REPORT TO: **POLICY AND RESOURCES COMMITTEE - 14 APRIL 2008**

REPORT ON: **CLIMATE CHANGE FRAMEWORK AND ACTION PLAN**

REPORT BY: **ASSISTANT CHIEF EXECUTIVE (COMMUNITY PLANNING)**

REPORT NO: **219-2008**

1. PURPOSE

To propose a strategic framework and action plan for the Council's response to climate change.

2. RECOMMENDATIONS

It is recommended that Committee:

i) agree the draft Climate Change Framework 2008-2015 and Action Plan 2008-2011 which is appended to this report

ii) instruct all departments to support the actions set out in the document and ensure that resources, where appropriate, are allocated to specific tasks

iii) remit the Assistant Chief Executive (Community Planning) to report back with an annual summary of the Council's climate change activities and to produce a detailed report on progress in 2011 along with a recommended action plan for the period 2011-2015

3. FINANCIAL IMPLICATIONS

Separate reports will be produced for any aspect of the framework and action plan for which costs cannot be contained within existing budgets. Additional funding from the Scottish Government will be required to achieve some of the aspirational objectives of the long-term strategy.

4. BACKGROUND

4.1 The Council signed up to Scotland's Climate Change Declaration in January 2007 and, by doing so, committed itself to:

- Work with the Scottish Executive and the UK Government to contribute to the delivery of Scotland's and the UK's Climate Change Programmes, including to reduce greenhouse gas emissions and to adapt to future climate change scenarios.

- Produce and publicly declare a plan, with targets and time-scales, to achieve a significant reduction in greenhouse gas emissions from our own operations. This will include our energy use and sourcing, travel and transportation, waste production and disposal, estate management, procurement of goods and services, and improved staff awareness.

- Ensure that greenhouse gas reduction and climate change adaptation measures are clearly incorporated into our new and existing strategies, plans and programmes, in line with sustainable development principles.

- Assess the risks and opportunities for our services and our communities of predicted climate change scenarios and impacts, and take action to adapt accordingly and in line with sustainable development principles.

- Encourage and work with others in our local community to take action to adapt to the impact of climate change, to reduce their own greenhouse gas emissions and to make public their commitment to action.

- Publish an annual statement on the monitoring and progress of our climate change response, detailing targets set, actions taken, outcomes achieved and further actions required.

- Collaborate with other organisations to promote good practice on climate change mitigation and adaptation.

4.2 A draft of the proposed climate change strategy is attached. This has been developed on the basis of a strategic framework for the period 2008-2015 and an initial action plan setting out key priorities for the period 2008-2011. The intention is to provide a detailed report on progress in 2011, along with a further action plan for the period 2011-2015, which will also take account of the latest policy developments and information on good practice from elsewhere. An annual summary of the Council's activities will also be produced, in line with the requirements of the Climate Change Declaration.

4.3 The attached document builds on a wide range of activities already underway as part of the Council's Sustainability Policy but links these together, along with some new initiatives, into a strategic framework with a specific focus on climate change. The framework includes a vision and targets; action to mitigate against climate change by reducing carbon emissions; plans for adaptation to the effects of climate change; and activities to raise awareness and encourage action by others. It also covers monitoring and reporting, and aims to mainstream consideration of climate change within the Council's decision-making processes. A number of priorities have been identified for the first action plan, including the development of a 'carbon audit' of the Council's activities; development of policies in key areas; incorporation of climate change objectives into major plans and strategies; initiatives to assess risks from climate change; and activities to raise awareness within the Council, with the public in general and with young people in particular.

5. POLICY IMPLICATIONS

5.1 This report has been screened for any policy implications in respect of sustainability, strategic environmental assessment, anti-poverty, equality impact assessment and risk management.

5.2 Through its complex nature, climate change influences every Sustainability Policy Principle, from forward planning of new buildings and infrastructure, alleviating flooding, maintaining air quality and reducing CO_2 emissions, to the management of green spaces, waste and environmental health. The Climate Change Framework and Action Plan will publicly demonstrate the Council's commitment to mitigating and adapting to the effects of climate change and contribute to improving our own environmental performance.

5.3 In accordance with Section 8(1) of the Environmental Assessment (Scotland) Act 2005, Dundee City Council has determined, in agreement with the Consultation Authorities, that the Climate Change Framework 2008-2015 and Action Plan 2008-2011 does not require a Strategic Environmental Assessment as set out in the Act. A copy of the determination notice was published on 10 December 2007 in the local press.

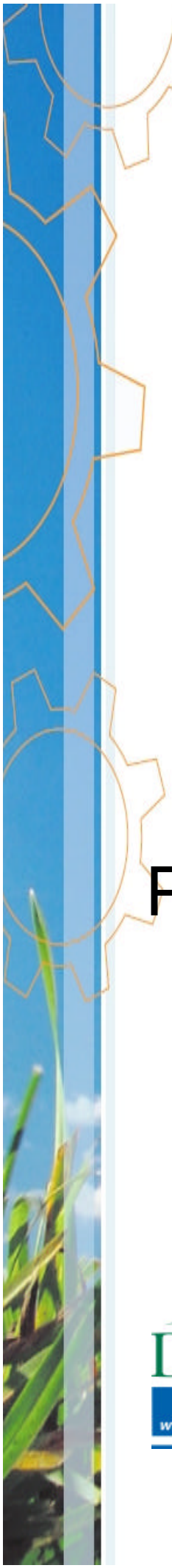
6. **CONSULTATION**

The Chief Executive, Depute Chief Executive (Support Services), Depute Chief Executive (Finance) and Head of Finance have been consulted, and the framework and action plan have been discussed by the Chief Officers' Management Team. Consultation has also taken place with Scottish Natural Heritage, Scottish Environment Protection Agency and Historic Scotland through the Strategic Environmental Assessment process.

7. **BACKGROUND PAPERS**

Report 546-2006 to Policy and Resources Committee on 16 October 2006: Scottish Climate Change Declaration

Chris Ward
Assistant Chief Executive (Community Planning)……. 04/04/2008



Dundee City Council

SUSTAINABLE DEVELOPMENT

DRAFT Climate Change Framework 2008 - 2015

and Action Plan 2008 - 2011

Dundee City Council www.dundeecity.gov.uk CHANGING FOR THE FUTURE

March 2008

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Acknowledgement

Dundee City Council acknowledges the assistance of Edinburgh City Council, whose climate change framework provided the basis for the first draft of this document.

1. INTRODUCTION

1.1 Why Climate Change is important

The environment sustains life and provides the platform for good health and wellbeing. Dundee has an outstanding environment and the City Council has a proud record in protecting this natural advantage. In the 1950s Dundee was the first UK city to go smokeless and it has for many years been Scotland's leading city for recycling.

According to the World Health Organisation, climate change is a significant global threat to public health. Change will not be evenly distributed around the world. The population of developing countries, particularly small island states, arid and high mountain zones and densely populated coastal areas, are considered to be particularly vulnerable.

While the potential impact on Dundee will not be as severe as the much more vulnerable areas described above, there is still a significant risk to Dundee's communities and economy. Concerted action is therefore required, not only to protect our city but to reduce the effects of global warming on more exposed populations elsewhere, which are often the least resourced and resilient.

Dundee City Council has joined with all other Scottish Local Authorities to sign Scotland's Climate Change Declaration, which is set out in Appendix 1. The Declaration commits the Council both to mitigate our effects on climate change and to adapt to the impacts of climate change.

1.2 The Council's Role

The Council has four broad roles on climate change:-

- as a user of resources and owner of facilities
- as a provider of services which will be affected by climate change
- as a body whose policies can effect change in others
- as a community leader which can encourage others to take action on climate change

This document sets out a strategic framework for the Council's response to climate change by:

- identifying broad principles and key areas for action to mitigate carbon emissions and adapt to the impact of climate change
- setting targets where possible to reduce carbon emissions
- working to identify the specific likely impacts on Dundee
- publishing an annual statement on progress

Through this strategy Dundee City Council aims to be an exemplar of good practice, demonstrating how local authorities as consumers of resources can make a difference on climate change. This will require collaboration with partners in the city where we have shared interests. As a community leader, the Council will encourage individuals and communities, including the business community, to play their role in tackling this global problem, and we will use our links with partner organisations to influence their development of climate change strategies.

2. THE IMPACT OF CLIMATE CHANGE

2.1 The Changing Climate

The scientific evidence for climate change is now beyond question, and the most recent report from the Intergovernmental Panel on Climate Change stated unequivocally that climate change is a consequence of greenhouse gas emissions from human activity. Dundee City Council accepts that climate change is happening and recognises the serious threats presented by our changing climate.

The 20th Century was the warmest in the past 1,000 years. Nine of the ten warmest years since 1861 occurred in the last two decades. The year 2006 was the hottest year recorded in the UK in the last 300 years. Globally, there is evidence that rainfall patterns are changing, sea levels are rising, glaciers are retreating and arctic sea-ice thinning, with the incidence of extreme weather increasing in parts of the world.

If climate change issues are ignored, global prospects are bleak - additional costs and human misery from increased storm damage and flooding; ecological impacts through habitat changes and loss of biodiversity; lost revenue and perhaps failure of businesses reliant on the climate such as agriculture, fisheries and tourism; and higher incidence of health problems.

2.2 Government Strategies

The Government's Energy White Paper in 2003 set a goal to put the UK on a path to cut CO_2 emissions by some 60% by about 2050, with real progress by 2020. In December 2005, the Government published its new Climate Change Strategy, which set out how the UK would achieve the Kyoto targets and the more ambitious White Paper targets. This was followed in March 2006 by the then Scottish Executive's Climate Change Strategy "Changing Our Ways". The UK strategy sets a target reduction of some 20.7million tonnes of carbon (MTC) across the UK. The Scottish "share" of this is estimated at 1.7 MTC (based on population). However the new Scottish strategy sets out a "Scottish target" of a reduction in carbon emissions of some 2.7 MTC by 2010, exceeding the Scottish share by 1 million MTC. By developing climate change strategies, local authorities can contribute to the Scottish share and assist both the UK and the Scottish Governments to achieve

their climate change objectives. In particular, we aim to help deliver the 'Greener Scotland' outcomes identified in the Scottish Budget Spending Review 2007.

Landmark legislation that sets out plans to tackle climate change for the next 50 years was published in Parliament in November 2007. The Climate Change Bill, the first of its kind in the world, sets out a framework that aims to put Britain on the path to become a low-carbon economy, with clear, legally binding targets to reduce carbon dioxide emissions by at least 60% by 2050, and 26% to 32% by 2020, against 1990 levels. These will be binding on future governments of all political colours, and monitored by an independent Climate Committee, according to five-year targets.

The Bill sets out a vision for how the UK can move to a low carbon economy including:

- investment in low-carbon fuels and technologies, such as carbon capture and storage, wind, wave and solar power
- significantly more efficient use of energy
- a step change in the way energy suppliers operate, so that they focus on reducing demand rather than just supplying as much energy as possible
- consumers becoming producers as well as consumers of energy

In Scotland, the Secretary for Finance and Sustainable Growth announced that the Scottish Government would consult on a Climate Change Bill for Scotland to set a mandatory target of cutting emissions by 80% by 2050. Consultation on the Bill will take place in early 2008 and the Scottish Government is exploring how it can best engage with the UK Bill.

2.3 **The Likely Impacts on Dundee**

Climate change scenarios provide information on likely future impacts by using sophisticated modelling of climate data. In 2002, the UK Climate Impacts Programme published climate change impacts for Scotland. The predicted impacts are:

- an overall increase in temperature with hotter summers and warmer winters
- increased rainfall in winter but less in summer
- increase in extreme climatic events such as storms and flash floods; and
- greater seasonal variation with more very hot days in summer and fewer very cold days in winter

The likely impact of these predicted changes for Dundee requires to be studied in detail so that adaptation measures can be planned. More recently, SEPA's 2006 report on the State of Scotland's Environment showed there is evidence of fundamental alterations to the key elements of Scotland's climate system as a result of mankind's activities. Climate change is evident in Scotland from observed

trends in temperature, rainfall and snow cover. It is causing changes in the growing, breeding and migration seasons, shifts in species abundance and diversity, higher river flows leading to increased flood risk and sea level rise causing erosion. Left unchecked, climate change will accelerate, causing damaging effects on physical, biological and chemical processes with significant consequences for Scotland's environment, economy and society.

2.4 **Impacts on Services**

The Council provides a wide range of services, including waste collection, environmental health and trading standards, scientific services, roads and environmental maintenance, and employs hundreds of staff whose focus is on protecting the city's environment in various ways. The Council is responsible for properties such as residential homes, libraries, schools, offices and community centres as well as having responsibility for planning and building control, transport policy and environmental monitoring of air and land. Possible adverse impacts, to which we will have to respond as a service provider or which affect our ability to provide services, include:

- Flood risk at greater frequencies and level of intensity
- Sewerage and drainage infrastructure not coping with higher rainfall
- Low river levels/high river levels - turbulent water flows
- Coastal flooding
- Health impacts such as heat stress, exacerbation of respiratory problems and increased risks of skin cancer and dehydration
- A higher incidence of pest control problems
- Biodiversity impacts - loss of species
- Natural environment - alteration of grass cutting/growing seasons
- Greater use of air conditioning, mechanical ventilation, cooling and refrigeration, consuming more energy and contributing further to climate change.
- Increased numbers of tourists due to warmer weather, which will impact on all services - transport, waste, energy, congestion and pollution etc
- Drier summers increase risk of road subsidence and higher temperatures increase risk of surface damage

2.5 **Impacts on climate change from the Council's services and activities**

The Council needs to ensure that its own services and activities do not exacerbate carbon emissions. For example, the redevelopment of the Central Waterfront and regeneration of areas throughout the city will result in new housing, retail and commercial developments. These developments, if not low-carbon, could result in considerable emissions of CO_2, exacerbating climate change at the local level.

The key challenge will be to decrease the city's carbon footprint while maintaining all the development opportunities that keep Dundee as a major city with an enviable

quality of life. The Council will need to develop a low carbon approach to all of its services and activities, so that they do not contribute to increasing carbon emissions.

2.6 The benefits of action on climate change

Councils can take practical steps to reduce greenhouse gas emissions and help their communities to adapt to future environmental conditions. Carrying out these actions will take time and resources, but the Council is committed to pursue these because of the benefits they will bring, including:

- **Financial Savings** - households, industry, businesses and the council itself will all save money by increasing energy efficiency and reducing waste
- **Improved air quality** - choosing the correct measures to reduce carbon emissions can also result in improved air quality and reduce the risks of exacerbating respiratory diseases
- **Reduced traffic congestion** - a community transport strategy that promotes public transport, cycling, low emission vehicles, car sharing, and walking initiatives will provide the community with less expensive, environmentally friendly means of transport, and improve mobility, safety, reliability of services, and the health of citizens
- **Job creation and local economic development** - new and innovative local renewable energy systems will provide reliable and affordable clean energy and new employment opportunities. The creation of new markets for renewable energy technologies, energy efficiency and sustainable public transport will stimulate the community's economy and help raise the council's profile both locally and internationally.
- **Enhanced community liveability** - the combination of all the benefits resulting from activities that reduce greenhouse gas emissions and improve air quality will be translated into more environmentally friendly and habitable communities.

2.7 What are we doing now?

The Council has already undertaken activities as part of sustainable development efforts which will reduce carbon emissions and help us adapt to likely impacts. Examples include:

- Audit of internal waste management in 2004 led to an action plan, collection systems and training of Waste Aware Champions in each Department and has led to a fundamental change in the way the Council manages its waste.
- The main target of the Council's Energy Policy - to reduce energy consumption by 10% over the period from January 2002 to December 2007 - has been exceeded, with overall energy consumption reduced by approximately 13%. This has resulted in a reduction of 4100 tonnes of CO_2 emissions over the period.

- Air Quality Management Area declared and an action plan in preparation to improve air quality and reduce emissions.
- Architectural Services Division retains its ISO:14001 accreditation - an international standard for environmental management.
- All Dundee schools registered for the Eco-School programme.
- In May 2005 Dundee was awarded £500k from the "Woodlands in and around Towns" (WIAT) Forestry Commission Challenge Fund to protect and enhance the city's woodlands
- Sustain Dundee Red Squirrel Project continues to protect the city's population of red squirrels - a UK Biodiversity Action Plan species that is among Britain's most threatened mammals.
- Dundee Energy Efficiency Advice Project provides advice to householders, schools and community groups on measures to increase energy efficiency and reduce expenditure on fuel consumption - especially for 'fuel poor' households.
- Dundee Sun City continues to promote sustainable energy use in the city, especially solar power is working to kick start projects, increase public awareness and develop a local installer base for renewables.
- Sustainable Urban Drainage Systems (SUDs) installed in new developments where appropriate to reduce the potential of flooding and help to protect and enhance ground water quality.
- Introduction of a waste-to-energy plant which has reduced the amount of waste going to landfill
- Two-thirds of streetlighting in the city's residential areas have been changed to more efficient white lighting
- Good progress has been made in the use of recycled materials in construction projects
- In the 12 years since the introduction of HECA (Home Energy Conservation Act, 1995) the council has succeeded in effecting reductions of 25.1% in energy use and 27.46% in CO_2 emissions across domestic stock in the city

Ongoing activity has not, until now, been brought together in a single strategy framework with a principal aim to reduce carbon emissions.

3. VISION AND TARGETS

3.1 Vision

Dundee City Council recognises the very serious implications of climate change on the development, environment and wellbeing of Dundee. The Council is committed to taking a lead in addressing the causes and impacts of climate change for the

benefit of present and future citizens of Dundee and further afield. The Council will tackle climate change by reducing carbon dioxide emissions in its own activities and adapting its services to the impacts of climate change. In particular Dundee City Council wants Dundee to be:

- a city where all people have access to appropriate and affordable energy
- a city which meets its energy needs in a sustainable way that both mitigates and adapts to climate change
- a city which uses and manages its energy in an efficient way for its own operations as well as in residential, commercial, industrial and other sectors of the city
- a city with sustainable transport systems which promote the use of alternative fuels
- a city where energy supports economic competitiveness and increases employment opportunities
- a city that utilises or disposes of its waste in accordance with the best practicable environmental option

3.2 **Targets**

In order to identify realistic local targets, it will be necessary to establish 'baseline' data on carbon emissions from Council activities. A carbon audit of service activities requires to be carried out to assess the Council's current carbon footprint and identify initiatives which can lead to reductions. This should also involve a study of best practice by leading local authorities in this field. However, as an interim target, the Council will aim to use its position as a major resource-user and service-provider, and as a community leader influencing others, to ensure that the city of Dundee contributes its share to the Scotland-wide reduction in carbon emissions. The Scottish Government's target equates to an annual reduction of around 2.7million tonnes of carbon by 2010. Based on Dundee's share of the Scottish population, the city's target saving would be around 75,600 tonnes - equivalent to each person in Dundee saving almost half a tonne of carbon by 2010.

4 MONITORING AND REPORTING

This framework covers the period 2008-2015, and sets out the Council's general strategic direction and a range of potential actions to be pursued over the next seven years. The framework will act as a reference source for detailed action plans addressing current priorities. The first of these will cover the period 2008-2011 and is set out in section 9 below.

Summary annual reports will be produced as required by Scotland's Climate Change Declaration and included in the Council's Sustainable Development Progress Reports to Committee. A detailed progress report will be submitted to the Council in 2011 with a new action plan attached.

5. MITIGATION AND ADAPTATION

5.1 Mitigation

Mitigation is about what we can do to stop climate change getting worse. Our key mitigation aim is to reduce carbon emissions. This framework is aimed primarily at the Council's own services and, in particular, identifying those initiatives where carbon emissions can be reduced. However, there are a number of areas where partnership working with other public agencies, businesses, academic bodies, the voluntary sector and other organisations is required. In addition, it is important for the issue of climate change to be integrated into the Council's decision making processes. Partnership and corporate issues are covered in section 7 below.

5.2 Adaptation

No matter how good our efforts are in mitigating climate change, some impacts have already happened and their effects will be unavoidable. Much of the change in climate over the next 30-40 years is already determined by past and present emissions, so it is essential that services, assets and infrastructure are designed to adapt. Adaptation is therefore essential to cope with the changes already underway and in the near future which we cannot now avoid, while mitigation will limit the extent of the climate change over time.

Adaptation is a crucial element of a climate change framework and will have implications across the full range of Council services. Appendix 2 provides examples of Council services and suggests the impacts on services which may be anticipated. As mentioned earlier, the likely impact of the predicted climate changes for Dundee requires to be studied in detail so that adaptation measures can be planned, but this framework proposes the following activities:

- provide evidence of planning and adapting to a changing climate
- undertake risk assessments of the impacts of climate change on Council services and infrastructure and prepare adaptation responses
- develop networks for sharing information on adaptation
- ensure up to date climate impact assessments and scenarios for Dundee

5.3 Areas for Mitigation and Adaptation Activity

The Council aims to mitigate and adapt to climate change through 11 key areas of activity which relate to specific Council services or responsibilities. For each area of activity, a specific objective is proposed and a set of future actions is identified, to be addressed over the life of the framework document (2008-2015). A number of these actions have been selected for priority action in the first Action Plan (2008-2011).

5.3.1 Air Quality

Objective
• Ensure that actions taken to reduce greenhouse gases do not have an adverse impact on air quality and vice versa.

An integrated approach to air quality and greenhouse gases is required. Policies beneficial to both air quality and climate change need to be explored. Emissions from greenhouse gases and traditional air pollutants interact in the atmosphere and separately or jointly cause a variety of environmental impacts on the local, regional and global scales. Measures to reduce emissions of greenhouse gases are also likely to have other non-climate related effects on human health. Many strategies such as those encompassing enhanced energy efficiency may also have sizable air quality benefits, particularly reduced ill health and deaths from exposure to inhalable particles.

Future Actions

- Ensure actions plans for Air Quality Management Areas consider the impact on greenhouse gas emissions.
- Implement an action plan to achieve the objective included in the Council Plan 2007-2011 to improve air quality at those sites exceeding the National Air Quality Standard (annual mean) for nitrogen dioxide.
- Continue to assess carbon monoxide, benzene, lead, sulphur dioxide and 1,3-butadiene levels to identify any target levels that have been exceeded.
- Develop and implement mitigation measures for the above if required in accordance with the Local Air Quality Management Framework.
- Undertake further monitoring and assessment of PM_{10} to determine whether a further AQMA is required.

5.3.2 Biodiversity and the Natural Environment

Objective
• Take action to ensure that climate change impacts on biodiversity are mitigated and that opportunities to create carbon sinks are maximised.

It is inevitable that climate change is going to affect our natural environment, impacting on habitats and species with potentially far-reaching effects at different levels, from individuals to ecosystems. Certain species and ecosystems may be adversely affected by droughts and flooding. Interactions between species groups may be affected by average temperature rises e.g. timing of flowering and the hatching of insect pollinators may no longer co-incide, potentially affecting whole ecosystems. As the climate becomes wetter and warmer, some species may move north, so that the species mix suiting a warmer Dundee may change. Some

species moving north may be 'pest' species, adversely affecting local habitats and species, while some will increase the diversity of species found locally. It is crucial therefore that action is taken to manage the consequences on Dundee's existing biodiversity.

Future Actions

- Through the Tayside Biodiversity Partnership, support the implementation of practical action for priority species and habitats, in particular, those that support action to manage changing habitats and the resulting need for species protection.
- Ensure that future Tayside Biodiversity Action Plans considers the impacts of climate change.
- Develop an Urban Forestry Strategy that sets out a management framework for the protection and enhancement of the city's woodlands.
- Ensure that future Concordats with Scottish Natural Heritage, setting out a joint programme of action to promote the natural heritage of Dundee, consider the impacts of climate change.
- Improve communications about the impacts of climate change on biodiversity between researchers, resource managers and decision makers.
- Ensure Sustainable Urban Drainage Systems schemes in new developments create wetland habitats for native biodiversity.
- Use ecological principles to manage watercourses and floodplains and protect these from development which exacerbates climate change impacts by reducing the ability of the watercourse to flood naturally.
- Through the Council's Sustainable Development Guide for Construction, promote 'living roof' habitat solutions as part of new development, for both biodiversity gain and sustainability benefit.
- Consider the likely impact of climate change and sea level rises on coastal habitats and outline plans to manage impacts on habitats.

5.3.3 Economic Development

Objective
• Take action to ensure that economic development activity takes full account of both the challenges and potential opportunities of climate change

The Stern Review warns that climate change in the 21st century could bring on a global economic disaster, and concludes that it would cost less to take strong action against climate change than to react to changes as they unfold (5-20% of global GDP as against around 1% if tackled now). Climate change is global in its causes and consequences, and international collective action will be critical in driving an effective, efficient and equitable response on the scale required. However, there are actions we can take locally to respond to both the challenges and opportunities of climate change.

Future Actions

- Ensure that local economic strategies make reference to climate change.
- Ensure that the Council's Asset Management Plan specifically aims to reduce carbon emissions and sets energy benchmarks for all Council buildings.
- Work in partnership to commission a study into the economic potential of renewable energy technologies across Dundee.
- Work with business partners such as SET, the Tourist Board and the Chamber of Commerce, to evaluate any potential business or tourist opportunities for Dundee from climate change impacts.
- Improve the energy efficiency of commercial and industrial units rented out by the Council.

5.3.4 Energy

Objective
• Take action to ensure that energy and water is conserved and used efficiently across all Council services and activities. Investigate, and where feasible install renewable energy sources for Council properties.

Energy efficiency is a key element of the Climate Change Framework. Wasted or poorly managed energy provision can result in high CO_2 equivalent emissions, loss of money and damage to the environment. Energy is also used extensively in the construction and use of buildings, and in transport. Local authorities influence energy consumption and production through their purchasing policies and through the choice of fuels used.

Using energy more carefully will reduce CO_2 equivalent emissions and help to promote sustainable development benefiting public services, residents and businesses both economically and in terms of providing a more comfortable environment.

Future Actions

- Develop an Energy Action plan for all Council buildings which specifically aims to reduce carbon emissions.
- Review lighting strategies (including street lighting, traffic signals, bus shelters and floodlighting) to evaluate alternative low energy technologies.
- Promote white lighting as a means of energy saving where appropriate.
- Develop an appropriate metering system (including advanced metering technologies) to provide monitoring of electricity, gas and water usage. This will result in better understanding, which in turn will contribute to improved efficiency.

- Support partners to undertake an assessment of Dundee and the Tay estuary's potential for renewable energy generation.

5.3.5 Housing and Health

Objective
• Take action to ensure that housing strategies address the implications of climate change and, in particular, impacts on health

The construction of new housing developments has significant implications on climate change. Domestic energy consumption is significant and rising. In addition, development patterns can increase transport journeys, particularly those by private car.

While standards for energy efficiency in new homes are getting better, significant sections of the existing housing stock lack modern standards and this is the most difficult area to address. This can result in greater fuel poverty alongside other aspects of deprivation. Heating needs to be affordable to provide warmer, healthy and more comfortable homes for everyone. The construction of new homes also creates carbon emissions but these can be reduced by more sustainable forms of construction.

Future Actions

- Ensure plans are in place to achieve targets for the successor to HECA or to identify the barriers which exist to achieving them for the purposes of reporting this back to the Scottish Government
- Ensure that climate change is integrated into future housing development strategies
- Ensure that climate change adaptation is integrated into housing development
- Evaluate the implications of setting the highest standards of sustainable development utilising recognised standards such as Eco Homes to improve the energy efficiency performance of new and existing buildings and influence the behaviour of occupants
- Ensure all homes have an energy rating by 2015
- Work to ensure that all new housing developments meet Eco Homes excellent or equivalent by 2015
- Develop a climate change advice note for all residents in Dundee
- Evaluate methodologies and R&D into insulation in solid wall homes
- Identify the potential for community heating schemes and CHP
- Produce renewables energy guidance for residents

5.3.6 Planning

Objective
• Take action to ensure that the planning process acts to reduce carbon emissions and ensure adaptation to future climate change impacts

The planning system is a powerful tool to limit the negative effects of climate change. Planners have an important role in ensuring that new developments and the drafting of new strategic policies take account of climate change mitigation and adaptation.

Climate change is relevant to almost all aspects of land use planning. Scottish and UK national guidance is now emerging to provide useful advice for planning professionals. This also provides an overview of the current thinking and state of knowledge on the planning response to climate change.

Future Actions

- Promote the principles of Sustainable Development in development planning in line with Scottish Government best practice requirements.
- Promote the principles contained in the Sustainable Construction Guide into the planning application process where appropriate.
- Continue to assess air quality impacts of development and promote air quality as a material consideration as appropriate based on procedures contained in Dundee's 'Air Quality and Land Use Planning' planning advice.
- Continue to promote sustainable drainage through the planning application process.
- Continue to protect important trees and groups of trees through the TPO process.
- Promote land use that acts as a carbon sink
- Encourage the development and use of renewable energy
- Guide strategic development to locations protected from flooding, erosion, storms and subsidence
- Incorporate sustainable drainage measures and high standards of water efficiency in new and existing building stock

5.3.7 Procurement

Objective
• Take action to ensure that climate change considerations are taken into account in the procurement process

The Council can seek to reduce its own emissions, but if its suppliers do not follow sustainable practice aimed at carbon reduction, there will still be considerable impact in terms of greenhouse gases.

With the introduction of the Local Government in Scotland Act 2003, local authorities have a strengthened role in promoting sustainable development and responding to climate change. In addition, councils which implement an environmental management system can specify the environmental outcomes they seek from suppliers and contractors and have this data independently verified.

Future Actions

- Ensure that climate change has a stronger focus in procurement decisions
- Review the Council's Procurement Strategy to ensure this includes reference to climate change with a view to reducing CO_2 emissions associated with purchased goods and services
- Continue to procure "green energy" for all the Council's utility contracts
- Identify energy use as a criteria in purchasing decisions
- Ensure that when procuring Printing & Writing Paper applications, products contain at least 50% recycled content
- Ensure that when procuring Tissue Paper applications, products contain 100% recycled content.
- Ensure that major procurement contracts (e.g. the telephone contract) have climate change criteria incorporated
- Evaluate local sourcing of goods and supplies to reduce transport needs

5.3.8 Sustainable Design, Construction and Maintenance

Objective
• Take action to ensure that the design and construction of all Council projects take into account mitigation of carbon emissions and adaptation to impacts and to ensure that climate change is integrated into the Council's maintenance policies and programme

With the construction, occupation and maintenance of buildings being responsible for 50% of the UK's emissions of carbon dioxide, it is critical that buildings both minimise emissions and adapt to the predicted impacts of climate change. This

applies to the creation of new buildings and the refurbishment and redevelopment of existing ones.

The Council is involved in design and construction for offices, schools, care homes and leisure facilities. Design and construction schemes for roads and transportation are also frequently commissioned, including strategic projects such as the Central Waterfront. The Council is also responsible for ensuring that its property portfolio and other assets are maintained.

Future Actions

- Evaluate setting the highest standards of sustainability in its own developments to improve energy performance, including recognised standards such as BREEAM (British Research Establishment Environmental Assessment Methods)
- Ensure that external consultants and contractors involved in Council projects are aware of the Council's climate change targets and objectives
- Ensure that the construction of major infrastructure takes into account carbon mitigation and adaptation
- Ensure that contractors employ Waste Minimisation and Management Procedures on construction sites
- Ensure that planned and preventative maintenance programmes identify the potential for reducing energy
- Ensure that in construction applications over £1million, at least 10% of the value of materials used on a project is derived from recycled and reused content.

5.3.9 Transport

Objective
• Take action to ensure reductions in carbon emissions resulting from transport and adaptation to potential impacts of climate change

Transport is a key area in climate change mitigation and adaptation. Travelling more sustainably can include walking or cycling, using public transport instead of cars, forming or joining a car club, carbon offsetting our flights or buying lower emission cars.

Climate change also presents an important business risk to the transport sector. In particular, increased temperatures, flooding and storms can have serious detrimental impacts for transport, and design of transport systems will need to allow for expected future levels of these risks.

Future Actions

- Encourage TACTRAN Regional Transport Partnership to assist in meeting climate change targets
- Ensure future Local Transport Strategies assist in meeting climate change targets.
- Promote the use of low carbon vehicles and/or cleaner fuels.
- Promote sustainable transport through appropriate strategic land allocation decisions.
- Improve the fuel efficiency of Council Fleet vehicles.
- Ensure that all schools have School Travel Plans.
- Review the Council's Green Travel Plan to ensure that all Council vehicles and lease cars are low carbon.
- Investigate the use of biofuels selected on the basis of being the least damaging to the environment.
- Integrate carbon management into the travel planning process.
- Continue to encourage the development of city wide Green Travel Plans through the community planning process.

5.3.10 Waste

Objective
• Take action to ensure reductions in carbon emissions through sustainable waste management including waste prevention and recycling.

Landfill sites are one of the major sources of methane which, weight for weight, is 21 times more powerful than carbon dioxide as a greenhouse gas. Municipal waste contains readily biodegradable carbon-based organic matter such as kitchen and garden waste, paper and slowly biodegradable organic materials such as lignin (wood-like material). Some products such as plastics contain carbon derived from the fossil fuels which are used as a feedstock. The treatment and disposal of these wastes has a direct influence on the emissions of greenhouse gases. The 'waste hierarchy' lies at the heart of waste management both in terms of general sustainability and climate change. Waste reduction and particularly waste avoidance or prevention is at the top. Avoiding unnecessary waste reduces the demand for raw materials. This reduces emissions of carbon dioxide from fossil fuels and preserves carbon stocks in trees and it reduces transportation needs and associated fuel consumption and vehicle pollution. Waste prevention is therefore the most important aspect of waste management in terms of greenhouse gas reduction, and is where efforts should be focused.

Future Actions

- Further development of sustainable waste management techniques and in particular further emphasis of the waste hierarchy (Reduce, Reuse, Recycle, Recover and Dispose).
- Further work with neighbouring Councils to develop waste treatment infrastructure for residual waste from households and businesses.
- Enhance the schools waste collection by including additional recycling opportunities.
- Ensure linkages between the Eco-Schools programme, waste and climate change are further developed.
- Consider the use of waste derived fuels as an energy source for fleet vehicles.
- Adopt WRAP's Demolition protocol: Aggregates Resource Efficiency in Demolition and Construction.
- Implement the Council's Furniture Re-use Policy as part of the overall internal waste review.

5.3.11 Water

Objective
• Take action to ensure reductions in carbon emissions through sustainable water management including conservation.

The supply of water and treatment of waste water can be very energy intensive due to the amount of energy required by pumping stations and treatment works and the provision, operation and maintenance of the water infrastructure. Therefore the efficient use of water can help to reduce the impact on climate change and alleviate flooding.

Future Actions

- Adopt meter reading facilities (including remote advanced metering) matched to the complexity and strategic importance of each property. The objective is to detect leaks as early as possible and thereby ensure water is not being wasted.
- Include water recycling in all major developments
- Annual inspection of all watercourses to ensure no unauthorised work, including all river engineering work which falls under SEPA's Controlled Activities Regulations, is likely to exacerbate flooding.
- Limit the impact upon receptors through the requirement for Sustainable Urban Drainage Systems in new developments where appropriate.
- Ensure water, groundwater and floodplains are considered as critical receptors in the implementation of Contaminated Land Regime and remediation carried out through redevelopment.

6. AWARENESS-RAISING

Objective
• Take action to ensure that the causes and impacts of climate change are communicated within the Council and throughout Dundee. Work with young people in particular to raise awareness of climate change.

Climate change can seem a complex and highly technical issue. Even the experts have a range of views and opinions. It is essential therefore that information is provided which explains clearly the causes and impacts of climate change. This will be necessary both with the Council's own staff and external stakeholders. The biggest challenge is convincing all sectors of the community that they may have to change their behaviour if the Council is to meet its climate change targets and objectives. It is also essential that work is done with young people to raise their awareness as they will be the future generation which will have to live with the consequences.

A key area of action in terms of raising awareness will be to keep up to date with future climate change predictions for Dundee to ensure that policies and programmes are adapted or changed as required.

Future Actions

- Promote Scotland's Climate Change Declaration.
- Provide information through the Council's website with advice and guidance on how to reduce carbon emissions.
- Consider the development of a climate change campaign.
- Develop a climate change briefing programme for Council staff.
- Work with partners to deliver a programme for schools on climate change as part of the Eco-Schools Programme.
- Develop a programme of activity with Dundee Youth Voice and the Youth Parliament.

7. CORPORATE ISSUES AND PARTNERSHIP WORKING

7.1 Corporate Issues

Objective
• Take action to ensure that the corporate working and decision making activities of the Council respond to climate change both in terms of mitigation and adaptation.

It is not just specific thematic issues that have to be addressed as part of the climate change framework. How the Council takes decisions that affect its services and activities may have an impact on carbon emissions and adaptation to climate change. We need to ensure that climate change is integrated with our decision-making processes, and have identified best value and the capital programme as priority corporate activities. For both of these activities, a corporate mechanism will need to be developed which allows assessment of both potential carbon emissions and the impacts of climate change:

- Best Value
  Sustainable Development is now part of the Best Value process and is now audited under the requirements of the Local Government (Scotland) Act 2005. Best Value reviews offer real potential to ensure that climate change is integrated into the core of Council activity and that there is a regular mechanism for monitoring performance.

- Capital Programme
  The Council spends considerable sums on capital investment. Major infrastructure projects such as buildings or roads can contribute significantly to carbon emissions. It is also important to assess the potential impacts of climate change on these projects and ensure that future infrastructure can withstand these. In addition, since there are a number of external consultants and contractors employed on Council projects, it is essential that they adhere to the Council's climate change policies and targets and ensure that they assist the Council in meeting these objectives.

Future Actions

- Identify climate change as a key issue facing the authority in the updated Council Plan 2007-2011.
- Incorporate climate change commitments into the Council's Sustainable Development Framework.
- Develop specific Best Value Climate Change indicators.
- Give consideration to climate change as a cross cutting review.
- Ensure that climate change is considered as a material consideration in future capital projects.

- Draft a procedure for identifying the embodied energy and/or carbon content of future capital projects.
- Develop a mechanism for reviewing the performance of external consultants and contractors with respect to climate change policies and ensure that they understand the Council's targets and objectives.
- Develop guidance on climate change for Council departments, particularly on the weighting to be given to emissions reduction compared to capital cost.

7.2 **Partnership Working**

Objective
• Take action to ensure that, working in partnership, the Council proactively develops initiatives and programmes on climate change mitigation and adaptation.

The Council has a wide range of partners across the city involved in policy and project development. The Council's community planning partners include NHS Tayside, Tayside Police, Tayside Fire and Rescue, Communities Scotland and Scottish Enterprise Tayside along with the academic, private, voluntary and community sectors. The importance of a partnership approach in reducing the causes and responding to the impacts of climate change has been widely recognised. The Council will therefore use its partnership links to enable a wider awareness of climate change issues across the city. In addition, partnership working may lead to new initiatives to address climate change mitigation and adaptation.

Future Actions

- Ensure that climate change mitigation is a key objective within the next Community Plan for Dundee.
- Organise an event to identify the key climate change issues facing partners and promote good practice across Dundee.
- Produce a climate change advice note for community planning partners and ensure that relevant information is disseminated.
- Increase awareness and understanding of the potential impacts of climate change across Dundee, particularly with major development.
- Promote the inclusion of climate change mitigation and adaptation into the strategies and plans of partners.
- Establish a climate change champion in each Local Community Planning Partnership.
- Include Climate Change as a key theme for action within the Dundee Partnership for the Environment Strategy.

8. CARBON OFFSETTING

While mitigation measures can be taken to reduce the amount of carbon generated by the Council, there is always likely to be some carbon produced that cannot easily be mitigated. Carbon offsetting is a way of compensating for such excess emissions with equivalent carbon dioxide savings, and would need to be considered if the Council wishes to claim to be carbon-neutral.

The principle behind carbon offsetting is that the carbon emissions generated through an activity are calculated. Investment is then made in a suitable initiative that reduces carbon dioxide in the atmosphere by an equivalent amount. Initiatives that can generate carbon offsets include energy efficiency projects (e.g. installing energy saving technologies in housing developments), renewable energy schemes (e.g. wind farms) or tree-planting schemes that can take carbon dioxide out of the atmosphere. Often these schemes are in developing countries.

The Council's view is that carbon offsetting may form part of its climate change response provided that strictly accredited schemes are used. However it will not be a key aim of its work on climate change and will not be actively pursued at present at the expense of the priorities of reducing carbon emissions and adapting to the impacts of climate change.

Potential initiatives

- Monitor the involvement of other local authorities in carbon offsetting schemes.
- Investigate the potential for carbon offsetting schemes if no opportunities are available to either avoid or reduce adverse effects.
- Re-emphasise the staff travel hierarchy with respect to flights.
- Monitor the number of official flights per year undertaken by staff and set a target for reduction.
- Investigate a financial model for offsetting carbon from official flights.
- Investigate the potential of developing new tree planting schemes to "sink" more green house gases in all future development, derelict land, parks and gardens.

9. ACTION PLAN 2008-2011

The plan below sets out the key priorities for the Council over the period April 2008 to March 2011.

The actions are categorised under three main headings - mitigation, adaptation and awareness raising.

1.	**MITIGATION**			
	Action	**Task**	**Lead Officer**	**By When**
1.1	Develop a baseline inventory of greenhouse gases generated by Council activity, with a view to identifying realistic targets and monitoring progress.	• Carry out scoping exercise to identify emissions arising from Council operations:		
		- Analyse information from STARK system on usage of fuels for Council buildings.	Alex Gibson, Ec. Dev.	Oct 2008
		- Collate information from Housing's HECA reports on energy use and carbon emissions in individual dwellings.	Heather McQuillan, Housing	Oct 2008
		- Collate information on:		
		Street lighting	Lindsay McGregor, P&T	Oct 2008
		Fleet mileage	Ken Laing, Contract Services/ Jim Laing, Waste Management	Oct 2008
		Non-fleet mileage	Graeme McKenzie, Finance	Oct 2008
		Waste	Stewart Ball, Waste Management	Oct 2008
		• Baseline established • Information disseminated to departments • Updating of baseline	Bill Findlay, Corporate Planning/ Bryan Harris, Waste Management	Dec 2008 Mar 2009 Oct 2009
1.2	Ensure that specific mitigation actions under each of the 11 thematic areas are selected and developed further as a priority.			
	1.2.1 Air quality	• Following the declaration of the Air Quality Management Area (AQMA), undertake assessments and consultation with stakeholders to produce and implement an appropriate corporate action plan to address high Nitrogen Dioxide (NO_2) levels.	Rachel Brooks/ Jacqueline Baird, EHTS	Ongoing - 2011

		• Continue to assess carbon monoxide, benzene, lead, sulphur dioxide and 1,3-butadiene levels to identify any target levels that have been exceeded, which may dictate the need for a Detailed Assessment.	Rachel Brooks/ Jacqueline Baird, EHTS	Ongoing - 2011
		• Undertake further monitoring and assessment of PM_{10} to determine whether a further AQMA is required.	Rachel Brooks/ Jacqueline Baird, EHTS	Ongoing - 2011
1.2.2	Biodiversity and the natural environment	• Through the Tayside Biodiversity Partnership, support the implementation of practical action for priority species and habitats, in particular, those that support action to manage changing habitats and the resulting need for species protection.	Bryan Harris/ Alison Anderson, Waste Management	Ongoing - Sept 2010
		• Ensure that future Tayside Biodiversity Action Plans considers the impacts of climate change.	Bryan Harris/ Alison Anderson, Waste Management	Ongoing - Sept2010
		• Develop an Urban Forestry Strategy to ensure effective woodland management including essential silvicultural maintenance, conversion of plantations into high amenity woods and improvements to the value of the woods as wildlife habitats.	Ian Whitehead, Leisure & Communities	March 2009
		• Ensure that future Concordats with Scottish Natural Heritage to set out a joint programme of action to promote the natural heritage of Dundee considers the impacts of climate change.	Bryan Harris/ Alison Anderson, Waste Management	Annually - 2011
		• Ensure Sustainable Urban Drainage Systems schemes in new developments create wetland habitats for native biodiversity.	Graham Storrie, Planning & Transportation	Ongoing - 2011
		• Through the Council's Sustainable Development Guide for Construction, promote 'living roof' habitat solutions as part of new development, for both biodiversity gain and sustainability benefit.	Stuart Brown, Architectural Services	Ongoing 2011

1.2.3 Economic development	• Ensure that the Council's Asset Management Plan specifically aims to reduce carbon emissions and sets energy benchmarks for all Council buildings.	Alex Gibson, Ec Dev	Apr 2008
1.2.4 Energy	Inform the Asset Management Plan by:		
	• Identifying worst performing buildings and developing action plan	Alex Gibson, Ec Dev	Dec 2008
	• Developing template to identify and eliminate areas of wasted energy.	Alex Gibson, Ec Dev	Apr 2008
	• Monitor guidance from UK and within Scottish Government on renewable/alternative energy sources.	Alex Gibson, Ec Dev	Ongoing - 2011
	• Review streetlighting strategies to evaluate low energy alternatives	Lindsay McGregor, Planning and Transportation	Mar 2009
	• Evaluate white lighting as a means of energy saving	Lindsay McGregor, Planning and Transportation	Oct 2008
1.2.5 Housing and health	• Ensure compliance with energy conservation legislation and home energy ratings in Scottish Housing Quality Standard.	Heather McQuillan, Housing	Ongoing - 2011
	• Achieve 'excellent' rating under the ECO Homes Assessment for Council new-build housing	Rob Pedersen, Architectural Services	Ongoing - 2011
1.2.6 Planning	• Promote the principles of Sustainable Development in development planning in line with Scottish Government best practice requirements	Iain Ross, Planning & Transportation	Ongoing - 2011
	• Promote the principles contained in the Sustainable Construction Guide into the planning application process where appropriate	Iain Ross, Planning & Transportation	Ongoing - 2011
	• Promote air quality as a material consideration as appropriate based on procedures contained in Dundee's 'Air Quality and Land Use Planning' planning advice	Iain Ross, Planning & Transportation	Ongoing - 2011

		• Continue to promote sustainable drainage through the planning application process	Iain Ross, Planning & Transportation	Ongoing - 2011
		• Continue to protect important trees and groups of trees through the TPO process.	Iain Ross, Planning & Transportation	Ongoing - 2011
1.2.7	Procurement	• As a partner in the Tayside Procurement Consortium, endeavour to procure goods and services, taking into account the environmental impact of all purchases and the whole life cost of the commodity.	Bill Reid, IT	Ongoing - 2011
		• Encourage suppliers to minimise any adverse environmental effects of their activities in providing goods and services to the Council	Bill Reid, IT	Ongoing - 2011
		• Meet the following Scottish Government targets to: a) Ensure that when procuring Printing & Writing Paper applications, products contain at least 50% recycled content b) Ensure that when procuring Tissue Paper applications, products contain 100% recycled content.	Brian Rose, Finance	Ongoing - 2011
1.2.8	Sustainable design, construction and maintenance	• Retain ISO:14001 accreditation for the Architectural Services Division to demonstrate commitment to this internationally accepted specification for environmental management.	Rob Pedersen, Architectural Services	Ongoing - 2011
		• Achieve IS0:14001 accreditation for the City Engineers Division	Fergus Wilson, City Engineers	Mar 2009
		• Meet the Scottish Government target for Construction applications over £1million - at least 10% of the value of materials used on a building project should derive from recycled and reused content.	Rob Pedersen, Architectural Services	Mar 2009
		• Meet the Scottish Government	Fergus Wilson, City	Mar 2009

	target for Construction applications over £1million - at least 10% of the value of materials used on an engineering project should derive from recycled and reused content	Engineers	
	• Raise awareness and promote the Dundee Sustainable Development Guide for Construction amongst private sector developers.	Stuart Brown, Architectural Services	Ongoing - 2011
	• Continue to take a leading role in the Scottish Sustainable Construction Forum to promote carbon reduction measures in the building industry.	Rob Pedersen, Architectural Services	Ongoing - 2011
	• Participate in the Safer Cities project	Rob Pedersen, Architectural Services	Ongoing - 2011
	• Develop the Dundee Sun City Demonstration House to raise awareness of methods of achieving energy efficient and renewable energy systems.	Rob Pedersen, Architectural Services	Apr 2008
	• All new-build projects of significance aspire to 'Very Good' BREEAM rating.	Rob Pedersen, Architectural Services	Ongoing - 2011
1.2.9 Transport	• Promote sustainable transport through appropriate strategic land allocation decisions.	Iain Jack, Planning & Transportation	Ongoing - 2011
1.2.10 Waste	• Re-use and recycle 75% of building material waste being generated for Council Architectural Services projects, both on-site and off-site.	Rob Pedersen, Architectural Services	Ongoing - 2011
	• Encourage re-use and recycling of construction waste	Fergus Wilson, P&T, City Engineers	Ongoing - 2011
	• Specify recycling targets and minimum requirements within all building contracts	Rob Pedersen, Architectural Services	
	• Specify recycling targets and minimum requirements within all engineering contracts.	Fergus Wilson, City Engineers	Oct 2008

	• Adopt WRAPS Demolition Protocol as appropriate	Jim Peters, City Engineers	Oct 2008
	• Implement the Council's Furniture Re-use Policy as part of the overall internal waste review.	Stewart Ball, Waste Management	Ongoing - 2011
	• Enhance the schools waste collection by including additional recycling opportunities.	Stewart Ball, Waste Management	Ongoing - 2011
	• Take a proactive approach in preventing waste arising in Dundee through the development and implementation of a local waste prevention action plan.	Stewart Ball, Waste Management	Mar 2009
1.2.11 Water	• Limit the impact upon receptors through the requirement for Sustainable Urban Drainage Systems in new developments where appropriate.	Graham Storrie, Planning & Transportation	Ongoing - 2011
	• Annual inspection of all watercourses to ensure no unauthorised work including all river engineering work which falls under SEPA's Controlled Activities Regulations, is likely to exacerbate flooding.	Graham Storrie, Planning & Transportation	Ongoing - 2011
	• Ensure water, groundwater and floodplains are considered as critical receptors in the implementation of Contaminated Land Regime and remediation carried out through redevelopment.	Iris Coghill, EHTS	Ongoing - 2011
1.3 Ensure that climate change objectives are incorporated into key Council policy areas.	• Identify climate change as a key issue facing the authority in the updated Council Plan 2007-2011.	Paul Carroll, Corporate Planning	Apr 2008
	• Incorporate climate change commitments into the Council's Sustainable Development Framework.	Bryan Harris, Waste Management	Apr 2008
	• Integrate statements on climate change into the Sustainable Development 'Self-Assessment Questionnaire' designed to	Bryan Harris, Waste Management	Annually in Sept each year - 2011

		achieve paths to improvement.		
1.4	Ensure that climate change objectives are integrated into the Council's capital programme.	• Issue guidance to departments, particularly on the weighting to be given to emissions reduction compared to capital cost for building projects • Issue guidance to departments, particularly on the weighting to be given to emissions reduction compared to capital cost for engineering projects	Rob Pedersen, Architectural Services Fergus Wilson, City Engineers	Apr 2009 Mar 2008
1.5	Ensure that climate change is a key objective for the Dundee Partnership.	• Include Climate Change as a key theme for action within the Dundee Partnership for the Environment Strategy. • Organise a Dundee Partnership event to identify the key climate change issues facing partners and promote good practice across Dundee.	Bryan Harris, Waste Management Peter Allan, Corporate Planning	May 2008 Sept 2008

2.	**ADAPTATION**			
	Action	**Task**	**Lead Officer**	**By When**
2.1	Examine in detail the likely impacts of climate change in Dundee	• Complete river and coastal flood studies and impact assessments. • Disseminate information to Council departments on climate change impact assessments.	Fergus Wilson, City Engineers Fergus Wilson, City Engineers	Mar 2009 Apr 2009
2.2	Incorporate climate change impacts into Council's Business Continuity Management Planning	• Take account of assessments above	Graeme McKenzie, Finance	Jul 2009

3.	**AWARENESS RAISING**			
	Action	**Task**	**Lead Officer**	**By When**
3.1	Raise awareness of climate change issues amongst departments.	• Promote Scotland's Climate Change Declaration within Council departments. • Provide staff with education and publicity materials on climate change issues and how they can reduce their emissions.	Bill Findlay, Corporate Planning/ Bryan Harris, Waste Management Bill Findlay, Corporate Planning/ Bryan Harris, Waste Management	Ongoing - 2011 2008-2011
3.2	Promote climate change issues amongst children and young people.	• Encourage and support Dundee schools in attaining Eco-Schools awards. • Work with partners to provide an educational resource pack for S5-S6 pupils to learn about the about the science and ethics of climate change, inviting them that will enable them to calculate their schools' carbon footprint and instigate and monitor changes.	Morag Cooney, Education Morag Cooney, Education	Ongoing - 2011 Ongoing - 2011
3.3	Inform the wider public about climate change issues.	• Publish an annual climate change statement as part of the Council's Sustainable Development Progress Report. • Develop a climate change webpage on the Council's website with information on how to reduce emissions.	Bryan Harris, Waste Management Bryan Harris, Waste Management	Annually in Sept each year - 2011 Dec 2008

APPENDIX 1

Scotland's Climate Change Declaration

We acknowledge that

- Climate change is occurring and human activities are having a significant negative and potentially dangerous influence.
- Climate change will have far reaching effects on Scotland's people and places, impacting on our economy, society and environment.
- There are significant social, economic and environmental benefits in taking action to combat and prepare for climate change.
- We all in Scotland have duties and responsibilities to take action to both mitigate and adapt to climate change, and to promote the sustainable development and well-being of our local communities.

We welcome the

- Scottish and UK Climate Change Programmes and targets for the reduction of greenhouse gas emissions.
- Opportunity for local government in particular and other agencies, businesses, voluntary and community organisations and individuals to show leadership at a local level to respond to climate change.
- Opportunity to address climate change by promoting the sustainable development of our local communities.

We commit *Dundee City Council*

from this date *16 January 2007*

Dundee City Council www.dundeecity.gov.uk CHANGING FOR THE FUTURE

to

- Work with the Scottish Executive and the UK Government to contribute to the delivery of Scotland's and the UK's Climate Change Programmes, including to reduce greenhouse gas emissions and to adapt to future climate change scenarios.
- Produce and publicly declare a plan, with targets and time-scales, to achieve a significant reduction in greenhouse gas emissions from our own operations. This will include our energy use and sourcing, travel and transportation, waste production and disposal, estate management, procurement of goods and services, and improved staff awareness.
- Ensure that greenhouse gas reduction and climate change adaptation measures are clearly incorporated into our new and existing strategies, plans and programmes, in line with sustainable development principles.
- Assess the risks and opportunities for our services and our communities of predicted climate change scenarios and impacts, and take action to adapt accordingly and in line with sustainable development principles.
- Encourage and work with others in our local community to take action to adapt to the impact of climate change, to reduce their own greenhouse gas emissions and to make public their commitment to action.
- Publish an annual statement on the monitoring and progress of our climate change response, detailing targets set, actions taken, outcomes achieved and further actions required.
- Collaborate with other organisations to promote good practice on climate change mitigation and adaptation.

We acknowledge the increasing impact that climate change will have on our community, Scotland and other countries during the 21st Century and commit to tackling the causes and effects of a changing climate within our local area.

Signatories

_____ Council Leader

_____ Chief Executive

Scottish Ministers welcome this declaration and will work in partnership with the signatories and their representatives to support the delivery of these commitments.

Minister for Environment and Rural Development

SCOTTISH EXECUTIVE

Minister for Finance and Public Service Reform

APPENDIX 2

CLIMATE CHANGE AND DUNDEE CITY COUNCIL: Possible Impacts for Departments

The table below sets out a range of different Council Departments and services and suggests the types of impacts that may be anticipated. The likely impact of climate change requires to be studied in detail so that adaptation measures can be planned, but the table also indicates adaptation responses.

Dept./Service	Potential Impacts	Possible adaptation responses
Planning		
Development Management and Planning	Higher risk of flooding/erosion of susceptible developments in floodplains or coastal margins	Ensure planning takes account of future trends in flooding and coastal erosion. Consider range of options for flood and coastal management, including promoting appropriate and sustainable defences (with the SEPA where appropriate) and locating new development away from areas of highest risk. Increase inspection and maintenance of existing assets.
Building Standards	Drier summers increase risk of foundation subsidence	Ensure that approved Building Warrants comply with the Building Regulations.
	Wetter winters and severe weather increase damp problems	Ensure that approved Building Warrants comply with the Building Regulations.
Emergency Planning	Increased risk of flooding and severe weather	Ensure emergency procedures, equipment and flood plans are updated to meet increased risk
Housing/Economic Development/Architectural Services/City Engineer's Division		
Housing	Increased risk of subsidence as soils shrink in hotter drier summers	Plan for preventative and remedial maintenance of existing stock
	Higher risk to houses in floodplains or coastal margins	Consider restricting development in the floodplains and coastal margins for new housing, and instigating a range of flood-proofing measures or sustainable defence measures for existing properties
	Temperature increases affect living space environment	Use thermal properties of materials to improve cooling and retrofit energy efficient air conditioning
Management of public buildings	Temperature increases affect thermal comfort	Retrofit or upgrade energy efficient heating and ventilation
	Wetter winters causing damp, condensation and mould problems	Upgrade weatherproofing systems and manage internal environment
	Higher risk to buildings currently located in floodplains or coastal areas	Consider flood-proofing measures or relocate
Building Design and Construction	Climate change influences future design (in response to above)	Rethink built environment design and revise practice to suit

Dept./Service	Potential Impacts	Possible adaptation responses
		Make use of thermal properties of materials to improve cooling
		Reduce solar heating using recessed windows, roof overhangs and shades
Business support	Climate change provides changing markets, e.g. tourism and agriculture, and demand for new products	Encourage business to adapt to new markets
Transport		
Transport Planning	Increased risk of flood disruption due to wetter winters and severe weather	Plan to flood-proof or re-site infrastructure and plan routes to minimise disruption
	Increased temperature causing service disruption and heat stress to travelling public	Avoid exposed places and provide shade or cooled waiting areas
Roads Maintenance	Increased rainfall intensity affecting embankments, culverts, bridges and retaining walls. More debris washed into gullies, culverts etc	Increase inspection, monitoring and maintenance
	Drier summers increase risk of road subsidence and higher temperatures increase risk of surface damage	Keep up to date with revised road structural design guidance. Implement remedial work for existing roads
	Higher risk to roads located in floodplains or coastal areas	Aim to flood-proof or re-site strategically important roads
	Increase in rate of growth and length of growing season of road verges	Use slower growing plants in landscape schemes. Revise mowing/weed control schedule
	Warmer winters with reduced risk of frost	Reduced need for road salting
Social Work and Environmental Health		
Health and Social Services	Higher risk of skin cancer / sun burn due to hotter summers and increased outdoor recreation	Consider ways to increase awareness of dangers of exposure. Provide more shade in public recreational areas

Council Dept.	Potential Impacts	Possible adaptation responses
	Heat stress to the old, poor and vulnerable communities and people likely to increase	Ensure adequate shade and cooling available.
Environmental Health	Higher temperatures likely to increase cases of food poisoning	Consider ways to increase awareness of food hygiene practices and revise best practice
	Higher levels of dust in the air due to drier summers	May need to hose down streets in urban areas, while ensuring responsible use of water resources, including using recycled water where possible.'
Leisure and Communities/Contract Services/Waste Management/City Engineers		
Greenspace Management	Increase in rate of growth leading to year-round grass maintenance	Adapt maintenance schedules and resources to meet change
	Loss of trees and shrubs due to drier summers and wetter winters	Plant trees and shrubs that will tolerate future conditions
	Climate change influence on natural environment	Plan for wildlife corridors to allow natural migration.
Watercourse Management	Wetter winters and increased rainfall intensity causing local flooding	Increase inspection/monitoring. Increase ditch clearing and gully emptying activities to obviate blockages
Waste Management	Rubbish will decay more rapidly in higher summer temperatures	Move towards greater containerisation of household and business waste. Improve public education on issues such as food waste prevention. Examine the collection frequencies for putrescible waste.
Community Awareness	Climate change will impact on communities	Proactively raise awareness, and provide advice and information.