | Await outcome of 2004/5 study (as above)                        | GEMRU / Glos First / BLG / CBC   |   |
| <b>Impact on tourism</b>   |   |  |   |
| Raise awareness of climate change with our tourism partners and promote sustainable tourism  | Tourism forum consulted on strategy                             | Chelt Tourist Forum  | Existing resources  |
| Encourage café culture   |   | CBC - public protection  | Licensing issues  |
| Plan for more weather-proof tourist attractions  |   | Chelt Tourist Forum / private sector                                   | Staff time to develop proposals   |
| Ensure that town centre improvements delivered as part of civic pride scheme are resistant to extreme weather  | CBC approval of civic pride proposals                           | Civic pride steering group   | Staff time to develop proposals   |
| <b>Raising awareness and understanding of climate change</b>   |   |  |   |
| Raise awareness of climate change within community   | Publication of climate change strategy                          | CBC and climate change board   | Existing budgets  |
| Ensure that the most up to date information about the potential impact on Cheltenham is made available   | Respond swiftly to new data and disseminate it via website      | CBC and climate change board   | Existing budgets  |
| Raise awareness of practical measures that can be taken, tailored to: <ul style="list-style-type: none"> <li>• specific business sectors</li> <li>• households &amp; individuals</li> <li>• schools and the young</li> <li>• community groups</li> </ul> | Repeat Viewpoint Panel questions                                | Members of climate change board and CBC                                | Staff time to develop initiatives within existing budgets   |
| Provide signposting service for sources of information and advice  | Website page in place by end 2004                               | CBC and members of climate change board                                | Existing budgets  |
| Play a leadership role in demonstrating what can be achieved and the benefits.   | Publication of climate change strategy                          | Climate change board and CBC   | Existing budgets  |



## APPENDIX 2 – Case studies

### Case Study 1:

#### **Reducing carbon emissions and other environmental impacts at Forum for the Future**

Forum for the Future is a UK based sustainable development charity working in partnership to accelerate the transition to a more sustainable way of life. With a staff of over 65 and offices in both Cheltenham and London we have an environmental impact that needs to be managed and continuously minimised. A key driver for our internal environmental management system is a commitment to “establish carbon neutral operations through improved energy efficiency, the purchase of renewable energy supply and carbon sequestration”.

In 2001 we set up management and measurement systems for all our key environmental impacts including greenhouse gas emissions. We collect data from staff travel and energy bills to calculate how much carbon dioxide emissions we are directly responsible for each year. This data is published in our annual report on our website so that our staff, partners and other interested stakeholders can see how we are performing year on year.

#### **Actions taken to reduce carbon emissions**

- In 2001 all our offices switched to a renewable energy supplier Unite[E], reducing CO<sub>2</sub> emissions by an estimated 21 tonnes in 2001.
- Our Cheltenham office also has ‘green’ gas (sequestered through Climate Care)
- To deliver further savings an energy efficiency strategy is currently being implemented. This includes:
  - investing in energy saving printing and photocopying equipment
  - installing energy saving light bulbs
  - staff awareness raising on unplugging computers and other equipment and switching lights off at night
- We have invested in air conditioning units for our London offices that do not use HFCs
- We have asked our key suppliers what their policy is on environmental management and particularly what they are doing to reduce greenhouse gas emissions
- In 2001 we were the first charitable organisation in the UK to achieve accreditation to the international environmental management system ISO14001

For more information see [www.forumforthefuture.org.uk](http://www.forumforthefuture.org.uk)

### Case Study 2:

#### **Bethesda Methodist Church Eco-Congregation Award**

Encams, the national environmental charity running the Tidy Britain campaign, supports the Eco-Congregation project, designed to help churches green their life and mission. Bethesda Methodist Church is the first church in Cheltenham to gain an Eco-Congregation Award.

The church has developed a range of initiatives to help reduce the environmental impact of activities in the church premises and to weave an ethical approach into all aspects of church life. Environmental impact is always considered in maintenance projects, almost all lighting is low energy, the premises are well insulated and a new efficient central heating system installed. The use of electrical appliances is kept to a minimum and systems to monitor energy and water use are being developed. The use of green energy is being investigated and the church is keen to explore opportunities for renewable energy generation when new building work takes place in the future.

For more information see <http://www.bethesda-church.org.uk/>

### Case study 3:

#### **CarShareGloucestershire ([www.carsharegloucestershire.com](http://www.carsharegloucestershire.com))**

Gloucestershire County Council is introducing a countywide lift-sharing scheme in early 2004, in partnership with Vision 21's *Thumbs Up!* scheme and district councils. This internet and telephone compatible service is based upon the established liftshare.com scheme and is aimed at increasing lift sharing amongst car users, especially for those living or working in rural areas poorly served by bus services. The scheme is open to anyone living and working around Gloucestershire. Businesses are also able to set up a private group on the website so that their employees have the option to share only with other people from the same organisation.

For more information contact Paul Hardiman (GCC) 01452 425538 or Graham Stanley (Vision 21) 07885 042785

### Case study 4:

#### **Zurich Financial Services Limited**

In 2001 the UK business division of Zurich signed up to the Government's initiative 'Making a Corporate Commitment' (MACC2). This involved setting quantified targets for improving resources efficiency and environmental performance. Our commitment involves reporting on targets for energy conservation and integrated travel plans.

We began implementing a travel plan for Cheltenham in 2003 following consultation with our staff through a travel to work survey. This survey received a high response rate and gave us a good understanding of travel patterns. Travel plans normally run for five years but, unusually, 90% of the activity was scheduled for the first nine months of 2003 to coincide with a local site merger. To help implement the plan we identified our 'Top Ten Tactics' of key travel plan initiatives for Cheltenham. These include:

- “Jambusters” car sharing database available through local intranets
- Priority parking for car sharers at The Grange site, with a guaranteed ride home for car sharers
- Car park space allocation process based on need at The Grange site
- Video conferencing facilities

- Free bus services in Cheltenham urban area and partnership with bus operators to improve the bus experience
- Partnership with Cheltenham Borough Council to improve cycle paths and facilities
- Promotion of flexible working

The incentives proposed for car sharing have enabled us to set an ambitious target of trebling the proportion of employees car sharing from 5% to 18% in the nine months to September 2003. The measures for public transport, especially the provision of free travel on buses throughout the Cheltenham urban area for Zurich employees, has enabled us to set a target of more than doubling the proportion of people using the bus from 5.2% to 12%. We have set a target of increasing walking or cycling from only 2% to 6%. We are not encouraging people to cycle to The Grange until suitable cycle paths are in place because of the nature of the road network between Cheltenham and this site. We will repeat our staff travel survey in October 2003 and 2004 to measure how we are doing against the targets we have set and communicate these results to our employees.

In addition to putting in place local travel plans, the Zurich Financial Services Group has set national targets for reducing electricity and gas consumption by 1% annually until 2010 and cutting carbon dioxide emissions from electricity and gas energy by 20% for its major sites (100kW+) in the period 1999-2004. We have arranged for 10% of our electrical energy to come from a 'green' renewable source as part of this.

For more information contact: Arthur Champion, Health, Safety & Environmental Advisor  
(arthur.champion@uk.zurich.com)

## Case study 5:

### Cheltenham Farmers' Market

The council and Cheltenham Town Centre Partnership set up Cheltenham Farmers' Market in May 2001 and one of its objectives was to reduce 'food miles'. The market was initially run on a monthly basis, but as a result of its success it is now held on the second and last Friday of every month in the town centre. Up to forty stalls provide a wide variety of food, drink and plants, all of which are locally produced.

The availability of good quality, local produce in the town centre encourages the purchase of local food, thereby reducing 'food miles' and the amount of packaging required to get the food from the producer to the customer. It also reintroduces the concept of 'seasonality' of produce. This is often forgotten as supermarkets transport food from all over the world in order to guarantee a year-round supply. Buying from a farmers' market encourages a change in buying habits, as different types of produce are available only at the times of the year when they can be grown locally.

The success of the market, and the growth of farmers' markets nationally, is testament to the fact that there is a renewed interest in buying local food, and as this interest grows, further opportunities will arise for local businesses, assisting the local economy. For more information contact Gill Morris, Cheltenham Borough Council, Email: gill.morris@cheltenham.gov.uk

## Case study 6:

### Gloucestershire Building Materials directory

The compilation of a Gloucestershire Building Materials directory is a project being undertaken by Vision 21, an organisation set up to work across Gloucestershire to increase awareness of the local environment and encourage people to take an active role in building a better future.

The directory will list sources of building materials and products within Gloucestershire, with an emphasis on those that are sustainable. Production of this directory should encourage local sourcing of materials and provide economic development opportunities for local companies. The aims of the project are to:

- raise awareness of the issues involved in the production and use of a material or product;
- encourage greater consumption of local products, increasing the market for these products and reducing environmental damage through the use of less polluting products and reduced transport
- promote awareness, understanding and adoption of more sustainable building methods.

For more information contact Vision 21 on 01242 224321

## Case Study 7:

### Severnprint Case Study

Severnprint Ltd is a Gloucester based printing company established in 1977, employing over 65 people with a client base throughout the UK. Their reputation is for producing top quality, high-value work that is **environmentally responsible**. For Severnprint, being environmental is not a 'one-off' initiative, but a core business practice. From pioneering 4-colour process printing onto the first available recycled papers through to the current drive to ISO14001 certification (expected November 2003), Severnprint's environmental status has been achieved through a series of manageable steps.

Initiatives include:

- The use of 'Ecotricity' renewable electricity, which reduces carbon dioxide emissions by over 200,000 kg per year.
- Investment in fuel-efficient transport to reduce CO<sub>2</sub> emissions. Severnprint's recent purchases have included an electric-petrol hybrid engine company car and a LPG delivery van.
- Investment in printing technology to reduce the use of chemicals resulting in emissions of VOCs.

Some of the most significant measures that Severnprint has taken to reduce its environmental impacts have focused around reducing waste:

- Severnprint employs a part time employee with responsibility for managing their waste. Waste paper, cardboard, plastic, ink tins and pallets are all recycled. They have also participated in the Gloucestershire Waste Minimisation

Club to identify ways in which they can further reduce waste and improve process efficiency.

- Using reusable cardboard boxes to send work out to customers. These boxes dispense with the need for sticky tape, and if returned, can be reused several times.
- Eliminating film and photographic chemicals used in the pre-press process – in 1998, Severnprint invested in Computer-To-Plate technology. This has eliminated an entire waste stream within this department, which has resulted in significant savings in both raw materials and waste disposal costs.
- Supporting recycled materials markets – Severnprint promotes the use of recycled papers to customers as a component of their *SylvaPack* environmental print route.

Severnprint's approach to the environment has resulted in them winning 5 environmental awards, the most recent being the Gloucestershire Environmental Business Award in October 2002. For the latest information, please contact Severnprint on 01452 416391.

## Case study 8:

### **“Southernwood”, Cheltenham’s first eco-house (being built by Ben Tuxworth of Forum for the Future)**

Cheltenham Borough Council granted permission for this self-build project in April 2003. A 1930s timber bungalow is being replaced with a new family home constructed to a high standard of sustainability performance.

- Consultation with the planning authority, neighbours and other stakeholders was undertaken early in the design process and local professionals, suppliers and trades people are used where possible.
- The foundations were laid using a low environmental impact concrete blend with recycled aggregates and cement-replacement materials. The house is of timber construction, using the masonite system of engineered timber beams, which uses sustainably sourced timber to create strong, light structures. The use of timber from sustainably managed forests in Europe and recycled materials is maximised in interior finishes.
- The orientation of the house and window layout maximises solar gain and the windows are high performance timber with argon filled double-glazing and low emissivity glass.
- The design is highly airtight to maximise thermal efficiency and recycled newspaper insulation is used to meet the Housing Energy Efficiency Programme's advanced standard – total heat loss from the house will be around 5kw. Passive stack ventilation, using the natural chimney effect will ventilate the house and a ground source heat pump using solar energy will be installed to provide heating and hot water at approximately 400% efficiency. Backup heating will be via a high efficiency wood burning stove. Appliances and sanitary ware have been selected to minimise water and electricity usage.
- A 'warm roof' structure will be incorporated to maximise use of internal space and the layout of the house has been carefully considered to maximise 'good feeling'.
- The design incorporates a part-buried ground floor and natural materials for the external finish (locally sourced green oak cladding, lime putty render and natural slate) to minimise impact on the site and natural environment. CO<sub>2</sub> emissions incurred in shipping the slate will be offset with the Carbon Storage Trust. A new pond will be created for wildlife and a management plan introduced to maximise biodiversity on the site.

The project will be promoted as an example of sustainable living; it has already appeared in a number of publications and will be the subject of a series called 'How to Build a House' on the Discovery Channel in Autumn 2004.

For more information contact Ben Tuxworth at Forum for the Future on 01242 262400.

## Case study 9:

### **Cheltenham Recreation Centre CHP unit**

Since April 2003, the Recreation Centre, a key user of energy and water, has come back under Cheltenham Borough Council's control after a number of years of being managed externally.

As well as undertaking a detailed analysis of recent energy consumption data, a programme of energy efficiency measures is being introduced as budgets permit. Key to these is the installation of a 165kw Combined Heat and Power (CHP) unit to provide heat and power to the Recreation Centre, where energy use is high because of the need to heat the swimming pool as well as providing heat and power for other sports facilities. By using this unit to help provide some of the 16.1 million kwh used by the site per annum, it has been estimated that CO<sub>2</sub> emissions from the Recreation Centre would drop by 737 tonnes per annum and that energy bills would reduce by about £4,000. The unit is powered by natural gas and has been built on site by Combined Power Ltd (CPL). It is also operated and owned by CPL, with the Recreation Centre able to buy heat generated by the highly efficient system at a low cost.

For more information contact [www.energ.co.uk](http://www.energ.co.uk) or phone 0161 745 7450



## Case Study 10:

### Cheltenham Community Gardening project

Cheltenham Borough Council is developing a community gardening project which will provide opportunities to provide practical examples of community composting to promote good husbandry, waste minimisation and recycling. It will also provide opportunities to raise awareness of climate change and sustainable gardening. The project would include a nature area to promote beneficial insects, birds and amphibian and a community orchard to promote Gloucestershire's diminishing heritage of fruit trees.

The Esmee Fairbairn Foundation is supporting the initiative with grant aid of £14,500. Key to the project will be the development of a network of supporting groups including members of the Allotment Forum and Association, Action for Employment, Social Services, the Primary Health Care Trust, Cheltenham in Bloom, the Tidy Cheltenham Group and local schools.

For more information contact John Crowther on 01242 774640

## Case Study 11:

### Balcarras School

Balcarras School pupils have signed up to People and Planet ([www.peopleandplanet.org](http://www.peopleandplanet.org)) a national student network campaigning on specific issues. The People and Planet group meets at lunchtimes and encourages awareness of human rights, environment and poverty.

The school has estimated that up to £30,000 per year could be saved if fewer resources were wasted (this could be used to fund other work). The pupils involved in People and Planet, helped by the school's environmental committee, have started campaigns on energy and waste management. Opportunities for reducing energy use in school and transferring to green electricity are being explored. The new school buildings already have a computer-based climate control system that automatically opens windows by monitoring indoor air quality, which is linked to the heating system. Low energy light bulbs are installed where possible. People and Planet have also calculated the savings (both CO<sub>2</sub> and financial) that could be made by encouraging pupils to switch off IT equipment. Within a wider context there are also plans to run a 'Stop Esso' campaign in January 2004. The People and Planet group is also introducing a paper recycling scheme and a team of students from across the school will be developing a waste reduction strategy with Global Action Plan ([www.globalactionplan.org.uk](http://www.globalactionplan.org.uk)).

In addition, congestion problems around the school are being tackled by encouraging pupils to cycle - covered/ secure cycle parking and cycling proficiency and silver cycling awards are provided as incentives. Pupils are also encouraged to walk by participation in the "Safer Routes to School" scheme.

For more information contact Joanne Villegas at [www.balcarras.gloucs.sch.uk/](http://www.balcarras.gloucs.sch.uk/)

## Case Study 12:

### EcoHomes assessment of the Sochi Court development

The Sochi Court site, approximately 3kms from Cheltenham town centre, was previously developed with two blocks of 3-4 storey flats. These flats were demolished to be replaced with 31 rental homes comprising semi-detached bungalows and houses and three storey terraced houses, all with private access, enclosed rear gardens, turfed front gardens and tree planting around the site. The development was assessed against seven environmental categories: energy; transport; pollution; materials; water; land use and ecology, and health and wellbeing with credits awarded for each. EcoHomes also provided recommendations on how credits could be increased.

**Energy** – the development received 14 credits from a possible 20 for the expected level of CO<sub>2</sub> emissions per year, achieving a 30% improvement on part L of the 1995 Building Regulations for the thermal performance of the building envelope, providing drying space, providing information for tenants on purchasing energy efficient white goods and external lighting systems.

**Transport** – 5 from a possible 7 credits were awarded in this category for the provision of a bus stop immediately outside the site, safe pedestrian routes, a safe crossing point and for proximity to local amenities. Credits were not gained for cycle storage because, although provided, it was not considered sufficient for the larger properties.

**Pollution** – the maximum of 7 credits was gained for this category, achieved for using insulation with a zero ozone depletion potential in the roofs, walls, floors, hot water cylinder and pipes, and the installation of boilers with a NO<sub>x</sub> rating better than the required criteria.

**Materials** – 9 from a possible 31 credits were awarded in this category. Insufficient information was given about the timber used in the buildings for a credit to be awarded and there was no provision for recyclable material storage. Credits were awarded for the number of A rated specification items taken from the Green Guide to Housing Specification for the roofing material, external walls and internal walls/party walls. Credits were not gained for the windows, hard landscaping or fencing.

**Water** – 2 from a possible 5 credits were awarded for water consumption per bed space of less than 45m<sup>3</sup> per annum.

**Land use and ecology** – the site was of low ecological value, an audit was not carried out and existing trees were not protected and so no credits were awarded. Credits were achieved for changing the ecological value of the site. The development received no credits for its building footprint because of the limited number of buildings of 3 storeys.

**Health and wellbeing** – the development received some credits for soundproofing and provision of private space but did not meet the criteria for the provision of adequate daylighting throughout the dwellings.

The development was awarded 42 credits from a possible 86. A weighting factor was applied to each of the seven categories and the development was awarded a weighted score of 54.23, achieving a good rating (a good rating being between 48 and 60).

## APPENDIX 3 – list of background papers available

## **Paper 1 – climate change – the context**

- Introduction
- How is the climate predicted to change?
- Global, national and local responses to climate change

## **Paper 2 – CO<sub>2</sub> emissions from activities in Cheltenham**

- How do activities in Cheltenham contribute to greenhouse gas emissions?
- Reducing greenhouse gas emissions from activities in Cheltenham
  - Reducing emissions from energy use in buildings – home energy conservation, energy use in the business and community sectors, energy from renewable sources
  - Reducing emissions from transport
  - Reducing emissions from domestic and commercial purchasing
  - Reducing emissions from waste

## **Paper 3 – sustainable construction**

- Reducing energy use in new building and refurbishment projects
- Adapting to climate change

## **Paper 4 – CO<sub>2</sub> emissions from Cheltenham borough council's activities**

- How do Cheltenham Borough Council's activities contribute to greenhouse gas emissions?
- Reducing greenhouse gas emissions from Cheltenham Borough Council's activities

## **Paper 5 – effects of climate change on local well-being and how to adapt**

- Air quality impacts
- Flooding and water shortage impacts
- Natural environment impacts
- Health and social impacts
- Economic development and tourism impacts

## **Paper 6 – raising awareness and understanding of climate change**

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All background papers can be downloaded from the 'Our Plans' section of the Cheltenham Borough Council website [www.cheltenham.gov.uk](http://www.cheltenham.gov.uk)

Paper copies are also available and can be ordered individually or as a set. To obtain copies please contact:

Beth Rose, Technical Assistant, Sustainability Team, Cheltenham Borough Council

Tel: 01242 264140

Email: [beth.rose@cheltenham.gov.uk](mailto:beth.rose@cheltenham.gov.uk)