

A



City Of Lincoln Climate Change Strategy

Phase 1

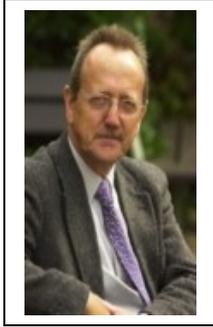
**Local Authority Information
City of Lincoln Council**

LA officer	Kate Bell
LA address	Directorate of Development and Environmental Services City of Lincoln Council Beaumont Fee City Hall Lincoln LN1 1DF
LA contact telephone number	01522 881188
LA contact email address	Kate.bell@lincoln.gov.uk
LA website	www.lincoln.gov.uk

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	Prepared By	Reviewed By	Approved By	Date
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Forward



Councillor Richard Metcalfe – Leader of the Council

The City of Lincoln Council is committed to reducing green house gas emissions and energy consumption in all its operations and services to reduce the threat of climate change. The authority is taking a lead in addressing its local and global responsibilities to tackle climate change.



Councillor Fay Smith - Sustainability Portfolio Holder

The climate change strategy outlines how the authority will adapt as well as mitigate against climate change. The strategy aims to encourage all sectors in the local community to reduce the negative impact on our environment. Through signing up to the strategy the authority has made public our commitment to action.



Andrew Taylor – Chief Executive and Town Clerk

The City of Lincoln Council is committed to a core value of promoting sustainability. The authority's aim is for a best possible environment and therefore takes the threat of climate change seriously. The City Of Lincoln Council is committed to reducing Carbon Dioxide and energy consumption.



Lance Richardson – Chair of City of Lincoln Council Local Agenda 21 Working Group

The Local Agenda 21 working group have been tasked with preparing the climate change strategy to address causes and effects of climate change in Lincoln. The Local Agenda 21 group will continue to ensure that climate change is a priority throughout the authority.

Executive Summary

The City of Lincoln Council recognises the implications that climate change has for the continuing prosperity and the environmental and social well being of the City. In order to minimise the impacts of climate change the authority has produced a Climate Change Strategy.

This Strategy addresses the actions needed to both adapt to climate change and to reduce greenhouse gas emissions. In particular, it attempts to start a public dialogue on our future energy use, and recommends actions for all service areas within the authority.

The main objectives of the Climate Change Strategy for Lincoln are to:

1. Assess the contribution that the City of Lincoln Council makes towards the causes of climate change through a study of past trends and future scenarios.
2. Identify how the climate in Lincoln has changed already and forecast change over the next 80 years.
3. Identify the best way forward to substantially reduce greenhouse gas emissions within Lincoln and also how the authority should adapt to best deal with the predicted changes in climate.

It is vital that as a City we are prepared for the impacts that climate change will inevitably bring. There are clear signs that some of these impacts are already having an effect on aspects of our life and the council's services. Our businesses, organisations and residents need to be aware of these impacts so that we can adapt in a way that contributes towards the well-being of the City.

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1. Introduction

1.1 The aim of the strategy

The City of Lincoln Council recognises the implications that climate change has for the continuing prosperity and the environmental and social well being of the city. The Council also acknowledges responsibility for its own emissions and wishes to champion mitigation against emissions through City wide partnership actions.

The main objectives of the Climate Change Strategy for Lincoln are to:

Identify how the climate in Lincoln has changed already and forecast change for the future;

Address how the City of Lincoln Council can make changes to reduce the authority's impact on climate change and opportunities to adapt services in response to changing climate.

1.2 Green House Gases (GHGs)

The main human influence on global climate is likely to be emissions of greenhouse gases (GHG) such as carbon dioxide (CO₂) and methane. At present, about 6.5 billion tonnes of CO₂ is emitted globally each year, mostly through burning coal, oil and gas for energy. Water vapour (H₂O), carbon dioxide (CO₂), nitrous oxide (N₂O), methane (CH₄) and ozone (O₃) are the primary greenhouse gases in the Earth's atmosphere. This build up of GHGs in the earth's atmosphere has been identified as the cause of the greenhouse effect. Therefore human activities are increasing significantly the concentrations of some gases in the atmosphere, such as GHGs (mainly CO₂), which tend to warm the earth surface.

1.3 Why?

As there is no statutory duty for the City Of Lincoln Council to produce a climate change strategy most of the work carried out in the past has been "voluntary". So why reduce emissions? The City Of Lincoln Council recognises the overall social and economic as well as the environmental benefits of implementing the strategy and that it will improve the quality of life of people living and working in Lincoln.

1 Impacts of Climate Change

1.4 Why does Lincoln need to act on climate change?

The Intergovernmental Panel on Climate Change report on impacts, adaptation and vulnerability (IPCC, 2001) observes that there are increasing signs of climate change across the globe. These can be seen in changes in sea level, glacial melt, weather pattern changes and biosphere changes. Climate change is a global problem with global impacts. No one country or city can solve the problem, but all countries and cities will be affected. The Intergovernmental Panel on Climate Change (IPCC) was established in 1988 to report on the state of knowledge regarding climate change. The reports produced by the IPCC are based on the work of several hundred researchers from around the world, and are subject to global peer review.

Although climate research had proceeded for decades, it was the First Assessment Report of the IPCC in 1990 that provided the consensus required for political action. The report tentatively predicted that global average temperature might rise at 0.3°C per decade ($\pm 0.15^\circ\text{C}$). It highlighted uncertainty and disagreement regarding possible impacts and responses, and recommended commencing negotiations with a view to securing global agreement. This agreement was reached at UNCED, the 'Earth Summit' in Rio de Janeiro two years later, in the form of the United Nations Framework Convention on Climate Change (UN FCCC)

Whilst the need for adaptation becomes clearer as we see the impacts of current climate change, it is important that we remember that we must still act to mitigate future change. Current adaptation work attempts to deal with past emissions. Current and future emissions will lead to future adaptation issues. This chapter looks at how the climate is predicted to change in Lincoln and how this might impact on aspects of our life.

1.5 Predicted changes to Lincoln's Climate

The following diagrams illustrate the predicted changes to Lincoln climate in terms of temperature and rainfall by the 2080s within the context of the rest of the East Midlands. It is based on scientific predictions made by the United Kingdom Climate Impacts Programme (UKCIP). This data was used for a report commissioned by the East Midlands Round Table for Sustainable Development into the Impacts of Climate Change for the East Midlands (2000).

By around 2080 Lincoln's climate is predicted to have changed in the following ways:

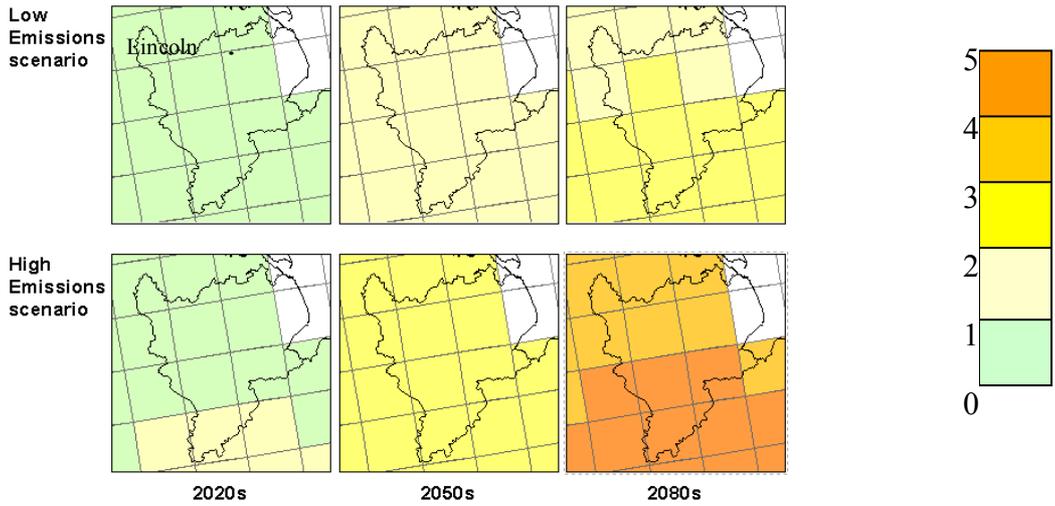
- An annual average temperature increase of about 3.2 C
- An average winter temperature increase of about 3.6 C
- An average summer temperature increase of about 2.6 C
- An average annual increase in rainfall of about 8%
- An average winter increase in rainfall of about 20%
- An average summer decrease in rainfall of about 40%
- More intensive rainfall during winter months
- An increase in the number of storms
- A significant decrease in the occurrence of frost and snow

Annual Average Daily Temperature

East Midlands

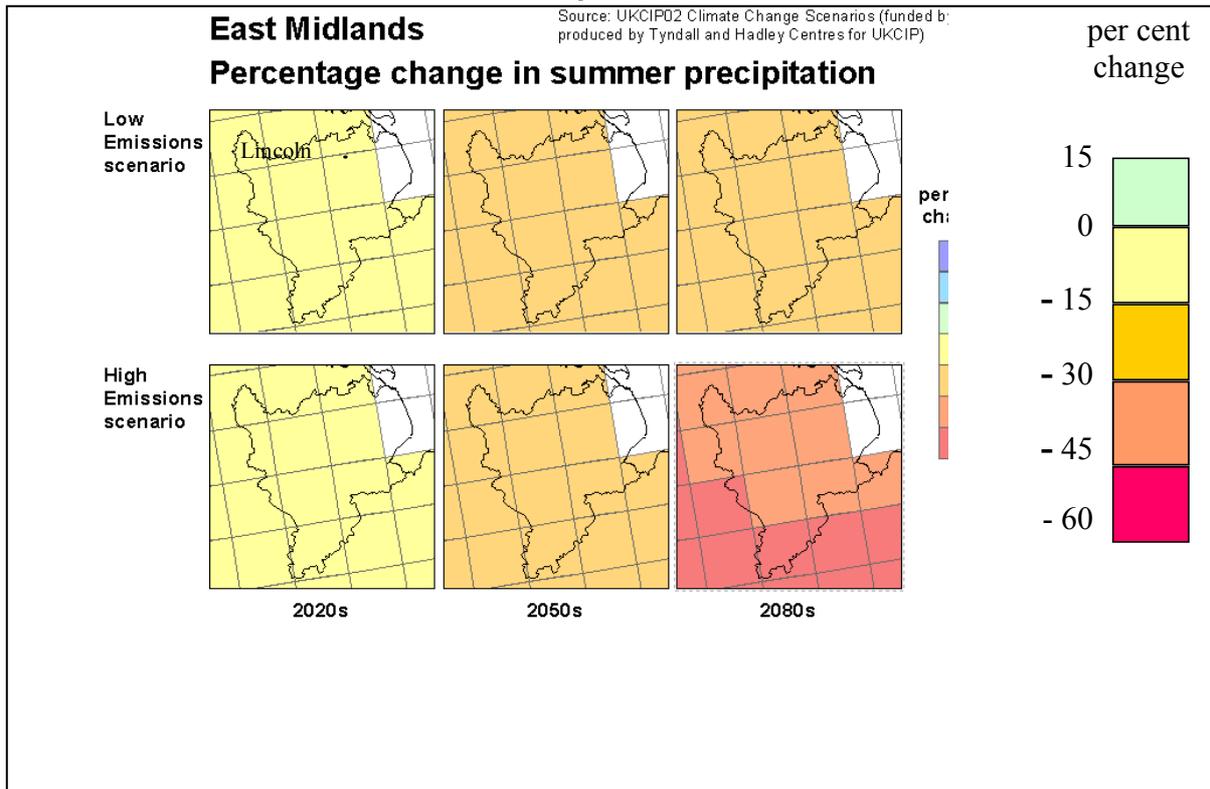
Source: UKCIP02 Climate Change Scenarios (funded by Tyndall and Hadley Centres for UKCIP)

Change in annual average daily temperature



Annual Average Daily Temperature

Summer Precipitation



Source UKCIPCC Scenarios, produced by Tyndall and Hadley Centres

3. Steps taken towards reducing the impact of climate change.

3.1 Background.

Whilst there are clear international, national and regional guidelines for reducing greenhouse gas emissions and in particular, legally binding agreements at the international level, there is very little statutory responsibility for the City of Lincoln Council and others to reduce greenhouse gas emissions. However it is generally accepted that authorities adopting a proactive response to the threat of climate change are likely to reduce risk and financial costs in the long term. The City of Lincoln Council have either produced or contributed towards the following documents to address climate change related issues:

- Lincoln's Community Plan
- Local Plan (Draft Local Development Framework)
- Air Quality Action Plan
- Environment Best Value Action Plan
- Local Transport Strategy
- Home Energy Conservation Act report
- Environmental Purchasing Policy & Guide
- Corporate Procurement Policy

The following documents are currently being produced

- Car Parking Strategy
- Biodiversity Action Plan
- Local Development Framework
- Open Space Strategy

As well as the policies mentioned there are a number of the nationally set best value indicators that cover issues relevant to climate change e.g. the average energy rating of local authority owned dwellings (BVPI 63), local bus services (passenger journeys per year) (BVPI 102)

3.2 Actions in Lincoln (progress to date)

3.2.1 Waste

Waste contributes to climate change in a number of ways. The most damaging issue concerning waste is the amount of energy required to produce items in the first place i.e. aluminium cans, plastic bottles, plastic bags. Once these items have been disposed of in landfill sites they can take hundreds of years to biodegrade. The biodegradable waste in landfill releases methane into the atmosphere and plastics can produce leachate (liquid waste) which is released into soil and water ways.

The Council currently operates a fully integrated waste collection service which is run by a single contractor. CORY are contracted until 2006 to handle the collection, treatment and disposal of the city's domestic waste. Cory's contract for managing the City's waste includes:

- A weekly black sack collection.

A weekly collection of paper, cardboard, plastic, aluminium and steel cans.

A fortnightly wheeled-bin collection of green waste.

Use of three landfill sites at North Hykeham, Whisby, Leadenham for all waste that can't be recycled.

In addition the council offer the following services:

Recycling sites located throughout the city for collection of glass, clothes and books.

The waste collection service helps the City Council towards meeting its target of 30% recycling for domestic waste only. However the vast majority of Lincoln's waste is non domestic.

In terms of addressing waste issues in Lincoln the Council have achieved the following:

Increase recycling rate. Currently 20+% waste is recycled reducing landfill

Promote reduction of total household waste.

Cleansing and refuse contractors (CORY – up to 2006) accredited with ISO14001

3.2.2 Transport

Traffic is just one of the contributors to carbon dioxide and current levels of CO₂ do not exceed recommended government levels. However there is still a need to reduce traffic in Lincoln due to high levels of nitrogen dioxide (not a GHG) and congestion problems and to take a proactive stance to ensure that CO₂ is reduced.

The council have achieved the following in their efforts to reduce pollutants from traffic and reduce congestion in Lincoln:

An electric uphill/downhill bus is in operation, helping to reduce emissions in the city centre.

Currently over 80% of the council's vehicle fleet run on LPG, the intention is to gradually phase out old vehicles running on diesel and replace with new LPG vehicles.

A car sharing scheme for City of Lincoln Council employees is currently in operation.

Visitors to large scale events (e.g. Lincoln Christmas Market) are encouraged to use public transport, coaches and a park and ride system beyond the city boundary.

Partnership Working:

Draft Air Quality Management Plan has been out for consultation and will be tied in with the Emerging Options Study for the LDF.

Raise awareness and provide training on environmental sustainability to residents, businesses and community groups.

Visitor Management Strategy – Improve signage to encourage visitors to walk/cycle to various attractions in Lincoln (not just castle/cathedral)
Promote Central Trains offers (i.e. 2 for 1) to encourage tourists to use public transport.
Involved in promoting 'Taste of Lincolnshire' (encouraging a reduction of food miles)

The council is working with a range of other organisations in Lincoln on the following:

The council is working closely with Lincolnshire County Council on the Lincoln Transport Strategy
A sustainable transport forum has been formed to address integrated sustainable transport issues in the greater Lincoln area.
The council is working with the Local Strategic Partnership (LSP) and Lincolnshire County Council to promote travel plans to businesses and organisations in Lincoln.
The council is currently working with Lincolnshire County Council to produce a car parking strategy. In the short term this will address better use of existing car parks and security.
The council is currently working with Lincolnshire County Council to review the seven existing community travel zones (CTZs) and start work on CTZs for the Historic core, City Centre in March 2005.

3.2.3 Biodiversity

The threat of climate change will undoubtedly place local biodiversity under particular risk. In addition to habitat loss, pollution and over-exploitation, species and natural systems are now faced with the need to adapt to a changing climate. It is important to recognise that biodiversity can also help us adapt to changing climate. For example an increase of tree planting can result in multiple benefits such as carbon sequestration, soil protection, improvement in soil condition, water management, shade and shelter and improve the microclimate.

Therefore the council actively support the following schemes:

The Tree Warden scheme.
Carbon Sequestration (increase tree planting/tree awareness)
100 to 150 trees are planted annually in Lincoln consisting of both replacement and extra trees.

3.2.4 Energy

The most significant greenhouse gas is carbon dioxide and is a major contributor to global warming. Its major source is from the burning of fossil fuels such as coal, gas and oil (including petrol and diesel used in cars).

The council have adopted the following approaches to reduce energy consumption and carbon dioxide emissions.

Implementation of the Green Design Guide (to be incorporated into the LDF)

Raise awareness and provide training on environmental sustainability to city council employees, residents, businesses and community groups.

Provide training for tourist related businesses on merits of adopting sustainable tourism practices (i.e. marketing, environmental financial).

CO₂ emissions have declined in Lincoln since 1996 in both public and private sector housing.

4 Adaptation to climate change.

Lincoln needs to identify where adaptation is likely to be needed to protect the City's communities and businesses from disruption. However the City Of

Lincoln Council recognises that any adaptation strategy must meet sustainable development criteria. In particular adaptations that lead to increasing greenhouse gas emissions must be avoided.

In order to contribute towards a city wide adaptation the City of Lincoln Council must lead the way by demonstrating adaptation measures as part of the authority's own operations and services. The City Of Lincoln Council's response to climate change requires joined up, corporate working although some of the issues identified in tables 4.1, 4.2 and 4.3 sit more comfortably under specific service areas. However many issues identified in the following tables are **not** the sole responsibility of service identified.

4.1 Examples of the threats and opportunities to be considered by service areas within the Directorate of Housing and Community Services.

Service	Threats/Opportunities	Action	S,M,L term
Leisure and Recreation	Extended summer season will result in increased outdoor sporting activities on recreation grounds.	Consider ways to increase awareness of dangers of exposure to sunlight.	S
	Higher risk of skin cancer / sun burn due to hotter summers and increased outdoor recreation	Provide more shade in public recreational areas –i.e. trees, pergolas (grounds/open space)	S/M
	Risk of water shortages due to drier summers	Install water systems to store and reuse grey water, install low flow taps.	M
		Irrigation scheme in important/high profile areas and football pitches. Consider indoor all weather surfaces.	M/L
Cleansing Services	Increased temperature causing service disruption and heat stress to the public.	Avoid exposed places and provide shade or cooled waiting areas	M
	Increased rainfall intensity affecting embankments and bridge piers, and washing more debris into gullies	Increase monitoring and maintenance of embankments and bridge piers, and increase gully emptying activity.	S/M
		Establish close working relationship with the EA and British (S) Short - <2years.	M
	Increased problems of smell caused by domestic waste left too long in summer.	(M)Medium – 2-5 years Con:(L) Long - > 5 years colle	M/L

		<p>in the city centre area affected by heat island effect. (The impervious surfaces of cities such as concrete, tarmac and the wide variety of roof surfaces soak up solar energy and reradiate it as thermal infrared radiation (heat). The result of this is that cities are warmer both day and night than the surrounding countryside.)</p>	
Grounds /open spaces	Extreme temperatures effect surface quality of car parks, paths etc.	Require monitoring for any changes to quality.	M/L
	Warmer winters with reduced risk of frost.	Opportunity to plant Mediterranean varieties, non hardy varieties.	M/L
	Increase in rate of growth and length of growing season of parks and open spaces.	Will require more work which should be reflected in long term budget forecasts	S/M
		Use slower growing plants in landscape schemes. Revise mowing/weed control schedule.	S/M
	Increase in rate of growth leading to year-round grass maintenance	Revise mowing/weed control schedule.	S/M
	Loss of trees and shrubs due to drier summers and wetter winters	Plant more trees and shrubs that will tolerate future conditions. Implement a wider application of moisture retention schemes.	S/M
		Need for more trees to act as shelter, carbon sequestration, binding top soil.	S
		Increased arboricultural support to nurture existing trees.	M
Longer periods of drought over summer.		M/L	
Longer summer period likely to increase use of parks and open spaces.	Irrigation scheme in important/high profile areas and football pitches. Consider indoor all weather surfaces.	S	
	Increased demand on		

(S) Short - <2years.
(M)Medium – 2-5 years
(L) Long - > 5 years

		<p>service to be considered in long term budget forecasts.</p> <p>Increased need for conservation work to be carried out at Hartsholme and Swanholme and Lincoln's SSSIs</p>	S/M
Facilities Management (CoLC Buildings)	Risk of water shortages due to drier summers	Install water systems such as grey water collection, install low flow taps.	S
	Shortage of fossil fuels leading to increase cost	Green electricity supplier in new electricity contract	S
	Temperature increases affect on working space environment	Solar control and insulation film assists in meeting Health & Safety Regulations 1992 (reducing the need for room heaters and fans)	S/M
	Possible increase in buildings insurance to cover damage from extreme weather events	Central point for refrigeration – save energy also enable food to be kept cool. Consider in long term budget proposals.	S
Public Sector Housing (9000 public sector housing stock)	Risk of water shortages due to drier summers	Install water systems, promote use of water butts and install low flow taps.	S
	Increase in energy bills as fossil fuels stocks diminish Temperature increases affect on living space environment	Increase energy efficiency of housing stock. Consider renewable energy sources. Use thermal properties of materials (Solar control and insulation film) to improve cooling and retrofit energy efficient air conditioning	S/M
	Wetter winters causing damp, condensation and mould problems	Upgrade weatherproofing systems and manage internal environment	S/M

(S) Short - <2years.
(M)Medium – 2-5 years
(L) Long - > 5 years

4.2 Examples of the threats and opportunities to be considered by service areas within the Directorate of Development and Environmental Services.

Service	Threats/Opportunities	Actions required	S,M,L Term
Planning Policy & Transport	Increase flood risks	Plan for preventative and remedial maintenance of existing public and private sector housing stock.	S
	Climate change influence on natural environment	Plan for wildlife corridors to allow natural migration.	S
Development Control	Increase flood risks	S106 to require flood alleviation scheme for new developments. (i.e. Swanpool / Skewbridge)	S
		Reduce flood risk by including sustainable urban drainage systems (SUDS) in new developments. (reduce surface run off and retain water locally)	S/M
	Clay soils are prone to shrinkage as they dry out, summer drought and increased temperatures could exacerbate this problem.	Planning decisions will take into consideration clay shrinkage and subsistence risks as a result of climate change.	S
	Urban heat island effect in Summer periods	Maintain existing urban green space to provide cool and shaded areas to ameliorate urban climate	S
Building Control	Intense rainfall events	Encourage rainwater systems in buildings for rainwater collection and storage to help reduce surface run off	S
	Predicted temperature rise of 3.5 degrees Centigrade	Promote new building design adequate for dealing with increased temperatures i.e. low energy buildings with natural ventilation	S
Env. Sust. - Health	Increase risk of bacterial contamination in food processes.	Consider ways to increase awareness of food hygiene practices and revise best practice	S
	Higher risk of skin cancer / sun burn due to hotter summers and increased outdoor recreation	(S) Short - <2years. (M)Medium – 2-5 years (L) Long - > 5 years	S

Env. Sust. - Pollution	Higher levels of dust in the air due to drier summers	May need to hose down streets in urban areas.	M/L
	Increased risk of flooding caused by intense and unpredictable rainfall events	Ensure drains, road gulleys cleaner properly to allow for high levels of surface run off.	S
	Increase in Winter temperature results in: The speeding up in the life cycles of pests such as rodents and insects, which brings about faster population growth. Certain species could survive the British Winters, presenting an increase risk of the incidence of certain borne diseases such as Malaria.	Increase in pest control treatments.	S
Env. Sust. – Environmental promotions	Increase need to conserve water in case of summer droughts	Promote use of water butts and other water saving devices for homes and businesses.	S
	Rubbish will decay more rapidly in higher summer temperatures in City centre (heat island effect)	Continue to promote waste reduction and recycling and composting of food waste.	S
	Climate change will have direct and indirect impact on the community	Increase awareness raising, provide advice and information on how the community should respond to both the threats and opportunities of climate change.	S
Economic Sustainability- Business and Regeneration	Drier summers and wetter winters will influence future building design Climate change provides changing markets e.g. tourism, and demand for new products	Rethink built environment and revise practice to suit (i.e. Make use of thermal properties of materials to improve cooling. Reduce solar heating using recessed windows, roof overhangs and shade.) (S) Short - <2years. (M)Medium – 2-5 years (L) Long - > 5 years	S
Econ. Sust. - Tourism	Increased temperatures enable a longer tourism season.	Promote local tourist related business awareness and proactive planning towards adaptation.	S

		Encourage business to adapt to new markets – i.e. evening economy.	S
		Opportunities to explore Tourism Flags with Socio economic benefits for Lincoln.	S
	Extreme weather conditions adversely affecting events	Consider weather insurance, continue contingency planning.	M

4.3 Examples of the threats and opportunities to be considered at a corporate level.

Many issues raised in 4.1 and 4.2 require joint responsibility across the authority and cross sector working. However this applies in particular to the following issues:

	Threats/Opportunities	Action	S,M,L Term
Joint responsibility across all service areas.	Increased vulnerabilities due to climate change	Ensure emergency procedures and equipment are updated to meet increased risk. Prepare risk assessment – physical plans and hazard maps for public areas	S
	Need to increase water storage capacity and reduce risk of flooding.	Dredging and removal of dumping from Brayford Pool, River Witham and city drains. Need for formal working relationship with EA and British Waterways	M
	Low water levels during Summer droughts can have an effect on poor water quality effecting humans and biodiversity of Rivers.	Requires partnership work from Upper Witham Drainage Board, Anglian Water, Environment Agency, Local Authorities, British Waterways.	S
	Increased temperature causing service disruption and heat stress to the public.	All service areas responsible (S) Short - <2years. (M)Medium – 2-5 years (L) Long - > 5 years -i.e. trees, pergolas.	

5 Mitigation against Climate Change

Climate change is a major issue affecting the City and requires action being taken to deal with the threat, improve quality of life, create jobs and help alleviate fuel poverty. Climate change necessitates a shared responsibility not just locally but globally. The City of Lincoln Council has a responsibility to take its share of this global burden by taking a proactive lead in reducing energy consumption and green house gas emissions. This approach will enable the City of Lincoln Council to set an example of good practice in Lincolnshire.

The authorities response to climate change requires joined up, corporate working although some of the issues identified in tables 5.1, 5.2 and 5.3 sit more comfortably under specific service areas. However many issues identified in the following tables and are **not** the sole responsibility of service identified.

5.1 Opportunities for reducing energy consumption and GHG emissions within the Directorate of Housing and Community Services.

5.1.1 Leisure and Recreation

Recommended Action	Timescale
<p>Aim to improve accessibility for pedestrians and cyclists, installing cycle racks.</p> <p>New recreation ground on the Skewbridge development will be within walking and cycling distance for local residents and priority of development will be to provide good access for both and non car modes.</p> <p>Distribute awareness raising materials, questionnaires etc at Leisure facilities.</p> <p>Possibility of introducing recycling facilities at Birchwood and Yarborough.</p> <p>Carry out an energy audit of COLC buildings and suggest changes that will result in greater energy efficiency.</p> <p>Tree planting on recreation grounds (subject to outcome of open space strategy)</p> <p>Make sporting events carbon neutral – i.e. 10 K race</p>	<p>To be discussed and decided by EPPOS/ DMT</p>

5.1.2 Public Sector Housing

Recommended Action	Timescale
<p>Energy efficient council housing. (9000 houses in Lincoln)</p> <p>Low energy lighting</p> <p>Offer advice, energy audits and advertise/promote energy grants and warm front scheme, clear skies</p> <p>Reduce hot water temperature to 55°C</p> <p>Investigate opportunities for renewable energy for council housing – solar thermal hot water heating systems, photovoltaic provide 30-50% of electricity needs (up to £250 000) (grants for 40-50% cost)</p> <p>Combined Heat and Power (CHP) Community heating. For either City Hall, Leisure centres, LA housing. (Grants available for up to 40% of capital costs available)</p>	

5.1.3 Facilities Management

Recommended Action	Timescale
<p>Real time energy monitoring for CoLC buildings. Identifies how much energy and water is being consumed within the buildings, can detect waste (i.e. leaks) and where they might be.</p> <p>Aim to reduce energy bill</p> <p>Investigate opportunities for renewable energy sources as part of CoLC building i.e. solar water, and heating systems for Leisure centres /City Hall</p>	

5.2 Opportunities for reducing energy consumption and GHG emissions within the Directorate Development and Environmental Services.

5.2.1 Planning

Recommended Action	Timescale
<p>Climate Change to be addressed as part of the built environment and natural environment LDF (production work starting 2007, implementation 2010)</p> <p>New developments (i.e. Swanpool / Skewbridge) will have easy access for pedestrians and cyclists.</p> <p>As part of new developments renewable energy sources will be investigated i.e. biomass.</p> <p>Phase 3 of the CCS will involve undertaking a travel to work survey of CoLC employees.</p> <p>Increase use of public transport through education and awareness raising campaigns.</p> <p>Car sharing (See air quality action plan for more details and Lincoln Transport Strategy)</p> <p>Promote Cycling, link up with Boston Distinct Council and Probation service cycle hire scheme.</p>	

5.2.2 Environmental Health

Recommended Action	Timescale
<p>Replace aerosols with compressed air for tackling wasp nests.</p>	<p>To commence immediately</p>

5.2.3 Economic Sustainability – Business and Regeneration

Recommended Action	Timescale
<p>Promote examples of good sustainable business practice, grants available, energy efficiency, building</p>	

<p>design etc. Provide advice, consult businesses (available on local data base) on climate change etc. Follow up with site visits. Work jointly with Lincolnshire County Council to promote adoption of Travel Plans by businesses in Lincoln Netregs – Groundwork Lincolnshire/Env. Agency Promote business awareness on EA regulations www.ea.gov.uk</p>	
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Events

Recommended Action	Timescale
<p>promote use of public/shared transport at events Carbon neutral events Recycling facilities at events</p>	

Tourism

Recommended Action	Timescale
<p>Extend current training to specially designed cost effective, energy efficient programs for accommodation businesses. Encourage uptake of renewable energy sources by tourism related businesses. Promote energy management systems (Green Globe 21) Define Cost/benefits to the industry</p>	

5.3 Opportunities for reducing energy consumption and GHG emissions within the Directorate of Resources.

5.3.1 Procurement

Recommended Action	Timescale
<p>All officers have access to Green purchasing guide Purchase low energy equipment Energy efficiency included in purchasing policies to be considered in all purchases by corporate procurement</p>	

Examples of corporate opportunities for reducing energy consumption and GHG emissions.

Recommended Action	Timescale
Make available a fleet of electric bikes for employees who work in/travel around Lincoln as part of their duties.	

6. Next Steps

6.1 Outline phase 2

This phase will involve the City of Lincoln Council working in partnership with a wide variety of external partners to research the following:

- Calculate a baseline for Carbon Dioxide emissions produced in Lincoln for 05/06
- Future emissions forecast for Lincoln (i.e. 2015)

Calculate energy consumption based on residential, commercial, transport and industrial usage in Lincoln
Future energy consumption forecast for Lincoln (i.e. 2015)

The results from this research will help to assess CO2 and energy consumption in Lincoln and find a way to reduce the City's contribution towards climate change.

6.2 Outline phase 3

Evidence suggests that current levels of public awareness in the UK in relation to energy and climate change is still quite low, as demonstrated by regular representative sampling of public attitudes to the environment (e.g. DEFRA, 2001). These surveys indicate that very few people tend to link the issue of climate change with their own domestic consumption of fossil fuels for heat, power and lighting. In 1996/7 awareness stood at 12% of the national sample and in 2000, this had only risen to 19%. This level of awareness must rise further for a meaningful public debate to occur.

Research studies in the UK and other parts of the world have also indicated that the causes of climate change are often confused with those involved with other environmental problems, notably ozone depletion. Collectively, the body of available research evidence suggests that current levels of awareness are low, that misperceptions and confusions are common and that efforts are required to promote better public understanding and concerted action.

Therefore as part of the consultation a survey will be sent out to the 1000 strong City of Lincoln citizen panel to find out to what Lincoln residents know about climate change. This will enable the City Council to assess how and where we should target awareness raising initiatives.

Consultation will also be extended to the following :

- Local businesses;
- Voluntary sector;
- Government organisations (i.e. Environment Agency, Drainage Board);
- West Lincolnshire Primary Care Trust.

This will be achieved through working with the Local Strategic Partnership.

Appendices

Appendix 1

Glossary of Acronyms

CHP	Combined Heat and Power
CCL	Climate change levy
CCP	Councils for Climate Protection
CH ₄	Methane
CO ₂	Carbon dioxide
CT	The Carbon Trust

DEFRA	Department of Environment, Food and Rural Affairs
DTI	Department of Trade & Industry
DTLR	Department of Transport, Local Government and the Regions
EA	Environment Agency
Econ. Sust	Economic Sustainability
Env. Sust	Environmental Sustainability
EESoP	Energy Efficiency Standards of Performance Programme
EEACs	Energy Efficiency Advisory Centres
EST	Energy Saving Trust
GDP	Gross Domestic Product
GHG	Greenhouse gas
H ₂ O	Water Vapour
HECA	Home Energy Conservation Act
IDeA	Improvement and Development Agency
LA	Local Authority
N ₂ O	Nitrous Oxide
NGO	Non-governmental Organisation
O ₃	Ozone
SDC	Sustainable Development Commission
SME	Small- and Medium-Sized Enterprise
SSSI	Sites of Special Scientific Interest