Nottinghamshire
County Council

TOWARDS CARBON NEUTRALITY

A CARBON MANAGEMENT PLAN FOR NOTTINGHAMSHIRE COUNTY COUNCIL

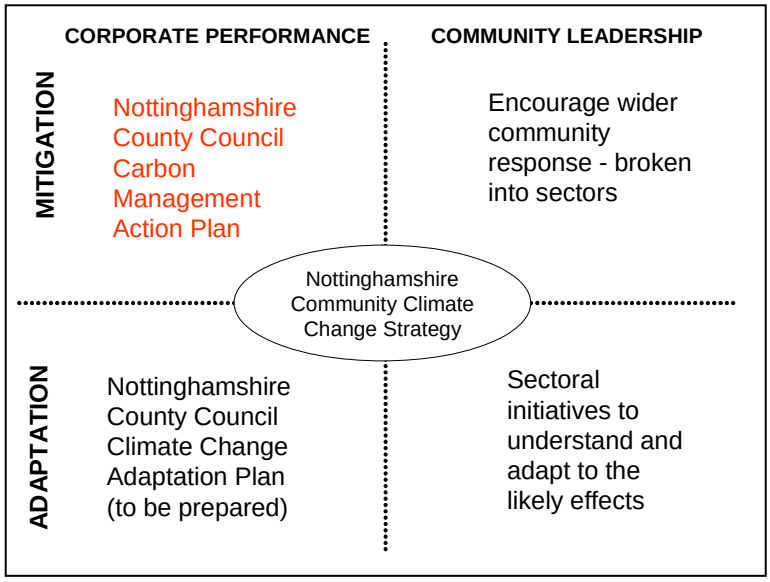
APRIL 2007

CONTENTS

EXECUTIVE SUMMARY

1. The four action areas

Nottinghamshire County Council is taking action on four fronts in its response to the challenge of climate change. Greenhouse gases (GHGs) in the atmosphere cause climate change and so mitigation of GHGs is required to minimise or reverse their impact. However, some climate change is inevitable due to the inertia in the climate system and therefore adaptation to the effects will also be necessary. Additionally, Nottinghamshire County Council has an effect through both its own corporate performance and its influence on the community, giving the four strands to our climate change strategy shown below.



2. Carbon Management Plan

The "Carbon Management Plan" (CMP) focuses on one action area - mitigation of carbon through the corporate performance of Nottinghamshire County Council. The CMP is the culmination of a number of years' work, bringing together work in the areas of energy from buildings, street lighting, travel and transport, waste and procurement.

Chapter 1: Introduction (pages 10 to 15)

This chapter describes the causes of climate change and the targets set at international and national level to reduce greenhouse gas emissions. It sets out the current County Council strategy for reducing CO_2 emissions and the progress made in meeting its local targets. Finally it explains the purpose of the draft Carbon Management Plan and how it relates to other Council commitments and strategies.

Chapter 2: The County Council's Carbon Footprint (pages 16 to 28)

This chapter sets out the latest available information about the Council's CO_2 emissions arising from its own buildings, street lighting, transport, waste and procurement. The current level of County Council emissions is estimated at around 110,000 tonnes. This excludes savings arising from the purchase of green electricity of around 33,000 tonnes. It explains the importance of the purchase of green electricity in achieving our current reduction in emissions and outlines areas where there needs to be development of carbon accounting measures such as with procurement. It is noted that at present there are no nationally recognised standards for carbon accounting. An important objective of the CMP (included in Chapter 3) is to further develop accounting methods. This work is being led nationally by the County Council as part of its Beacon Peer support work for Government. Section 2.7 summarises the results of the baseline assessment.

Chapter 3: Objectives and Strategy (pages 29 to 30)

The overall target for reducing the County Council's carbon emissions is to deliver a minimum of 1% reduction per year in overall emissions based on our 1998 baseline. This would put the County Council broadly in line with national targets for 2050, and with the county-wide targets set in the Nottinghamshire Agenda 21 climate change strategy. This chapter sets out the seven objectives of the CMP and explains the background to the stretch target of 2% per annum reductions in emissions for the next five years, equivalent to approximately 1400 tonnes CO_2 annually. Chapters 4 to 8 describe the proposals to achieve the target, with details of financial costs and levels of CO_2 savings for each measure. It should be noted that some of the actions identified may only have a small impact on CO_2 emissions but are important in the context of the policy objectives.

Chapter 4: Reducing Emissions from Buildings (pages 31 to 37)

This chapter sets out a series of actions under seven headings as follows:

- Improve energy efficiency in existing buildings
- Fuel switching (from coal and oil)
- Procurement of green electricity
- Improved design of new and refurbished buildings
- Introducing on-site renewables
- Other actions

The bulk of the CO_2 savings in the first five years would accrue from the programme of energy efficiency improvements to existing buildings with a potential reduction of around 8,500 tonnes of CO_2. However it is important to develop and fund programmes for longer term improvements based on fuel switching and more sustainable design of new build, so that CO_2 reductions can be sustained.

Chapter 5: Street Lighting (pages 38 to 40)

This chapter states that energy use in street lighting has increased over recent years but that emissions are currently relatively low due to the purchase of a mix of CHP and green electricity in the contract. The strategy should therefore be to reduce energy use, maintain and increase supplies of green electricity. There may be potential to save up to 1500 tonnes of CO_2 through the use of dimming and lighting switch off.

Chapter 6: Transport (STEPS Travel Plan) (pages 41 to 52)

This chapter, which represents a revised STEPS Travel Plan, sets out a series of actions under seven headings as follows:

- Consultation and securing commitment
- Commute journeys
- Business journeys
- Fleet issues
- Alternative working practices
- Site specific plans
- Other actions.

The broad thrust of the revised Travel Plan is to recognise that the past reliance on small scale incentives to change travel behaviour has only had limited impact and that consideration needs to be given to more affirmative measures, particularly regarding car parking. It should also be noted that there is a close synergy between actions in this area and emerging corporate policies on flexible working. There may be potential to save up to 2,000 tonnes of CO_2 in a five year period from a reduction in business and commuter mileage and more efficient fleet management.

Chapter 7: Waste (pages 53 to 54)

The County Council is responsible for a considerable tonnage of waste from its offices, from construction and other activities. Where this waste is bio-degradable, it produces either methane if it goes to landfill or carbon dioxide if it is incinerated. There is potential for relatively small but significant reductions in CO_2 through measures to minimise our waste generation and improve recycling, particularly in our offices and schools.

Chapter 8 (pages 55 to 56)

There is no firm information on carbon emissions relating to the Council's procurement activities but these are likely to be very significant. The main proposal is therefore to develop an accounting methodology to establish a baseline for future review.

Chapter 9 (pages 57 to 61)

This chapter summarises the potential CO_2 savings from each group of activities for the first five years and for the longer term. In each case an estimate is given of the capital and revenue cost implications. Finally, consideration is given to delivery, monitoring and reporting frameworks with the following proposed:-

- Overall Cabinet responsibility for delivery of the Carbon Management Plan to rest with the Cabinet Member for People and Performance.
- Executive responsibility for delivery of the Carbon Management Plan to be the responsibility of the Service Director for Planning and Sustainability within the Communities Department though practical project management and co-ordination will be with the Sustainability Team. Specific delivery of projects will involve staff from across the organisation.
- All specific targets in the CMP to be placed on the PRIDE performance management system.
- Progress with delivering these targets monitored on a quarterly basis, and reported formally to the Sustainability Board.
- Progress reported annually to Cabinet and Strategic Management Board, and published in the County Council's Annual Performance Report.

3. **Summary of key proposed actions**

The draft CMP covers a wide range of County Council activity. It proposes measures which require varying levels of further development and which have wide ranging cost implications. Some further work is required on clarifying what expenditure is already committed and to linking the cost of actions (both capital and revenue) to CO_2 reductions. Key actions covering the short, medium and longer term include:

- A programme of energy efficiency measures for our existing buildings.
- A programme of fuel switching, including on-site renewables.
- Sustainable design for all new/refurbished buildings.
- Examine office car park charges and public transport incentives.
- Review car allowances.
- Investment programme for pool cars.
- Produce a Council waste management plan for our own offices.
- Assess procurement practices and procedures.
- Development of effective and comprehensive carbon accounting procedures to improve monitoring of the Plan and to assist Government to produce national guidance.

4. **Other actions outside the remit of the CMP**

Whilst the CMP focuses on direct carbon emissions from the Council's work, there are other areas where the County Council is already tackling the wider issues raised by climate change. Examples of current activities are set out below.

(a) Energy Use

- As a lead partner in the Local Authorities Energy Partnership which covers both Nottinghamshire and Derbyshire, the authority will be promoting a Climate Change awareness campaign, Climate Heroes. This is being funded by a successful bid to DEFRA

- Working with the private sector, the authority has set up a company ReNu, whose role is to promote the introduction of renewable technologies. The promotion of the County Council work on Woodheat is being successfully handled through this company.

- In 2005 the County Council was awarded Beacon status for Sustainable Energy. Through this scheme the council has promoted sustainable energy principals to a number of other authorities through mentoring and seminars.

- In conjunction with the IDeA, Nottinghamshire County Council is a lead partner in a Peer Support programme. This programme has led to the production of a benchmark and tool kit which will enable other local authorities to assess their carbon management progress and improve performance.

(b) Travel and Transport

- The Council has two highly acclaimed Local Transport Plans (Greater Nottingham and North Nottinghamshire) which promote sustainable transport and reductions in the growth of car traffic.

- Measures range from small-scale local projects such as School Travel Plans, TransACT (a Nottinghamshire business travel plan initiative), Wheels 2 work promoting rural accessibility, the Rural Transport Partnership, Village Connection, to larger-scale projects such as the Robin Hood Line service improvements and the extension of NET, Nottinghamshire's tram system.

- The Sherwood Living Legend BIG Lottery Bid includes a proposal to develop an integrated network of cycle routes approaching the Sherwood area and linking facilities within it.

(c) Waste

- As the Waste and Minerals planning authority, the County Council is taking a lead role in ensuring that waste minimisation and recycling are addressed in the county.

- Through the waste disposal contract, the authority has sought to minimise CO_2 production arising from the disposal of municipal waste and to secure the building of a new waste to energy plant.
- Waste reduction and recycling techniques have been adopted in highways design and maintenance, with waste materials being reused and recycled products being specified.

(d) Other activities

- Officers have worked in partnership with the Nottinghamshire Districts and the Environment Agency to produce the Sustainable Developer Guide, which supports improved developer standards across the County.

- This same partnership is now working on requirements for some new developments to meet parts of their energy needs from renewable sources.

- The Authority actively supports education in schools through providing information about waste reduction, energy efficiency and other sustainability matters.

- The recently renegotiated contract for food in schools included a large proportion of local supply. This local content is helping to cut emissions through food miles.

- In partnership with Greenwood Community Forest and others, the authority has an impressive track record on tree planting.

- The authority is working very closely with Nottinghamshire Agenda 21 to address the causes and effects of climate change through information and the production of the magazine Living for Tomorrow.

- The authority is considering the adaptations which will be necessary to take account of a changing climate through its emergency planning function and intends to carry out a full assessment with the help of the UK Climate Impact Programme.

Further case studies are available at:-
http://www.nottinghamshire.gov.uk/home/environment/greenissues/oe-green_issues-beaconbackground.htm

1 INTRODUCTION

1.1 What is Climate Change?

1.1.1 The environmental, social and economic threat posed by climate change is well recorded, and has been subject of ever increasing media coverage especially in the last 2-3 years. Moreover the need to tackle dangerous climate change has risen sharply up the national and international political agenda. In the words of David King, UK Government's Chief Scientist, 2003, “climate change is the most severe problem we are facing today, more serious even than the threat of terrorism”.

1.1.2 Climate change is caused primarily by a basket of 6 gases, produced by human activity, which contribute to the greenhouse effect:

Greenhouse gas	Main source
Carbon dioxide (85% of total effect)	Energy generation and use, transport
Nitrous oxides	Transport, industry
Methane	Agriculture, waste management
Hydrofluorocarbons	Refrigeration
Perfluorocarbons	Fire fighting
Sulphur hexafluoride	Various industrial uses

Each greenhouse gas has a different capacity to cause global warming dependant on its nature. So for example the global warming potential (GWP) of methane has 21 times the warming effect of carbon dioxide, and nitrous oxides 310.

1.1.3 There remain some who consider that the changes to the climate currently being experienced and predicted for the future are part of a natural cycle of global warming and cooling. Nevertheless the vast majority of scientific opinion now agrees that changes in global temperatures are largely attributable to human activity, and will have dangerous impacts on human populations. Moreover there are some who believe that climate change would already be much more serious were it not for “global dimming” – the effect whereby pollution and dust in the atmosphere caused in part by human activity is reducing solar radiation reaching the earth and holding back the rate of global warming.

1.1.4 Responses to climate change fall into two categories:

Mitigation - reducing the emission of greenhouse gases to limit the scale and severity of climate change (although some level of impact is now inevitable, and changes are widely considered to be already happening).
Adaptation – taking action now to minimise the harmful consequences of whatever climate change occurs. Examples include planning new development away form areas of flood risk, design of buildings resilient

to flooding/storms, emergency plans for disease epidemics, and construction of water storage and distributions schemes.

Put more simply, mitigation is about tackling the causes of climate change, adaptation is about responding to its effects. Most attention to date has been focused on mitigation.

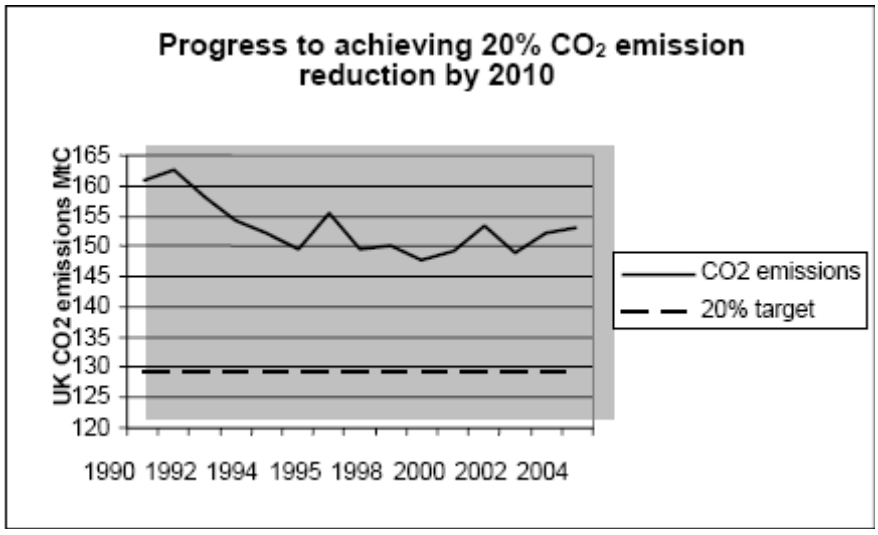
1.2 International and national responses to Climate Change

1.2.1 In 2005, following years of discussions, the Kyoto Protocol was legally ratified by 163 countries. This provides a framework for a global response to climate change, and sets enforceable targets for signatory countries to reduce their emissions of the 6 greenhouse gases listed above. The UK target is to reduce the emissions of these gases by 12.5%, based on 1990 levels, over the period of 2008 and 2012.

1.2.2 In the UK the Government, until recently, has adopted a more exacting domestic target for carbon dioxide. This was to:

- Reduce CO_2 emissions by 20% from 1990 levels by 2010
- Reduce emissions by 60% from the same baseline by 2050

However, although there was early progress towards both domestic and Kyoto targets, recently emissions have been rising again rather than falling as illustrated on the following diagram:



As a consequence, in its revised UK Climate Change Programme published in March 2006, the Government reduced its more exacting 2010 target from 20% to 15-18%. The most recent figure for 2004 is 5% below the 1990 baseline (source: www.defra.gov.uk)

1.2.3 Government has made clear (most recently in the UK Climate Change Programme 2006 which sets the framework for action in the UK on climate change) that to achieve this target, public agencies such as local authorities must not only play their part in delivering reductions in

carbon emissions but also provide community leadership and encourage others to do the same. This has been re-emphasised by many other organisations, including the Local Government Association. Indeed the Government has recently indicated that from 2008 Comprehensive Performance Assessments will also consider the extent to which local authorities are playing their part in tackling climate change.

1.2.4 The new Climate Change and Sustainable Energy Act 2006 will make it easier for householders who produce electricity at home from microgeneration technologies to sell unused power back to their supplier and will require the Secretary of State for Defra to report to Parliament each year on the UK's greenhouse gas emissions and progress on the steps taken to reduce them. As a signal of the Government commitment to change environmentally sustainable behaviour, they have set themselves two new targets. Firstly to make the Government office estate carbon neutral by 2012 and secondly to reduce Government's total emissions by 30% from buildings by 2020. In addition, the results of the Stern review published in autumn 2006 produced an economic argument for early intervention to prevent the worst aspects of climate change. This was closely followed by government consultation documents on "Building a Greener Future" which set a target of all new homes to be zero carbon by 2016. In March 2007, the Government published a Climate Change Bill, which seeks to create a pathway to a 60% reduction in carbon dioxide emissions by 2050, with real progress by 2020.

1.3 Current County Council strategy and policy framework

1.3.1 The climate change impacts of an organisation such as the County Council relate to two main areas:

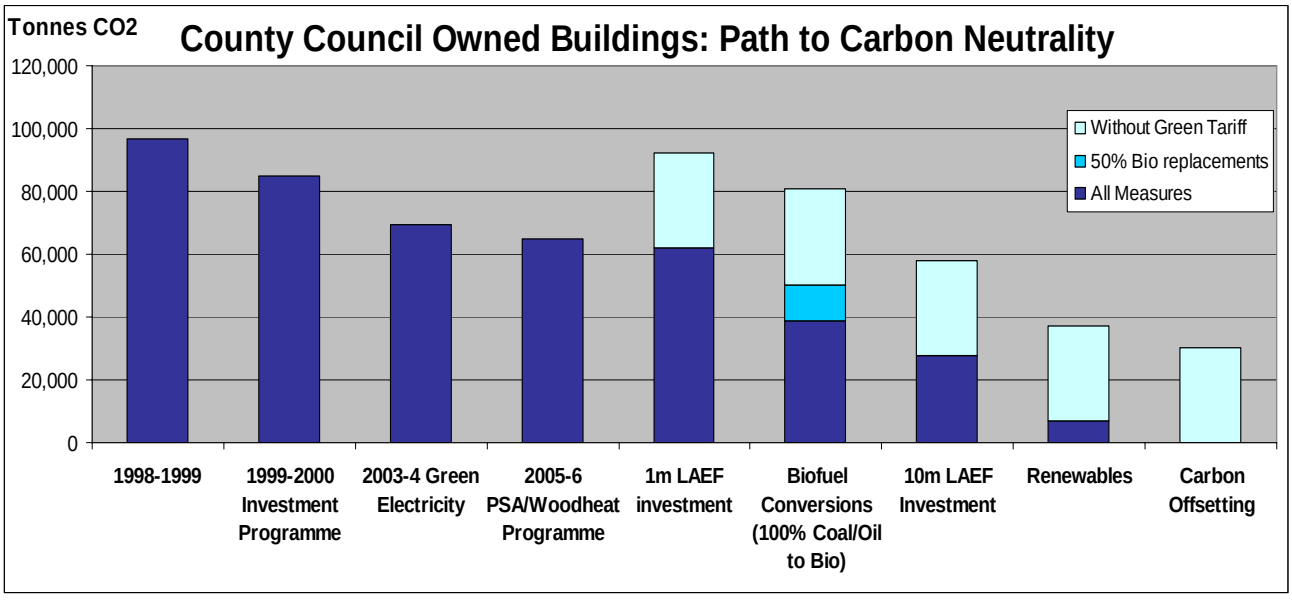
- Direct impacts – through its use of buildings, transport, the goods and services it procures, and its own production of waste
- Indirect/policy impacts – its influence on the actions of the wider community, for example through:
  - the Local Transport Plan and its management of the network
  - its waste strategy and management of municipal waste
  - its influence over land use planning
  - wider activities such as education and awareness raising on environmental issues.

1.3.2 Although the indirect impact of the County Council's policies are very important, this document relates exclusively to the first – the direct impact the Authority has as an organisation. These impacts come mainly from the following activities:

County Council activity	Main greenhouse gas emissions
Energy use in buildings (space heating and the use of electricity)	Carbon dioxide
Street lighting	Carbon dioxide
Transport (fleet vehicles, staff business mileage and commuting)	Carbon dioxide Nitrous oxides
Waste from Council operations	Methane Carbon dioxide
Procurement of goods and services	Carbon dioxide, nitrous oxides, methane

1.3.3 In practice it is common to refer to a plan which seeks to reduce emissions of all these gases as a **Carbon Management Plan**, even though nitrous oxides (NOx) do not contain carbon. This is because carbon dioxide represents the main cause of climate change, and because measures to reduce the emission of NOx from transport are likely also to reduce carbon dioxide emissions.

1.3.4 The County Council has previously developed a strategy for reducing energy use and carbon emissions from its building stock. The Energy Strategy for Buildings was adopted by Cabinet in March 2002, and set out proposals to reduce carbon emissions from a 1998 baseline. The strategy included costed proposals for reducing emissions by 71%, and a longer term aspiration to achieve carbon neutrality. The information has now been updated to take account of new data available and gives an indication of the path to carbon neutrality for County Council owned buildings.



1.3.5 The previous strategy has served the Authority well, and in particular set the strategic framework for the Council's delivery of a 27% reduction in carbon dioxide emissions from buildings by March 2006 under a Public Service Agreement ("stretched" from 25%). However

this plan now needs expanding into a full Carbon Management Plan in order to:

- Refresh targets and future action on buildings now that the PSA target has been achieved, and in particular to identify secure funding sources for the necessary investment
- Incorporate action on transport, street lighting, waste and procurement

1.3.6 Whilst this Carbon Management Plan deals specifically with direct impacts, it is the intention in the longer term to adopt specific carbon reduction targets for its indirect impacts resulting from the wider policies and strategies produced by the County Council as part of its Performance Management Framework and incorporate these in documents such as its Local Transport Plans and Waste Management Plan.

1.3.7 The development and delivery of a comprehensive Carbon Management Plan is supported by a number of other policy commitments and strategies adopted by the County Council over recent years. In particular:

- The County Council's "Taking Sustainability Forward" Action Plan, adopted by Cabinet on 3 December 2003, contained a commitment to develop a Carbon Management Plan. This commitment was renewed when Cabinet adopted the County Council's sustainability policy on 1 December 2005.
- The Nottinghamshire Community Strategy "All Together Better" contains a commitment to tackle climate change, and the Nottinghamshire County Council Strategic Plan identified carbon dioxide emission reductions through energy conservation and buying green energy as key actions.
- The County Council has signed the "Nottingham Declaration", a public campaign designed to encourage Local Authorities to make a positive commitment to tackling climate change. The Authority renewed its commitment to the declaration when it was relaunched in December 2005. The Declaration includes a commitment to achieve a significant reduction in greenhouse gas emissions from the Authority's own operations, especially energy sourcing and use, travel and transport, waste production and disposal, and the purchasing of goods and services.
- The Authority made a commitment under the international "Councils for Climate Protection" programme to develop a Carbon Management Plan. This commitment led to the Authority being included in the Carbon Trust's Local Authority Energy Finance scheme, which has established a £1 million fund (provided on a 50:50 basis between the Carbon Trust and the County Council) for investment in the Authority's buildings – a programme currently under way.

- On 27 April 2005 the County Council endorsed the Nottinghamshire Climate Change Strategy, which was developed through the Nottinghamshire Agenda 21 Forum. This encourages local authorities and other organisations in the County to adopt carbon reduction targets and develop Carbon Management Plans, designed to contribute to an overall reduction of 60% in emissions from Nottinghamshire by 2050.

2 BASELINE – NOTTINGHAMSHIRE COUNTY COUNCIL'S CARBON FOOTPRINT

2.1 Introduction

2.1.1 In developing targets and a programme for reducing carbon emissions, it is essential first to understand the level and causes of the Authority's current emissions. It is also important to provide perspective on these emission levels by

- comparing performance with that of other similar organisations (particularly other shire County Councils), or with recognised national standards
- assessing trends over time

The process of measuring carbon emissions and using this data to inform management decisions is called **carbon accounting**. However, as will be illustrated later, it is important not just to understand carbon emissions but also other trends such as the use and cost of energy.

2.1.2 In the following analysis, 2005/6 has been used as the base year for carbon emissions. It is estimated that in that year the County Council was responsible for a total of 110,324 tonnes of carbon emissions, excluding procurement. The contribution made by the different activities is illustrated in the first 3 columns below:

Activity	Actual carbon emissions (tonnes/yr)	%	Carbon emissions (tonnes/yr) excluding green electricity	%
Buildings (heating, lighting and appliances)	64,800	59	90,400	63
Street Lighting	11,700	10	18,700	13
Transport[1]: Commute Fleet Business miles	 20,520 880 3,784	23	 20,520 880 3,784	18
Waste	8,640	8	8,640	6
Total	**110,324**	**100**	**142,942**	**100**

NB : Emissions from air transport, procurement and water are not available The waste section later covers just phase 1 and phase 2 premises. Transport includes school staff, but not teachers.

[1] CO2 conversion rates based on DEFRA's Passenger Road Transport Conversion Factors for "average petrol car" and "average diesel car"

2.1.3 A significant part of the County Council's energy consumption relates to electricity use. The Authority has been fortunate recently in its ability to purchase green electricity (i.e. derived from renewable energy sources). This has significantly reduced carbon emissions from buildings for a marginal increase in cost. Also, until recently, the availability of green electricity meant that CO2 emissions from street lighting were reduced to zero at no extra cost. However, green electricity is in short supply due to a limited renewables generation capacity in the UK. Because of this, and due also to the general volatility in the current energy market, the Authority was unable to secure a green tariff for the new street lighting electricity contract. There is also a significant risk that the Authority may not be able to retain a green electricity contract for its buildings when the contract is to be renewed in April 2007. If so, total carbon emissions would rise to 142,924 tonnes per year, as set out in the last two columns above. This would mean that the County Council CO2 emissions have only fallen by 4.2% from the 1998 baseline set at 149,218 tonnes.

2.1.4 Carbon emissions from procurement have been excluded from the above table because they are extremely difficult to quantify and it has not so far been possible to establish a baseline. They include emissions resulting from:

- The manufacture of goods and materials used by the County Council, including major construction projects such as buildings and roads.
- The transportation of these goods and materials to Nottinghamshire.
- The activities of external service providers and contractors, including their transport and buildings.

2.1.5 At present there are no nationally recognised standards for assessments. Therefore it has not been possible to compare this overall baseline assessment of County Council emissions with those of other similar organisations, although some data is available for buildings and transport. Equally trend data is relatively limited. An important objective of this strategy will be to develop more comprehensive carbon accounting procedures as part of our Beacon Peer support work which will assist Government to develop national guidelines.

2.2 Energy use in buildings

2.2.1 Energy use in buildings includes the following:

- space and water heating (by gas, coal, electricity, or more recently from wood)
- other gas appliances such as cookers in school kitchens
- electricity used routinely in buildings for lighting, air conditioning etc
- electrical appliances such as PCs, fans and electric heaters

2.2.2 There has until recently been a Best Value indicator (BVPI180a) measuring energy use per square metre of floor space in local authority buildings. Although this excluded schools, and has recently been abandoned by Government as a result of discrepancies in the way it was measured, most recent figures for the County Council's largest 86 sites showed the Authority was in the bottom quartile – in other words that energy use in buildings is relatively high. This is backed up by figures which suggest that the County Council's building stock performs around 25% worse than a national "benchmark" figure for typical public buildings produced by the Carbon Trust.

2.2.3 As well as defining a typical energy rating figure, the Carbon Trust assessment tool also suggests standards for "good" and "poor" buildings. The assessment is based solely on energy consumption data and as such gives an indication of the buildings'efficiency. The following is a more detailed analysis against these standards for different categories of County Council buildings, again excluding schools:

Breakdown of performance by BVPI180a categories.

CATEGORY	TOTAL	ELECTRICITY			FOSSIL FUEL		
		Good	Typical	Poor	Good	Typical	Poor
Air conditioned civic offices	2	1	0	1	1	0	1
Naturally ventilated civic offices	11	4	1	6	1	4	6
Libraries	30	2	3	25	5	7	18
Residential care homes	15	1	3	11	6	3	6
Community centres	9	1	2	6	0	0	9
Day centres	15	3	6	6	1	7	7
Depots	4	2	0	2	0	0	4
TOTAL	**86**	**14**	**15**	**57**	**14**	**21**	**51**
TOTAL %	**100%**	**16%**	**17%**	**66%**	**16%**	**24%**	**59%**

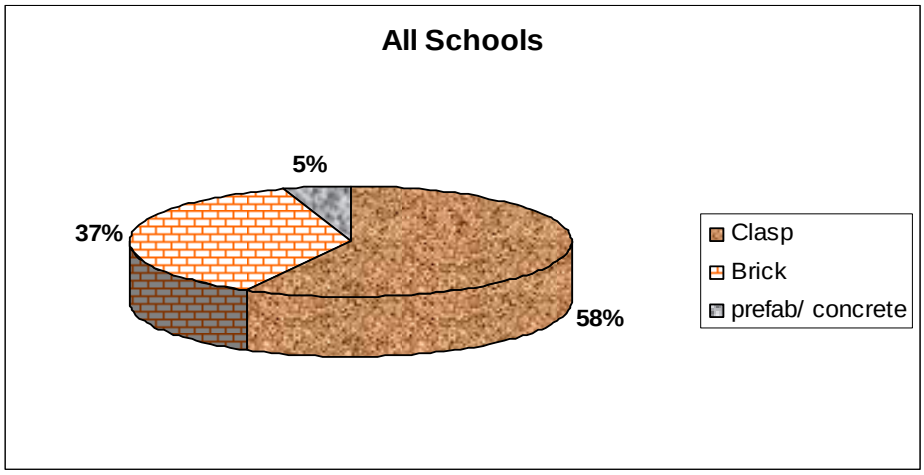
2.2.4 This shows that the large majority of buildings (66% in relation to electricity use and 59% in relation to fossil fuels used for heating) are

rated poor. Some facilities such as libraries and community centres perform particularly poorly. There has been a limited number of innovative projects in Nottinghamshire schools such as the conversion of boilers from coal to woodheat and the use of renewables such as local wind turbines. These offer great potential in the future if a realistic funding package can be put together.

2.2.5 The majority of County Council sites are schools (366 out of a total of 974 premises), and these are not included in these figures. Energy use in schools accounts for 79% of the total. Data for energy use in Nottinghamshire's schools shows that they use 22% more electricity and 40% more fossil heating fuel than a "typical" one nationally.

2.2.6 Although the reasons for this poor performance in relation to energy efficiency are varied, to an extent it may be regarded as a legacy of the past, with a portfolio of old buildings and a historic reliance on coal (which is inefficient and has high carbon emissions compared to gas) to heat buildings. It also reflects the fact that there has been relatively little investment in the energy efficiency of the building stock in the past 10 years with 58% of the buildings having some type of Clasp build and at least 5% mobile or extended use of temporary buildings.

Summary of building type for all schools in current folio



New build

2.2.7 Where the County Council has constructed new buildings, these recently have tended to be of high energy efficiency. For example Gateford Park Primary School, which was opened in 1999, was at the time a flagship school for energy efficiency, incorporating passive solar design, increased levels of insulation and renewable generation. The figures below show how the school is performing in terms of energy, compared to national benchmarks provided by the Carbon Trust.

	NCC Primary Schools		Carbon Trust Benchmarks		
	Gateford Pk	Typical	Good	Typical	Poor
Electricity kWh/m^2	61.10	54	25	34	47
Gas kWh/m^2	84.45	210	110	157	209

The school is therefore performing very well with regards to gas usage, significantly better than the national good practice figure (110 kWh/m^2), and the average for other County primary schools (210kW/m^2). However electricity usage, at 61.1 kWh/m^2 is higher than average. This was caused when mobile classrooms, which are heated electrically, were installed on the site shortly after it opened as a result of a large increase in pupil numbers. It is currently proposed to extend the school to enable the mobile classrooms to be removed.

Figures in the table below indicate the performance of a selection of new build primary schools over the last nine years. Gateford and King Edwin both have temporary classrooms on site and Thrumpton has an electrically powered kitchen which will account for the higher than expected use of electricity. However, the figures indicate that recent new builds have failed to capitalise on the exceptionally high energy standards pioneered in the Gateford project.

Selected Performance of Primary schools built between 1997 and 2005

	Year		Elec.	Gas		Elec.	Gas
School	Opened		kWh/m2			Benchmark Category	
Albany Junior School	1997		54.05	115.81		Poor	Good
Gateford Park Primary School	1999		61.10	84.45		Poor	Good
Pierrepont Gamston Primary School	2001		57.38	138.84		Poor	Good
Heathlands Primary School	2002		52.97	152.84		Poor	Good
Kimberley Primary	2002		43.87	126.54		Typical	Good
Thrumpton Primary School	2004		44.06	136.55		Typical	Good
Farnsfield St Michaels CE Aided Primary School	2005		43.99	188.72		Typical	Typical
King Edwin Primary & Nursery School	2005		63.94	167.11		Poor	Typical

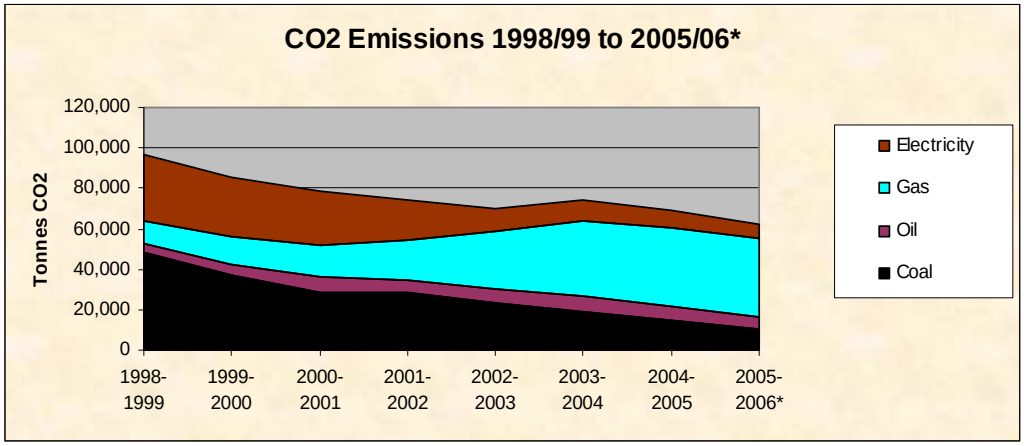
2.2.8 A further interesting comparison would have been between the energy efficiency of the newly built schools designed and built by the County Council, and those procured through the PFI process. However the County Council does not currently have direct access to consumption data and we are unable to monitor either the CO2 emissions or the energy performance of PFI schools. It is intended to liaise with the schools to obtain this data for future analysis.

2.2.9 All new build meets the Building regulations current at the time of design and a number of sustainability features are included in the individual design packages. However, at present the County Council has not adopted specific sustainability performance standards,

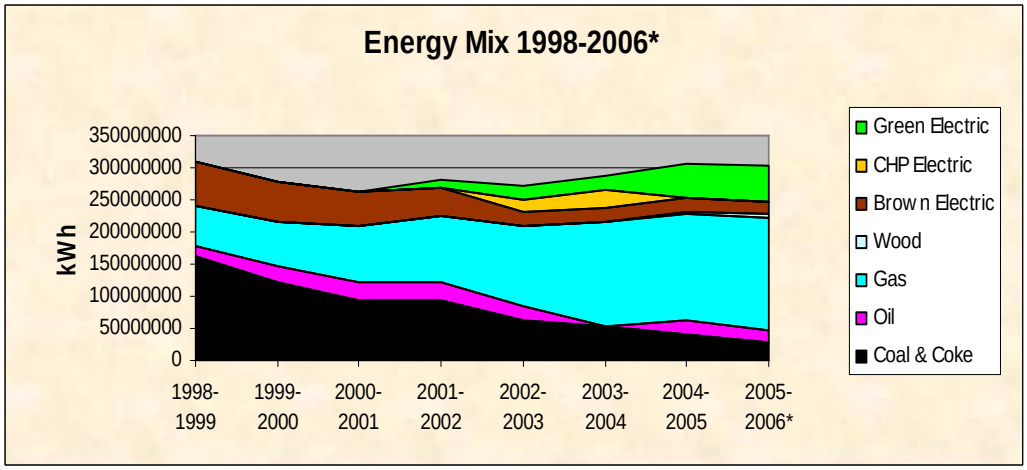
although work is underway through a joint project with Leicester City Council facilitated through Forum for the Future (Consultants) to create such a standard.

Trends

2.2.10 In relation to trends in carbon emissions and energy use, an interesting picture has emerged. In the last 8 years the County Council has made a 27% reduction in its carbon emissions from buildings – a target agreed as part of the Public Service Agreement.



2.2.11 However, a similar graph of energy use in buildings shows that over the past 8 years, after early savings, this has risen back to 1998 levels:



2.2.12 This is a result of the fact that carbon emissions have been achieved over the last 8 years not through a reduction in energy use, but predominantly through a switch from coal to gas for heating a number of buildings, and more recently through the use of renewable energy (woodheat and green electricity). Savings in the energy efficiency of buildings achieved both through the construction of new and more efficient buildings and through the fitting of measures such as low energy lighting systems and heating controls, have been offset by increases elsewhere. One particular cause may be increases in

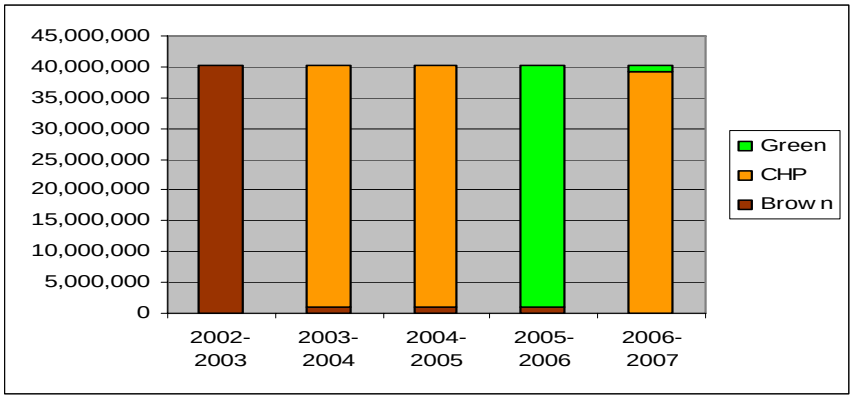
electricity consumption as a result of more use of personal computers, which reflects a national trend.

2.3 Street Lighting

2.3.1 A very similar picture has emerged in relation to street lighting. The energy efficiency of street lighting until recently was assessed through Best Value Performance Indicator BVPI180b, a measure of the average lamp circuit wattage compared with average consumption/ wattage by local authorities in the UK. The last time BVPI180b was submitted in 2002/03 it showed that the authority was performing at 398% as compared to the national figure of 325% - in other words that the energy efficiency of the Authority's street lighting is poor. However, as for buildings, BVPI180b has been discontinued and future comparisons will be difficult unless reintroduced by Government.

2.3.2 Actual data on street lighting efficiency is not available as the supply is not metered. Billing is based on an inventory of columns and bulb wattages multiplied by the number of lighting hours of use measured by the energy supplier utilizing accurate photoelectric cells. This has resulted in an allocated usage rise from 30,038,568 kWh/yr in 2002/3 to 30,346,000 kWh/yr estimated for 2005/6. This 1.02% increase is accounted for by new lighting provision associated with new development, road safety and crime and disorder projects, offset by efficiency projects.

2.3.3 Although energy use in street lighting has increased, the Authority secured a contract in 2004/5 for a mix of Combined Heat and Power (CHP)/ green electricity and in 2005-6 was buying 100% green electricity, at no additional cost. The contract for street lighting was renewed in September 2006, and it was not possible to secure a fully green option at a reasonable cost. The contract now consists of a small percentage of green with the remainder on a CHP tariff giving savings of 7,000 tonnes CO2.



2.3.4 Thus carbon emissions from street lighting are now reduced compared to a fully brown contract. Whilst this is a positive picture, it should be borne in mind that there is still the danger of reverting back to a fully brown contract should supplies of green be restricted.

2.4 Transport

2.4.1 Transport use and carbon emissions from County Council business, fleet and commute for 2005/6 is set out in the table below:

2005/6	Miles travelled (million)	Tonnes CO2 produced	%
Business mileage	11.4	3,784	15
Fleet mileage	4.4	880	3.5
Staff commuting	54	20,520	81.2
Business travel by air	0.17	72	0.3
Total	**69.8**	**25,184**	100

Business mileage - staff travel in their own cars on NCC business (based on business mileage claims)

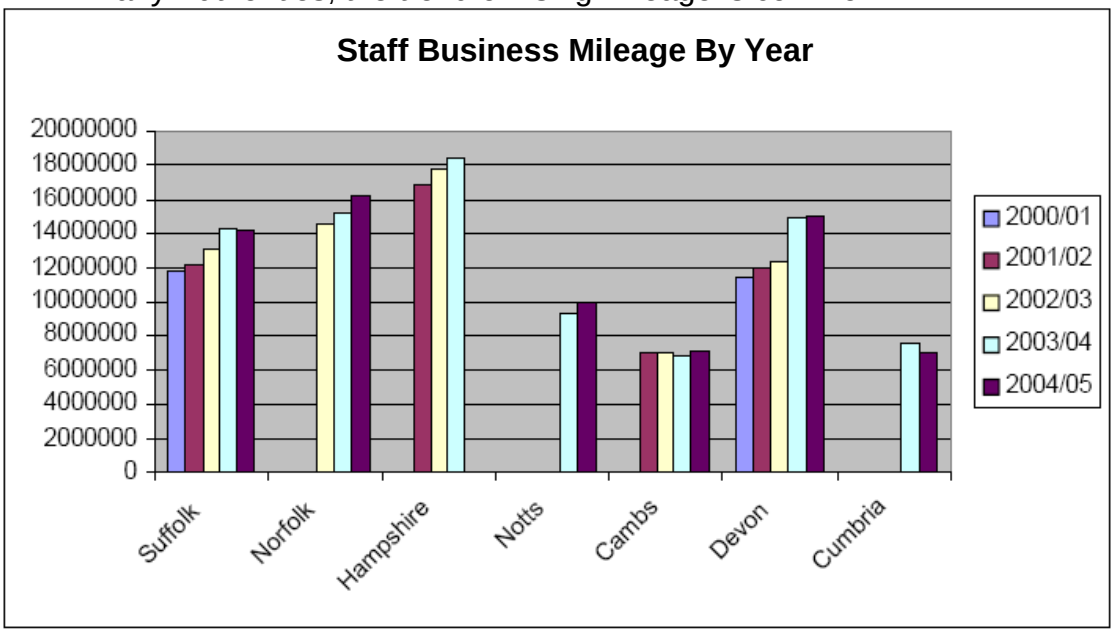
Fleet mileage - NCC vehicles e.g. lorries, pool cars, vans, meals on wheels etc (based on milometer readings from fleet vehicles)

2.4.2 Data on staff commuting is not available for 2003/4. Business and fleet mileages for that year, and data for 2004/5 are as follows:

	2003/4		2004/5	
	Miles travelled (million)	**Tonnes CO2 produced**	**Miles travelled (million)**	**Tonnes CO2 produced**
Business mileage	9.3	3,069	10	3,300
Fleet mileage	3.7	740	3.7	740
Staff commuting	n/a	n/a	55	18,150
Business travel by air	0.06	28	0.02	10.6

The figures for the previous 3 years show an average increase of 11% in business mileage. This compares to a national average of between 6% and 7%. Commuting mileage (by car) has decreased by 1% in the past year, and fleet mileage has risen by 19%. Such increases can be explained by wider policy changes, such as taking on additional highways work for Rushcliffe and Gedling, an increased fleet and changes to social services operations that place more emphasis on independent living. Business travel by air has been rising considerably over the past few years, largely due to the availability of low cost airlines that save the authority time and money. There have also been major overseas projects. Whilst emissions generated from air travel currently account for a small proportion of our overall carbon footprint, we recognise that this could be a potential problem for the future and will continue to monitor the levels.

2.4.3 The following table shows Nottinghamshire County Council's staff business miles by car over the past years compared to similar sized Local Authorities. Although the mileage for NCC ranks lower than many Authorities, the trend of rising mileage is common.



2.4.4 Staff commuting clearly represents the great majority of emissions from transport. This has been the main focus for STEPS, the County Council's Travel Plan, which celebrated 10 years of operation in 2006. The modal share of various types of transport used in commuting has been surveyed as part of the STEPS programme, and may be illustrated as follows (although the 2006 results are still provisional):

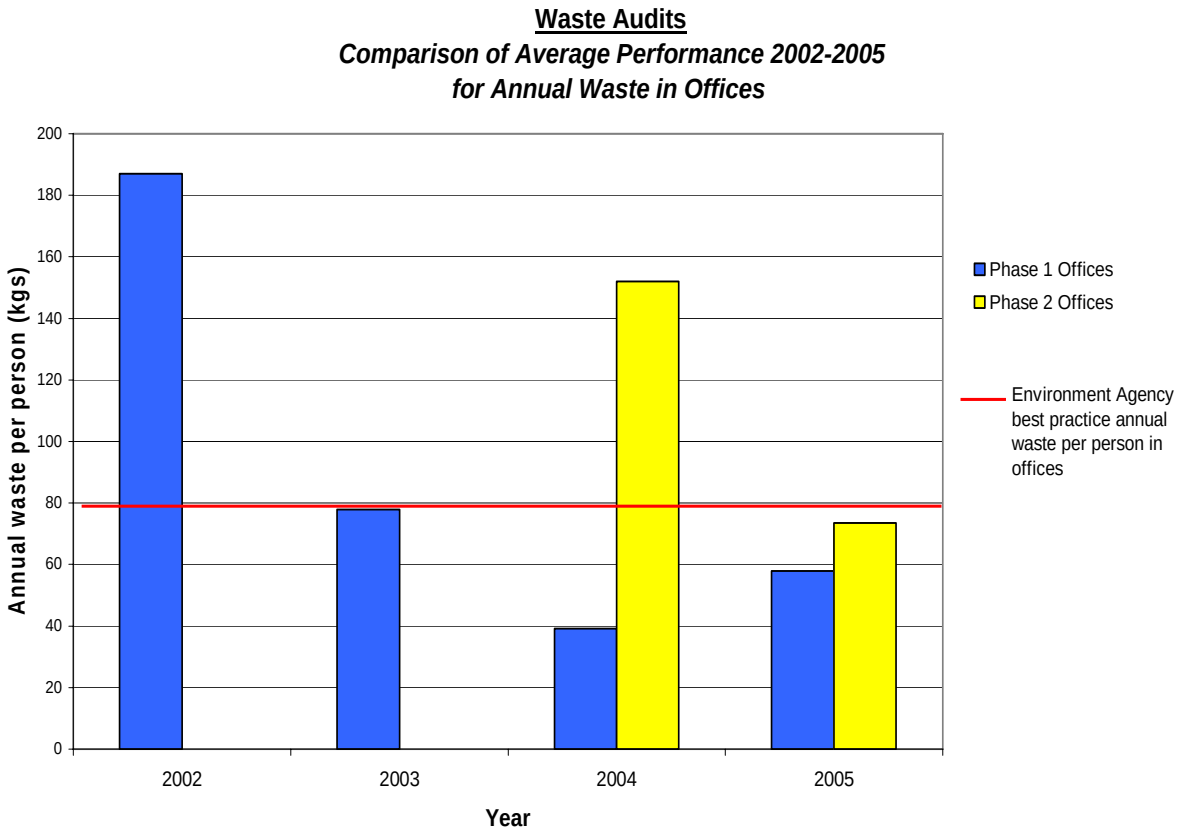
Commuting modes of NCC staff 1996 – 2006 (%)

	West Bridgford bases only				All staff		
	1996 (Mar)	1998 (Jan)	2000 (Jan)	2001 (Jun)	2004 (June)	2005 (June)	2006 (July)
Bicycle	3	4	3	5	7.7	2.8	4.6
Bus	13	14	8.5	11	8.3	4.7	4.8
Drive alone	59	50	65	63	61.2	61	57
Car share	19	22	17	13	8.8	12.1	8.3
Motorbike / moped	n/a	n/a	0.5	0.6	0.3	0.3	0.1
Train	1	2	1	2	1.3	0.7	0.2
Walk	5	8	5	5	11.8	16.8	23.2
Other (eg tram / taxi)	n/a	n/a	n/a	0.4	0.6	0.4	0.8

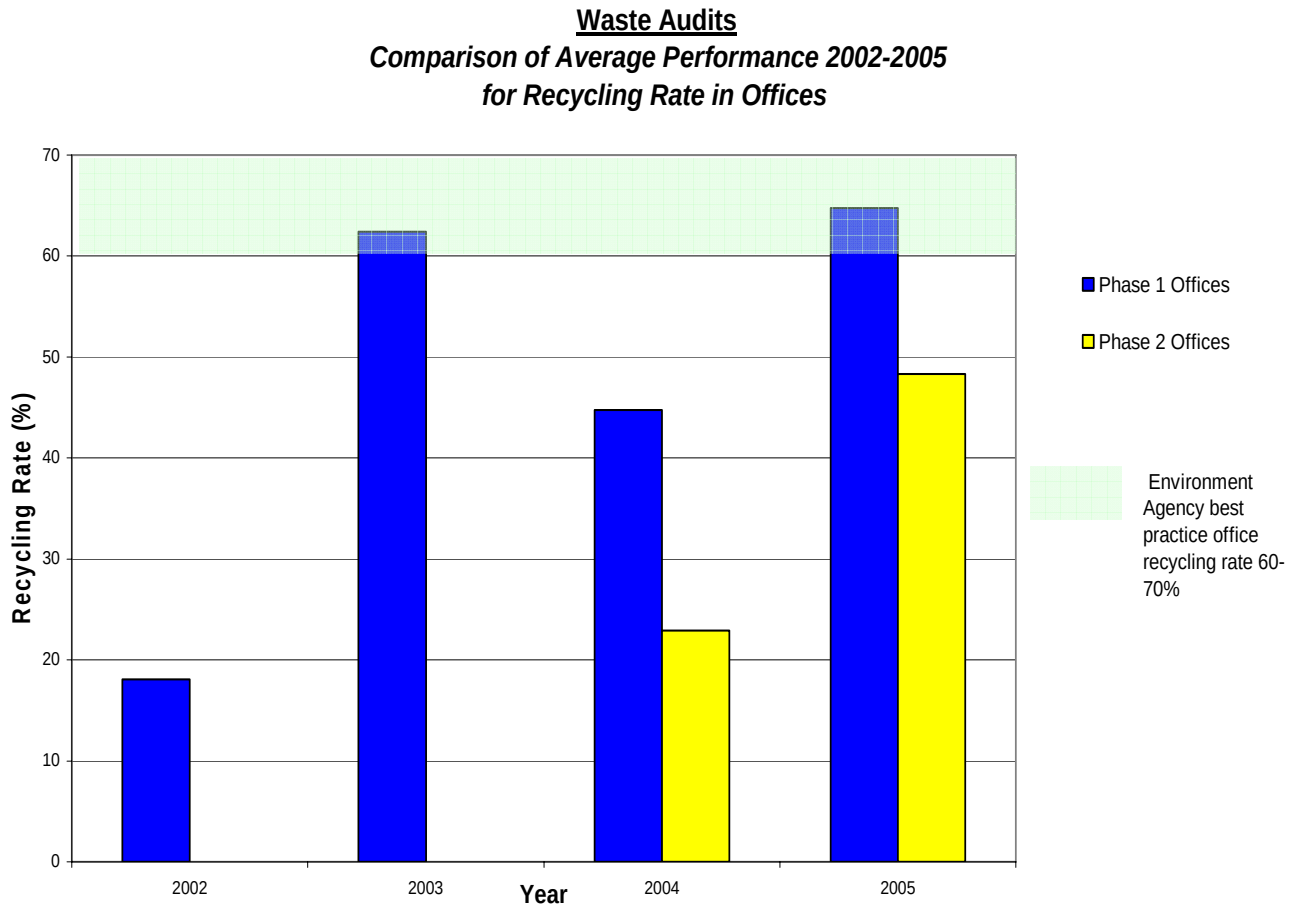
2.5 Waste

2.5.1 When waste products are taken for disposal, they generate methane at a landfill site and CO_2 through incineration.

2.5.2 Estimates of annual waste per person and recycling rates from a small number of County Council offices have been calculated on a phased basis. The first phase involved Trent Bridge House, the Gamston area office, Etwall House and the Greenwood Office. Phase 2 involved County Hall, Thoroton Road and Centenary House. Both phases have involved a campaign through the "Environmental Champions" programme to reduce waste and increase recycling. The results are as follows:



2.5.2 The diagram above shows that waste levels compare well with Environment Agency guidelines, and that campaigns to reduce waste have been effective where waste levels were high. Phase 1 offices for example have achieved 58kg annual waste per person in 2005, significantly below the best practice Environment Agency guidelines of 80kg.



2.5.3 Recycling rates have also responded well to the campaign, with Phase 1 offices (67% recycling) now well within the EU Best practice guidelines of 60-70%. However, Phase 2 offices having started at a low level are improving, but are still far behind targets, due to the difficulty in providing sufficient recycling facilities in the offices.

2.5.4 Very little data is available on waste arisings from other offices or schools, or from other activities such as construction, as until now the information has not been required. Measuring waste arisings more comprehensively through the organisation, and assessing the climate change impacts of this waste should be a high priority if the authority wishes to accurately assess and control its emissions.

2.6 Procurement

2.6.1 It has not been possible to establish a baseline for carbon emissions from procurement due to a lack of information and data availability. However, the “Governments Sustainable Procurement Task Force” believes that the public sector should reduce the footprint of its procurement as part of its move towards carbon neutrality. Information from the Flexible Framework being developed will be used as a guide to benchmarking and improving sustainable procurement.

2.7 Conclusions from baseline assessment

2.7.1 The baseline assessment has shown that there are still significant gaps in our carbon accounting. However the data which has been collated has led to following conclusions:

2.7.2 In relation to buildings:

- Carbon Dioxide emissions from buildings represents nearly 60% of the total emissions from the County Council.

- Although comparative data with external organisations is limited, it suggests the Authority's energy performance of office buildings and schools is poor.
- Overall energy use in buildings has remained static. Savings as a result of some new, more efficient buildings and boiler conversions from coal to gas have been largely offset by increased use in other areas, such as electricity for personal computers.
- Conversely the County Council has made great progress in reducing the carbon emissions from its buildings – a 27% reduction since 1998. This has been achieved largely through conversions to gas boilers, more recently through the use of woodheat, and through the use of green electricity. However progress will be reversed if the County Council fails to secure green electricity when contracts are renewed in the future.
- Further attempts are required to gain information on the energy performance of PFI schools so that comparisons with other new buildings and national standards can be made.

- There are good examples of high energy performance from new schools. However, not all new designs meet the same standards.

2.7.3 In relation to street lighting:

- There have been slight increases in energy use, but again large reductions in carbon emissions as a result of the use of green electricity. As for buildings, the shortage of green electricity represent a risk to progress.

2.7.4 In relation to transport:

- There is little comparative information in the carbon emissions from County Council use of transport. However data from the last 10 years suggests that the "soft measures" approach that has been adopted by STEPS is only achieving minor successes in reducing car use (and therefore CO2 emissions) for commuting. Business journeys continue to increase.

2.7.5 In relation to waste

- There have been significant reductions in the levels of office waste from sites where Environmental Champions have been in introduced, and therefore in the carbon emissions this waste represents. However there is no data in relation to schools, or other types of waste.

2.7.6 In relation to procurement

- There is little information available. However, there is a general agreement that emissions from procurement are likely to be substantial.

3 OBJECTIVES AND STRATEGY

3.1 Objectives

3.1.1 The objectives of this Carbon Management Plan are to:

- introduce effective and comprehensive carbon accounting, so that the County Council can accurately quantify its contribution to climate change as a result of its activities
- reduce carbon emissions from the County Council's direct activities so as to deliver the Authority's contribution to the Government's national targets for 20% reductions by 2010, 60% by 2050, and if at all possible to exceed them
- seek at all times to deliver carbon emission reductions in a cost effective way, taking into account whole-life costs associated with buildings and projections in future energy costs
- start with known and quantifiable emissions, but endeavour to include emissions from other areas, in particular procurement, in the near future
- start with direct emissions, but in the future expand the work to encompass indirect emissions from the wider community as a result of the County Council's policies and strategies
- rigorously monitor progress in delivering carbon emissions, and publicly report this progress on at least an annual basis through the Nottingham Partnership
- review and refresh the Carbon Management Plan on a 3 yearly cycle, or more frequently if required

3.2 Strategy and overall targets

3.2.1 Nottinghamshire County Council is committed to reducing its carbon emissions from the baseline set out in Chapter 2. The overall target for reducing the County Council's carbon emissions is to deliver a minimum of 1% reduction per year in overall emissions based on our 1998 baseline. This would put the County Council broadly in line with national targets for 2050, and with the county-wide targets set in the Nottinghamshire Agenda 21 climate change strategy. However, the authority is committed to reducing its emissions as much as possible, and this strategy will seek to achieve a stretch target of 2% a year reductions in the first 5 years. All measures however will be subject to a value for money appraisal, where appropriate based on whole life costings.

3.2.2 An important consideration in the development of a long term strategy for carbon savings is to consider the lifetime effects of decisions made now. A new building will contribute to carbon emissions for at least 30 years, and probably up to a century or more. Thus decisions made now

have an impact on the Authority's ability to make carbon savings throughout the period to 2050. This is particularly important given the law of diminishing returns – savings made in the early stages of delivering this Carbon Management Plan will be relatively easy compared to those which will need to be made in the latter stages

3.2.3 Taking these issues into account, the strategy for delivering carbon emissions reduction will use the following criterion to focus the priority:

- immediate implementation of a programme of measures where these save the County Council money immediately, or in the short term (less than 5 years)
- implementation of further activities and measures which represent the best return on investment in the longer term (beyond 5 years)
- ensure wherever possible that decisions and designs implemented now do not compromise our ability to make carbon savings in the future. Examples include the design of new buildings
- focus on areas and activities which have the highest carbon emissions, and those with the greatest scope for reductions, with a particular focus on cost per tonne of carbon saved.
- activities which attract external funding and are therefore more financially attractive as a result

3.2.4 Chapters 4-8 describe proposals for buildings, street lighting, transport, waste and procurement respectively. Where possible, costed measures will be accompanied by an estimate of the emission reductions considered to be achievable. In the case of procurement, it is not currently possible to estimate the likely savings since there is no baseline data. However a series of proposed measures are provided in chapter 8 which will nonetheless reduce the carbon emissions from procurement activities.

4 REDUCING EMISSIONS FROM BUILDINGS

4.1 Introduction

4.1.1 The Energy Strategy for Buildings, adopted in 2002, has guided the County Council's investment in reducing carbon emissions from buildings over recent years. However the immediate proposals set out in that strategy, in particular the procurement of green electricity, an investment programme in new boilers, and more recently the trialling of woodheat boilers, have now largely been delivered. Further proposals beyond these do not have a firm commitment for funding.

4.1.2 The following pages set out the proposals to further reduce carbon emissions from buildings, under the following headings

- Improve energy efficiency in existing buildings
- Fuel switching
- Procurement of green/CHP electricity
- Improved design of new and refurbished buildings
- Introducing on-site renewables
- Reducing water consumption
- Other actions relating to energy use in buildings

4.2 Improve energy efficiency in existing buildings

4.2.1 The main focus for the carbon reduction measures for the existing building stock must be to improve energy efficiency, and so reduce energy consumption. Funding for this is available in the short to medium term under the Carbon Trust Local Authority Energy Finance Scheme, provided individual measures have a pay-back period of 5 years or less. Specific proposals are as follows:

Aim : *Identify and implement energy efficiency measures in existing buildings*					
Key Actions	**Timescale**	**Contribution towards Aim**	**Total Estimated cost**	**Estimated saving per year**	**Target CO2 emission reductions per year**
Roll out existing £1 million "invest to save" scheme 50% funded by the Carbon Trust. (See details in LAEF action plan)	2006 –2009	Enables efficiency measures to be completed at no cost to the authority.	£500,000	£300,000	3,400
Extend LEAF scheme using existing investment	2009 - 20017	Enables further efficiency measures to be completed at no cost to the authority.	Use existing monies	£300,000	7,000
Develop European "Display" project to provide energy efficiency data at all County Council owned buildings.	Start Sept 06	Raises awareness of building energy efficiency standards and promotes energy saving actions.	£10,000	£50,750	500
Develop staff awareness programme linked to" Champions"	March 2007-2009.	Linked with the "Display" scheme, provides advice and encouragement for staff to reduce energy use in buildings	£60,000 over two years	£253,750	2,500
Develop a training program to ensure that building managers/caretakers are familiarised with building log books and can maintain optimum BEMS and other control settings.	Start Jan 2007.	To ensure maximum long-term energy efficiency.	£20,000	£253,750	2,500
Introduce £10 million invest to save scheme for longer term payback projects not presently available through LAEF.	Start March 2010	Revolving fund repayable on savings enables long term energy efficiency measures to be carried out	£10 million investment	£1.9 million	19,000

4.3 Fuel Switching

4.3.1 There are opportunities to reduce carbon emissions by switching the source of fuel for heating from coal or oil to gas or wood. There is also be scope for using liquid biofuels in the future.

Aim:- *Identify opportunities to switch to lower CO2 fuels.*					
Key Actions	**Timescale**	**Contribution towards Aim**	**Total Estimated cost**	**Estimated saving per year**	**Target CO2 emission reductions per year**
Conversion of 14 coal boilers to gas	Complete by 2011	Burning gas produces less CO2 per therm than coal	£800,000	Zero	350
Conversion and new boilers where possible of 50 coal fired boilers to Woodheat.	Completed by 2011	Burning wood is carbon neutral.	£2.8 million	Zero	4,500
Conversion of 45 existing oil fired boilers to 20% Bio oil.	Complete by 2007	Burning Bio oil reduces the CO2 per litre compared with petroleum based Diesel.	Zero	Zero	1,200
Conversion of 45 existing oil fired boilers to 100% Bio oil.	Complete by 2014	Burning Bio oil reduces the CO2 per litre compared with petroleum based Diesel.	£500,000	Zero	6,000
Carry out feasibility study to explore possibility of fuelling via biogas	Completed by 2009	Biogas could use kitchen and grounds waste as a resource	£10,000	Not known	Not known

4.4 Procurement of green/CHP electricity

4.4.1 The procurement of green electricity (from renewable sources) and/or Combined Heat and Power (CHP) electricity has made a major impact on the County Council's carbon emissions from buildings. However there is a danger of losing this contribution if the Authority is unsuccessful in further tendering rounds in securing green electricity.

Aim:- *Increase proportion of Green electricity purchased.*					
Key Actions	**Timescale**	**Contribution towards Aim**	**Total Estimated cost**	**Estimated saving per year**	**Target CO2 emission reductions per year**
Ensure future contracts for electricity include provision of Green supply.	October 2006 – 2009.	Green electricity or CHP sourced electricity has much reduced CO2 emissions	Net Zero	Zero	15,500 (Already accounted for)

4.5 Improved design of new and refurbished buildings

4.5.1 Although the existing stock of County Council buildings performs poorly when compared to National Benchmarks, there is an opportunity to improve over time by ensuring that any new buildings are constructed to high energy efficiency standards. Differentials in initial build cost need to be considered not in isolation, but balanced against the lifetime energy costs for the building. There is a particular opportunity in relation to the Building Schools for the Future initiative, which will see renewal or refurbishment of a significant number of schools in the future. The County Council has control over the design standards for buildings it constructs itself, but also needs to exert what influence it can over buildings constructed under PFI arrangements.

Aim:- *Reduce CO2 production from buildings through improved design.*					
Key Actions	**Timescale**	**Contribution towards Aim**	**Total Estimated cost**	**Estimated saving per year**	**Target CO2 emission reductions per year**
Analyse building replacement programme. Explore and adopt a design standard	March 2007	Sustainable design principals, including energy efficiency will indicate areas to improve performance.	£10,000	Zero	Zero
Agree targets for all new buildings to meet	May 2007	Targets set for sustainable design	3.5% of	50% 0f	70% less

BREEAM “Excellent” rating		principals can reduce long term CO2 emissions from all aspects of the design.	building costs	existing building energy costs	emissions
All new refurbishments to incorporate BREEAM excellent design into aspects of the work	May 2007	Targets set for sustainable design principals can reduce long term CO2 emissions from all aspects of the design.	3.5% of building costs	Information not available	Information not available
[1] Agree to match the DEFRA target of becoming carbon neutral for our buildings by 2012.	July 2007	Carbon neutrality would need to be achieved by offsetting remaining emissions.	£1.3 mil per year at today’s emissions	Zero	64,800
[2] Adopt DTI Draft Sustainable Construction Strategy targets:- 20% new build zero CO_2 emissions 20% existing stock zero CO_2 emissions 100% new build zero CO_2 emissions 100% existing stock zero CO_2 emissions	May 2007 2010 2015 2016 2030	Targets set for sustainable design principals will reduce long term CO2 emissions from building usage.	Dependant on modelling results	Information not available	Information not available

1. A carbon neutral building is one where the carbon emitted is reduced to a minimum through energy efficiency and fuel switching etc. Any remaining carbon emitted is offset through purchasing credits.
2. A *zero CO_2* building creates no net emissions of CO_2 on an annual basis. This means that it must obtain its heat and power from renewable energy. It may do this by buying electricity on a 'green tariff' from a company generating renewable energy. If the building makes use of any non renewable energy sources, it must have its own renewable energy system of sufficient capacity such that, during any year, it can export enough renewable energy to compensate for the CO_2 emissions associated with other imported energy.

4.6 Introducing on-site renewables

4.6.1 Generating heat and electricity and biogas on site from renewables can complement measures to reduce energy consumption and make an important contribution to carbon emission savings.

Aim:- *To meet heat and power requirements with local renewable generation*					
Key Actions	**Timescale**	**Contribution towards Aim**	**Total Estimated cost**	**Estimated saving per year**	**Target CO2 emission reductions per year**
Commission the water generator at Cuckney school.	March 2007	Will provide real experience of using water power.	£20,000	£3,000	14.4
Review existing installations of renewable power and explore further opportunities for Notts CC owned properties and land.	Sept 08	Report will indicate options and opportunities available.	£10,000	Zero	Zero
Install renewable generation schemes	2010 0nwards	Installation of renewables will substitute carbon emissions from fossil fuels.	Not available	Information not available	Up to 20,000

4.7 Other actions relating to energy use in buildings

4.7.1 A number of other actions are proposed for reducing the emissions of carbon from buildings:

Aim:- *To ensure all possible measures are taken to reduce carbon emissions from buildings*					
Key Actions	**Timescale**	**Contribution towards Aim**	**Total Estimated cost**	**Estimated saving per year**	**Target CO2 emission reductions per year**
Explore opportunities to co-locate buildings to promote renewable installation.		Helps to maximise shared heating/CHP opportunities, transport/commuting reduction opportunities, and building orientation to consider e.g. solar power opportunities	Zero	Zero	Information not available
Consider adjustment to building opening hours.		Can contribute towards energy savings.	Information not available	Information not available	Information not available
Consider rationalising occupied buildings		To reduce energy consumption	Information not available	Information not available	Information not available
Kyoto Flexible Mechanisms:- Consider emissions trading opportunities Carbon Offsetting or carbon sequestration projects.		NCC area has substantial forest coverage and potential for offsetting through community buildings.	Information not available	Information not available	Information not available

5 STREET LIGHTING

5.1 Introduction

5.1.1 As set out earlier, although carbon emissions from street lighting are currently much reduced due to the fact that the Authority has procured CHP and Green Electricity, this may not be the case in the future due to shortages of supply. In fact energy use in street lighting has increased over recent years. The strategy for reducing carbon emissions should seek to reduce total energy usage through greater lighting efficiency, whilst at the same time seeking to increase supplies of green electricity.

5.2 Proposals

Aim:- To Review existing lighting levels					
Key Actions	**Timescale**	**Contribution towards Aim**	**Total Estimated cost**	**Estimated saving per year**	**Target CO2 emission reductions per year**
Review lighting standards on new developments in line with European Standards and – National Code Of Practice	April 2007	Ensure over-lighting does not take place on new developments and that efficient design takes place.	Zero	No data available	No data available
Ensure all lighting renewal and replacement schemes are designed using latest design standards	April 2007	Ensure lighting level is appropriate for road hierarchy.	Zero	No data available	No data available

Aim:- Reduce energy consumption by use of dimming and lighting switch offs					
Key Actions	**Timescale**	**Contribution towards Aim**	**Total Estimated cost**	**Estimated saving per year**	**Target CO2 emission reductions per year**
Investigate dimming and lighting switch offs in light of Essex County Council trials and guidance to be published from the CSS and Institution of Lighting Engineers.	April 2007	Potential for significant savings. Legal advice on dimming and switch offs currently being sought.	No data available	No data available but 5% saving would give £175,000 p/a	Potentially 1,346 tonnes
Investigate reducing photo electric cell switch on lighting levels. Potential for reducing the operational running time of High Pressure Sodium (SON) Lighting by 5% per annum	April 2007	Capital funding is required to purchase new controllers – approx £15 per unit. Saving of approx £2 energy charges per unit per annum.	£250k required	£33k annual saving	253

Aim:- To ensure energy efficient equipment is used					
Key Actions	**Timescale**	**Contribution towards Aim**	**Total Estimated cost**	**Estimated saving per year**	**Target CO2 emission reductions per year**
Review current lamp types purchased – taking advice from manufacturers on energy efficiency	March 2007	Confirm existing specification is robust in terms of energy efficiency	No data available	No data available	No data available
Trial use of LED lighting at selected sites	Dec 2007	LED lighting uses much less electricity to provide the same lighting levels	No data available	No data available	No data available

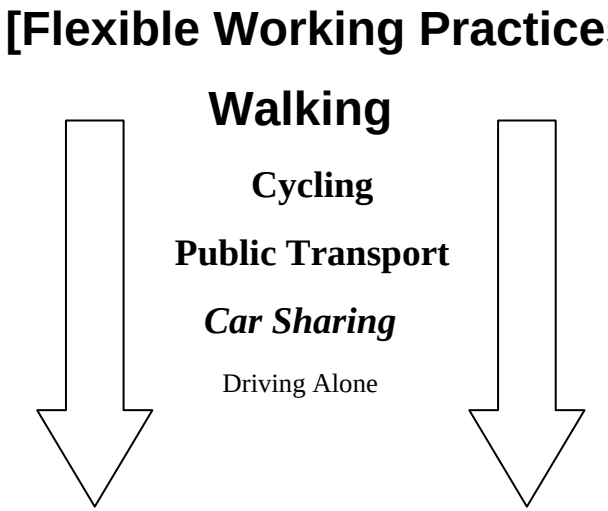
Aim:- To ensure energy from renewable sources is used where it is appropriate to do so					
Key Actions	**Timescale**	**Contribution towards Aim**	**Total Estimated cost**	**Estimated saving per year**	**Target CO2 emission reductions per year**
Ensure use of green electricity as part of tendering process for street lighting energy	August 2008	Green electricity is carbon neutral	No data available	None	11,700
Trial solar and wind powered lighting	Sept 2007	Trial of emerging technologies.	No data available	No data available	No data available

6 TRANSPORT (STEPS TRAVEL PLAN)

6.1 Introduction

6.1.1 For the last 10 years the County Council's efforts to reduce carbon emissions relating to transport, and tackle a number of other transport related issues such as congestion, have been channelled through the STEPS Travel Plan ("Sustainable Travel Equals Perfect Sense"). STEPS focused primarily in its early years on the staff commute, but in recent years has paid greater attention to business travel while at work.

6.1.2 STEPS promotes the transport hierarchy model shown below, proposed by Ray Gercans of the DTLR in 'Encouraging Walking – the UK Approach'. The model recognises the attributes of various modes of transport in terms of sustainability (especially level of greenhouse gas emission), healthiness, and limiting social exclusion.



6.1.3 Proposals for reducing transport emissions in the future under the STEPS programme are set out under 7 separate headings and represent a new STEPS Travel Plan. They are as follows:

- **Consultation and securing commitment**
- Commute Journeys
- Business Journeys
- Fleet Issues
- Alternative Working Practices
- Site Specific Plans
- Other actions

6.2 Consultation and securing commitment

6.2.1 It is essential that proposals for transport, which affect members of staff at the personal level, are subject to wide consultation. Although some will undoubtedly be unpopular, staff should be given the opportunity to understand the nature of the proposals and the reason why they are being introduced, and to offer their views before decisions are made on implementation.

Aim : *All Nottinghamshire County Council staff are aware of the travel plan, with top level management commitment to furthering the aims of the travel plan.*					
Key Actions	**Timescale**	**Contribution towards Aim**	**Total Estimated cost**	**Estimated saving per year**	**Target CO2 emission reductions per year**
1. Set up cross departmental working parties (with management support) to progress the travel plan actions.	06/07	Attain support and ownership of the travel plan at senior officer level.	Existing staff resources	Nil	The 2006 "One in Ten challenge"* saved 0.89 tonnes CO2 during its 20 week promotion.
2. Work travel themes into programme of Environmental champions	Ongoing	Increased awareness and ownership of the travel plan	Existing staff resources	Minimal	

*Employees were invited to select fortnight periods in which they would have a car free day and walk, cycle or use public transport instead.

6.3 Commute Journeys

6.3.1 Commuting journeys represent just over 80% of the County Council's total carbon emissions from transport (estimated at around 24,000 tonnes per annum). Therefore, although outside the direct control of the Authority, there is nevertheless a need to focus on the influence that can be applied by the Authority on the way that employees travel to and from work.

6.3.2 A particular factor in the West Bridgford campus is the recent designation of the area around Trent Bridge House and County Hall as an Air Quality Management Area for exceedences of nitrogen oxides (NOx) pollution levels. NOx gases derive almost entirely from vehicles, and NO_2, (one of the oxides of Nitrogen) as well as causing health impacts, is also a potent greenhouse gas.

6.3.3 Previous travel plan work has concentrated on "soft factors"; putting in the incentives to help encourage staff to travel in a sustainable way. Whilst it is important to continue this work, there has been little sustained improvement in the past few years, and more hard-hitting actions may be more appropriate.

6.3.4 The major staff travel survey undertaken by STEPS in 2004 revealed that car parking was the biggest issue for staff, with nearly 100 comments on a range of car park topics. These include some in support of car park charges, others wanting more parking, and suggestions around better car park priorities. Car park management can be an effective tool for encouraging modal shift; for example, 24.2% of survey respondents who currently drive alone said that they would be "very likely" to car share if they had a guaranteed space in the car park and a further 23.6% said they would "maybe" car share. There are a now a number of local authorities that have introduced car parking charges for staff.

6.3.5 The travel survey research underlines the sensitivity among staff of taking decisions around car park management, but also emphasises the need for these decisions to be made within the context of achieving the Council's travel plan objective to reduce the number of drive alone journeys.
The nine proposed actions below are set out under five main headings:

- Car parking: work with developers of new County Council premises, investigate staff car park charging and its implications.

- Car sharing: promote county-wide car share scheme with other partners, review preferential car sharing spaces at various existing sites.
- Public transport: promote public transport through personal journey plans and through the intranet.
- Cycling: improve cycling provision and promote cycling publication, training, events, offers and information.
- Walking: develop walking map for West Bridgford employees to encourage short journeys on foot.

Aim: *Reduce the number of one-person car trips between home and work by NCC staff, resulting in a reduction of CO2 emissions.*					
Key Actions	**Timescale**	**Contribution towards Aim**	**Total Estimated cost**	**Estimated saving per year**	**Target CO2 emission reductions per year**
Car parking					
1. Work with developers of new County Council premises (as well as Strategic Property / Property Services / Facilities Management for existing sites) on ensuring effective car park management systems are installed.	Ongoing	Comply with standards being advocated for external development. Contribute towards an infrastructure to discourage one-person car use, incentivise car sharing and makes best and fair use of the parking available.	Minimal	Each car parking spaces cost an average of £400/yr in land value and maintenance	Supports overall STEPS objectives to reduce single occupancy car trips. A 10% reduction in commuting by car would result in approximately 2,000 tonnes of CO2 saving Per year.
2. Investigate staff car park charging and its implications	Report to Cabinet by Autumn 2007	Discourage unnecessary one-person car trips. Opportunity to incentivise car sharing and alternative fuelled vehicles through reduced charges. Car park fees could be ring fenced for transport projects in support of the travel plan.	Minimal to investigate. Implementation could cost up to £500,000 in barrier systems / IT infrastructure	Significant revenue generation if implemented that can be reinvested in carbon reduction measures.	

Car sharing					
3. Promote county-wide car share scheme with other partners	Ongoing	Enables sharing of cars to reduce unnecessary one-person car trips.	Costs met in GN area by GNP	Two people car sharing frees up a car park space, saving £400 per space annually.	100 people car sharing = average 51 tonnes CO2 per year saving
4. Review preferential car sharing spaces at various existing sites.		Provides incentive for car sharing over one-person car trips. Ensures equity	Minimal		
Public Transport					
5. Promote public transport through personal journey plans for interested staff and new starters. Public transport information widely available through intranet.	Ongoing	Promotes public transport as an alternative to one-person car trips	Minimal	Minimal	Supports overall STEPS commute targets to reduce single occupancy car trips.
Cycling					
6. Improve cycling provision – secure bike parking / lockers and drying cabinet(s) use survey and mini site plans to identify need and priority.	Ongoing	Promotes cycling as an alternative to one-person car trips	Costs from LTP capital budget.	Each cyclist frees up a car park space, saving £400	1% year on year increase in cycle mode

7. Promote cycling publications, training, events, offers and information as part of a wider package of targeted information to staff.	Ongoing	Promotes cycling as an alternative to one-person car trips	Minimal	per space annually.	share. (Each cyclist saves 0.22 tonnes CO2 per year over a car driver)
Walking					
8. Develop walking map for West Bridgford employees to encourage short journeys on foot	June 06	Promotes walking as viable option for short journeys, with additional health benefits	Costs met from LTP capital budget, and partnership with neighbouring companies / Authorities.	Each car driver who walks to work frees up a car park space, saving £400 per space annually.	Supports overall STEPS commute objectives to reduce single occupancy car trips.
9. Help co-ordinate Greater Nottingham Walk week, including Walk to Work day	May 06	Promotes walking as viable option for short journeys, with additional health benefits	Nil		(Walk to Work day saved 0.068 tonnes CO2)

6.4 Business Journeys

6.4.1 Although business journeys represent only 15% of total carbon emissions from transport, policies on business travel can have a significant influence over the way staff commute to work.

6.4.2 Currently, the system of user allowances is undermining the incentives we have put in place for employees to leave their cars at home. 65% of the employees who drive to work alone said that the main reason for this travel choice was because they need their car for work. The essential user allowance makes some staff feel obliged to bring their car to the workplace, regardless of whether they need to use it that particular day.

6.4.3 There is also currently little incentive to plan visits and meetings efficiently, to take public transport, car share, cycle, or walk for business journeys, or to use video conferencing to avoid them, when the Authority is paying mileage rates which incentivise use of the private car. Current inland revenue figures clearly demonstrate that out of a casual car user rate of 52p a mile (engines over 1200cc), the actual cost to the driver averages at 40p per mile per year for the first 10,000 miles, and 25p per mile thereafter. The balance is viewed as (taxable) profit. A number of local authorities have moved away from nationally negotiated mileage reimbursement rates, and adopted instead those promoted by the Inland Revenue.

6.4.4 Pool cars can operate at an average cost of 26p per mile – roughly 50% of the cost of casual user allowance, and less also than essential user allowance. The Authority can make a major financial saving by investing in much greater numbers of pool cars and requiring their use instead of the private cars wherever feasible

6.4.5 It is important that our employees support public transport where possible. As well as providing carbon savings, not to do so would conflict with wider transport policy, expressed in the Local Transport Plans, and potentially expose the Authority to accusations of double standards. Doing so also ploughs funds back into the public transport network, which has a small but important impact on overall viability.

6.4.6 Greater use of pool cars can play a significant role in reducing CO2 emissions from work-related travel. Pool cars decrease the incentive to undertake excessive mileage, as there is no financial gain to the employee. They also allow the employee to use other means to travel to work in the knowledge that their own car is not required while at work. In addition, ensuring that pool cars are highly efficient and wherever possible use alternative fuels will further increase CO2 savings (e.g. using LPG over petrol). A pool car system currently works successfully at Trent Bridge House, which is shown up in the staff travel

survey as the work site with the lowest percentage of staff commuting by car (just 47.9%). An added benefit will also be higher safety standards across the range of vehicles achievable by virtue of better specification.

6.4.7 Video and web-based conferencing is another method of reducing the need to travel. A system has already been installed at County Hall, and work needs to be done to investigate the feasibility of mileage and cost savings by investing in video conference facilities at other major sites around the County.

Aim : *Reduce the negative impacts of work related journeys undertaken in private cars (the "grey fleet") by NCC staff, resulting in a reduction of CO2 emissions.*					
Key Actions	**Timescale**	**Contribution towards Aim**	**Total Estimated cost**	**Estimated saving per year**	**Target CO2 emission reductions per year**
1. Set up effective online monitoring system to record and track work related journeys.	2007/8	Gives baseline data and a method of tracking progress.	Potentially large	Each 1% reduction in overall business mileage would save the County Council an average of £50,000. Journeys by pool cars could save up to 50% of the costs of mileage claims.	1% reduction in business mileage equates to a CO2 saving of 3.8 tonnes per year
2. Ensure managers apply rigorous management control over mileage claims, particularly the existing requirements to use public transport or car share wherever reasonable and possible before claims for private car use can be authorised.	2006/7	Reduces unnecessary business miles.	Nil		
3. Consider changing guidance to make the use of pool cars rather than private cars the preferred option, where pool cars are available and public transport is not a viable option	2006/7	Reduces unnecessary business miles by grey fleet vehicles.	Nil		
4. Consider annual mileage limits for Groups or teams	2006/7	Reduces unnecessary business miles by grey fleet vehicles.	Nil		
5. Consider business case for phasing out or immediate cessation of essential user allowances	2006/7	Reduces unnecessary business miles by grey fleet vehicles.	Nil		

6. Consider business case for abandoning nationally agreed mileage rates, and instead adopting inland revenue rates	2006/7	Discourages excess miles being done as a "perk of the job".	Nil		
7. Significant increase in the number of pool cars in conjunction with (3) above. These should be small, efficient models wherever possible.	2006/7	Reduces the need for essential users to own and use private vehicle.	Average £7000 per car (Car clubs as an alternative are being investigated by the LTP team)		
8. Online (Intranet) pool car booking service to monitor bookings and unavailability electronically	2007/8	Reduces the need for casual car users to use their own vehicle for business journeys. Builds business case for more pool vehicles and polices unauthorized private car use.	Potentially large		
9. Promote car sharing for journeys to meetings	2006/7	Halves the business miles by grey fleet vehicles.	Minimal		

6.5 Fleet Vehicles

6.5.1 The County Council's fleet of vehicles is a large and visible reminder to the public of the services we offer. If fleet vehicles on view are not as environmentally clean as they could be, there is a danger that the Authority's wider credibility in leading action on climate change will be undermined. The travel plan should work more closely with fleet managers to ensure that the environmental impacts, particularly carbon, of the Council's fleet are minimised. Additionally, there is an opportunity for financial savings to be made as fuel costs can be reduced.

Aim : *To reduce the environmental impact of Nottinghamshire County Council's fleet of vehicles, resulting in a reduction of CO2 emissions.*					
Key Actions	**Timescale**	**Contribution towards Aim**	**Total Estimated cost**	**Estimated saving per year**	**Target CO2 emission reductions per year**
1. Feed back the recommendations of the recent Energy Savings Trust fleet health check of the County Council fleet, and develop an action plan accordingly	2006-7	Increasing the efficiency of the fleet will reduce both carbon emissions and costs	Minimal	Implementation of action plan could produce cost savings of 5-10%[2]	Implementation of action plan could produce CO2 savings of 3%[2]
2. Introduce an increasing proportion of bio fuels starting with 5% bio diesel.	2008	Bio fuels will reduce CO2 output	5% mix would be neutral	Zero	44

6.6 Alternative working practices

6.6.1 Reducing the need to travel altogether is the most effective way of cutting the carbon emissions created by staff travel. Whilst retaining the existing level of service delivery, it is still possible to use various flexible working practices to reduce travel. The staff survey highlighted that 48.3% of respondents felt that formalised working from home would significantly reduce their work related travel, and 44.5% of respondents would like to use more flexible working (e.g. 9 day fortnight, increased flexi allowance) for the same reason.

6.6.2 Whilst these measures can be implemented as part of the travel plan, they are also seen as a staff "perk" that can play an important role in staff recruitment and retention. The travel plan should work closely with Human Resources to ensure that travel reduction can be promoted through inductions and working practices.

[2] Gfleet report to Nottinghamshire County Council following the Fleet Health check in March 2006

Aim : *Reduce the need for NCC employees to travel to work, and for work, resulting in a reduction of CO2 emissions.*					
Key Actions	**Timescale**	**Contribution towards Aim**	**Total Estimated cost**	**Estimated saving per year**	**Target CO2 emission reductions per year**
1. Work with human resources to investigate increases of flexitime arrangements (e.g. 9 day fortnight) and the availability of remote working (e.g. working from home / other bases)	2006-10	Reduces the number of commuter journeys per month.	Minimal	Minimal	Average 10% reduction in commuting
2. Work with IT and facilities to maximize potential for web and video conferencing.	2006-10	Reduces the need to travel to face to face meetings.	Minimal	Minimal	Minimal

6.7 Additional transport actions identified

6.7.1 A number of other potential actions have been identified as follows:

Aim : *To make the elements of the travel plan relevant to the employees and their jobs at site level.*				
Actions	**Timescale**	**Contribution towards Aim**	**Estimated cost/saving**	**Target CO2 emission reductions**
Incorporate carbon efficiency standards into staff lease-car plan	2006/7	Reduces CO2 per mile travelled	Information not available	Information not available
Review distribution patterns of Social Services meal delivery	2006/7	To identify fuel savings	Information not available	Information not available
'Green taxi service' Explore opportunity of low carbon vehicle available to transport staff between NCC office locations	2006/7	Reduces CO2 per mile travelled	Information not available	Information not available

7 WASTE

7.1 Introduction

7.1.1 The County Council is responsible for a considerable tonnage of waste, both from offices, and from construction and other activities. Where this waste is bio-degradable, it produces either methane if it goes to landfill, or carbon dioxide if it is incinerated. Both are greenhouse gases.

7.1.2 The Authority's efforts to reduce the amount of bio-degradable waste has been undertaken through two main initiatives: Environmental Champions working in offices, and Schools Waste Action Club working with schools. Other sources waste, such as road planings and construction waste from new building, are important but less of a climate change issue as this type of waste is inert. The energy used in the manufacture of (for example) concrete is not considered here, but under the procurement section.

7.2 Waste proposals

7.2.1 The following are the proposals for further reducing the County Council's levels of waste and consequent carbon emissions:

Aim:- *to improve waste management arrangements to minimise waste generation and reduce carbon emissions*.					
Key Actions	**Timescale**	**Contribution towards Aim**	**Total Estimated cost**	**Estimated saving per year**	**Target CO2 emission reductions per year**
Maintain and promote champions scheme at existing sites.	Ongoing	Maintains existing waste reductions.	Minimal		Information not available

Carry out comprehensive waste audit, establish a robust carbon emissions baseline and improve collection options.	April 2007	Provides data to enable strategy development.	£6,000	Information not available	Information not available
Produce a corporate waste management action plan	Dec 2007	Contributes to the overall waste reduction and carbon management plan	Information not available	Information not available	Information not available

8 PROCUREMENT

8.1 Introduction

8.1.1 Although it has not yet been possible to establish a baseline of carbon emissions from procurement activity, these are likely to be very significant. It is therefore appropriate to consider a programme of actions for reducing emissions from procurement as part of a wider sustainable procurement initiative.

8.1.2 The County Council is part funding a regional Sustainable Procurement project in conjunction with the East Midlands Centre of Excellence and the Nottinghamshire and Derbyshire Local Authorities Energy Partnership. This will provide one mechanism to support improvements in procurement practice in the Authority. Other specific proposals are set out below:

Aim:- *to reduce the carbon emissions from procurement practice by the Authority*					
Key Actions	**Timescale**	**Contribution towards Aim**	**Total Estimated cost**	**Estimated saving per year**	**Target CO2 emission reductions per year**
Research the best way to measure and account for the carbon impacts of procurement, and establish a baseline for future reviews of the carbon management Plan	2007	Helps to inform	Information not available	Information not available	Information not available
Ensure the commitments made to sustainable procurement in the County Council's sustainability policy and Procurement Strategy	2008		Information not available	Information not available	Information not available

are widely understood and recognised by procurement staff					
Assess the procurement practices and procedures within the County Council, with particular reference to the use standard contracts, suppliers lists, checklists and toolkits, quality control processes, the numbers of staff making procurement decisions; and the assessment of community benefits. Make recommendations for improvements as appropriate	2007		Information not available	Information not available	Information not available
Ensure that staff who are making procurement decisions have available to them the correct information and technical expertise in order to make more sustainable procurement choices	2008		Information not available	Information not available	Information not available

9 PERFORMANCE MANAGEMENT

9.1 Specific targets and funding implications

9.1.1 In order to meet the reductions set out in the plan the minimum target the County Council should adopt for reducing carbon emissions is 1% per year. However every effort should be made to double this to 2% in the first 5 years in order both to make a bigger contribution to tackling climate change, and to provide a stronger lead to the local community.

9.1.2 The cost implications of doing this depend on the measures to be taken. However the following table sets out the proposals and indicates budgetary funding implications:

Carbon Management for Buildings

Existing CO2 emissions excluding green electricity 90,400 tonnes per annum

This programme below would reduce current emissions by 11.5% in first 4 years, and by 53% between 2006 and 2030 excluding purchase of green electricity.

Initiative	Budget	Grant Funding	Benefits	Savings (£/yr)	CO2 savings(t/yr)		Due to Complete	Project Achievements
Achieved/In Progress								
PSA	£1,000,000	£1,000,000	Public Service Reward Grant received which covered expenditure		4000	1	2006	15 woodheat schools and 19 gas
LAEF	£1,000,000	£500,000	Carbon trust Grant	£300,000	3400	2	2009	Energy efficiency in buildings
Biomass Boilers	£1,500,000	£500,000	Bio-Energy Capital Grant from Big Lottery Fund		3000		2008	27 additional woodheat schools
Sub Total:	**£3,500,000**	**£2,000,000**		**£300,000**	**10400**			

Progression (Should be from existing budget provision)								
LAEF Extension[3]	Reinvest existing LEAF (£1,000,000)		Yearly return on original investment forms a revolving fund	£300,000	7000	*	2017	Energy efficiency in buildings
Coal to Gas Boilers	£800,000*		Corporate boiler replacement programme		350	4	2011	14 additional gas schools
Sub Total:	**£800,000**			**£300,000**	**7350**			
Future Schemes (Requires new funding)								
LAEF Acceleration	£11,000,000		Increase the fund value to enable renewable schemes	£2,000,000*	22,000*		2030	Energy efficiency and renewables
Biomass Boilers Ext.	£1,320,000		Further boiler replacements which opt for biomass		1500		2011	19 additional woodheat properties
20% Biofuel Boilers	0*		Most boilers can burn a 20% mix of Biofuel		1200*		2007	Change of fuel for 45 boilers
100% Biofuel Boilers	500000*		Modifications to boilers will vary for burner type		6000*		2014	Conversion of 45 boilers
Sub Total	**£12,820,000**			**£2,000,000**	**30700**		2014	Conversion of 45 boilers
Grand Total	**£17,120,000**			**£2,600,000**	**48450**			

*Predicted on best known information

Notes

1. Carbon savings have not all filtered through to annual figures yet.
2. Model based on the first 20 schools surveyed
3. LEAF extension is an automatic progression of the successful implementation of the LAEF scheme.
The revolving fund will continue beyond 2017 if implemented successfully. The money to invest will remain constant unless further funds are added.
Budget is based on the amount available to spend over a 10 year period.
4. This is known possible gas conversions and is not definitive. It does not include PFI schools.

Carbon Management for Street Lighting

Existing CO2 emissions excluding Green electricity 18,700 tonnes

Expected savings from programme below 1,599 tonnes or 8% over 5 years.

Initiative	Budget	Grant Funding	Benefits	Savings (£/yr)	CO2 savings(t/yr)		Due to Complete	Project Achievements
Investigate dimming lighting	No data available	No data available	Reductions in energy usage	Estimated £175,000	1,346		April 2007	5% reduction in energy usage
Improve photo electric switch on	£250,000	No data available	Lighting will be more sensitive to lighting levels	£33,000	253		April 2008	Better control of lighting
Grand Total	**£250,000 +**			**£208,000**	**1,599**			

Carbon Management for Transport

Existing CO2 emissions 25,184 tonnes

The programme below will produce a reduction in the region of 2090 tonnes of CO2, an 8% CO2 saving in the next 5 years.

Initiative	Budget	Grant Funding	Benefits	Savings (£/yr)	CO2 savings(t/yr)		Due to Complete	Project Achievements
Achieved/In Progress								
Install car park management systems and implement charging	£500,000	None available as yet	Opportunities to incentives car share. Income can be used for other projects	£12,000	10% reduction in commuting would give 2,000	1	Report by autumn 2007	Reduction in car commuting and one person car use.
Improve rigour of office mileage claims. Set incentives to reduce claims.	Nil	None available as yet	Improve efficiency of staff travel			2	Report by autumn 2007	A reduction in the negative impact of mileage undertaken in private cars
Introduce further pool cars. Reduce use of	£70,000	None available as		£250,000	19	3	Report by autumn	

essential user mileage allowance and consider adopting inland revenue mileage rates.		yet					2007	
Implement EST fleet health check recommendations	Minimal	None available as yet	Improve efficiency of council fleet	5-10%	In the region of 30	4	Report by autumn 2007	Better use of existing fleet.
Introduce bio fuels to the fleet	Cost neutral	None available as yet	No-cost improvements to CO2 out put.	Zero	44		2008	Carbon savings at no cost.
Grand Total	**£570,000**			Information not complete	**2,093**			

1 Assuming 30 spaces saved. Every space reduced saves £400
2 Assuming a 5% improvement. For every 1% reduction in business mileage a saving of £50,000 would result. Each 1% saving would produce 3.8 tonnes.
3 10 cars at average £7,000 per pool car
4 Gfleet report to Nottinghamshire County Council following the Fleet Health check in March 2006

Assumptions:

- External funding is sought wherever possible
- Energy cost savings are ring-fenced for further investment (invest to save). This includes savings made in schools, who currently pay their own energy bills and will need to agree to contribute a proportion of savings back to the Authority in return for capital investment
- £50,000 development fund is made available to develop projects further

9.1.3 The programme set out above could deliver an overall 9.5% reduction in corporate carbon dioxide emissions over the next 5 years. The figures set out are indicative, for medium term financial planning purposes. Detailed proposals for each financial year will be submitted to Cabinet for approval as part of the annual budget-setting process.

9.2 Delivery, monitoring and reporting frameworks

9.2.1 Delivery of the Carbon Management Plan must be closely project managed, and progress rigorously monitored and reported. The following measures should be put into place:

- Overall Cabinet responsibility for delivery of the Carbon Management Plan to rest with the Cabinet Member for People and Performance.
- Executive responsibility for delivery of the Carbon Management Plan to be the responsibility of the Service Director for Planning and Sustainability within the Communities Dept though practical project management and co-ordination will be with the Sustainability Team. Specific delivery of projects will involve people from across the organisation
- All specific targets in the CMP placed on the PRIDE performance management system
- Progress with delivering these targets monitored on a quarterly basis, and reported formally to the Sustainability Board.
- Progress reported annually to Cabinet and Corporate Management Board, and published in the County Councils Annual Performance Report