



Watford Borough Council Climate Change Strategy and Action Plan

Final report to Watford Borough Council

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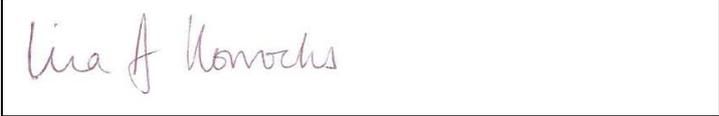
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Watford's Climate Change Strategy

"Only those who adapt to change survive"
Charles Darwin

Foreword from Mayor Dorothy Thornhill

Climate change is a global phenomenon and we can only successfully meet the challenge with the involvement and action of individuals as well as business and organisations such as local Councils. The importance of preparing for the changing climate as well as continuing to reduce the causes should not be underestimated as the potential impact on our way of life is vast.

Watford Borough Council is committed to leading and helping the community to respond and this strategy along with the Climate Change Policy formally adopted in 2009 sets out the ways in which we will do this.

Since 2003, when I signed the Nottingham Declaration on behalf of the Council, we have been working hard to reduce the Councils contribution to green house gases because these are the primary cause of climate change. The new Woodside and Central leisure centres are a great example of this with both being short listed in the Sustainable City Awards and the RICS East of England Awards for sustainable buildings as well as winning the Green Apple Award.

We continue to help householders to reduce energy bills as well as carbon emissions through subsidised insulation, heating and advice schemes. We have consistently been a top performer in our local area. In February 2011 Watford had the highest number of referrals to the Herts and Essex Energy Partnership (HEEP) out of the 15 authorities participating within the scheme. HEEP is also helping residents to successfully install renewable energy sources such as solar panels as well as replace old and inefficient boilers. Our bimonthly publication; About Watford which is sent to every home in the borough launched 'Eco made easy' in November 2010. This is a regular recurring article with helpful tips to reduce energy use and prepare for the changing climate as well as saving money.

Working with One Watford, the local strategic partnership, we regularly hold Green Business events, publish a monthly green ezine and run a Green Business Pledge. This work has progressed to working with Watford & West Herts Chamber of Commerce on a number of projects; these include a bicycle loan scheme and employing a green business facilitator who works with businesses to find ways to reduce carbon emissions including accessing funding.

We now need to develop local knowledge of the specific risks that will be created in Watford as a result of the changing weather patterns. This information will be used to develop an Action Plan and with input from partners and the community we will prioritise and address the risks to enable us to be sufficiently prepared to deal with the impacts. This includes addressing the risks posed by extreme weather events such as flash flooding as well as addressing the longer term impacts of a changing climate such as building design and changing flora and fauna. In order to do this we have already committed to reviewing and implementing best practice within key Council policies and we are now undertaking local research to identify particular sensitivities to the borough.

The Council has made commitments to:

- Act as a leader in tackling the causes of climate change and preparing for it's impacts, encouraging all sectors of the community to commit and take the opportunities presented;
- Address the causes of climate change systematically, by setting and meeting carbon dioxide emission reduction targets based on local priorities and to maximise benefit for our community;
- Continue to lead by example by reducing greenhouse gas emissions from Council operations and ensuring this is a key consideration in all relevant plans and strategies;
- Assess the risks associated with climate change for Council services and the wider community, enabling necessary adaptation to take place.

We understand that we can not meet this challenge alone; the Council requires the involvement and contribution of all sectors of the community. This is perhaps the real challenge for us at the present time. I am confident though that with the strong track record of effective partnership working in the borough we can develop a positive and practical Action Plan to meet the demands and contribute to delivery of a truly sustainable community.

Dorothy Thornhill
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Executive Summary

Watford Borough Council recognises that climate change has the potential to affect our way of life over the coming years and has therefore pledged to address the causes of climate change and to prepare the community for its impacts and any opportunities that may arise. This Climate Change Strategy and Action Plan provide the basis for action within the borough of Watford. This strategy builds on the Carbon Management Strategy and Climate Change Policy adopted by the Council and combines the need for an integrated approach to climate change which covers both adaptation and mitigation. The strategy and Action Plan recognises the need for community involvement and engagement as well as commitment and leadership from the Council.

The Council made a commitment to tackle the causes and effects of a changing climate when Mayor Dorothy Thornhill signed the Nottingham Declaration in 2003. The Carbon Management Strategy, adopted in 2007 with its Action Plan in 2008, was a demonstration of that commitment. The Carbon Management Strategy supported the delivery of two national indicators (185 and 186) which measured performance of reductions in carbon emissions across the borough and those resulting from the Councils own operations. The national indicators are no longer required by central government; however they are a useful reference point and will be referred to throughout this document. The data for NI186 was provided from central government and released with a two year time lag, therefore comparison year on year has only become possible in recent years due to the constantly changing methods and improvements in accuracy of the data. The Council will review the Carbon Management Strategy every two years and will implement interim changes should circumstances command the need for amended response level.

Now the Council has developed a broader Climate Change Strategy. Consideration has been given to the current level of preparedness to cope with climate change within the Council, as well as the measures in place to mitigate carbon emissions. The Strategy provides the foundations of an evidence base, a detailed Action Plan and incorporation of the Council's Carbon Management Strategy.

The implementation of the Strategy and Action Plan will require engagement and collaboration across the community and all service areas and levels within the Council to enable everyone to prepare for a changing climate.

The aims of the Climate Change Strategy and Action Plan are:

- To reduce the release of greenhouse gases into the atmosphere from activities within the borough,
- To prepare planned responses aimed at minimising the threats and maximising the opportunities of a changing climate within the borough.

The following objectives have been identified:

- To raise awareness of climate change within the Council and the borough more widely.
- To mitigate carbon emissions within the borough.
- To demonstrate leadership within the borough.
- To work in partnership with neighbouring authorities, regional agencies and partner organisations.
- To make the links between adaptation and mitigation action.
- To develop community resilience.

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1. Development of a Climate Change Strategy and Action Plan

Climate Change requires two complementary responses - mitigation and adaptation.

Mitigation is about avoiding the impacts of climate change by reducing greenhouse gas emissions or storing carbon. It is about reducing the scale of climate change in the longer term. However, no matter how successful we are at reducing emissions we still need to prepare for some climate change which is already built into the climate system by past emissions.



The Council is already working hard to help the community reduce emissions, for example through the promotion of energy efficiency measures such as boiler replacements

Adaptation is about adjusting to a new and changing environment. It involves making changes to behaviour or practice to take into account and adjust to the impacts of climate change, such as increased flood or drought risk.

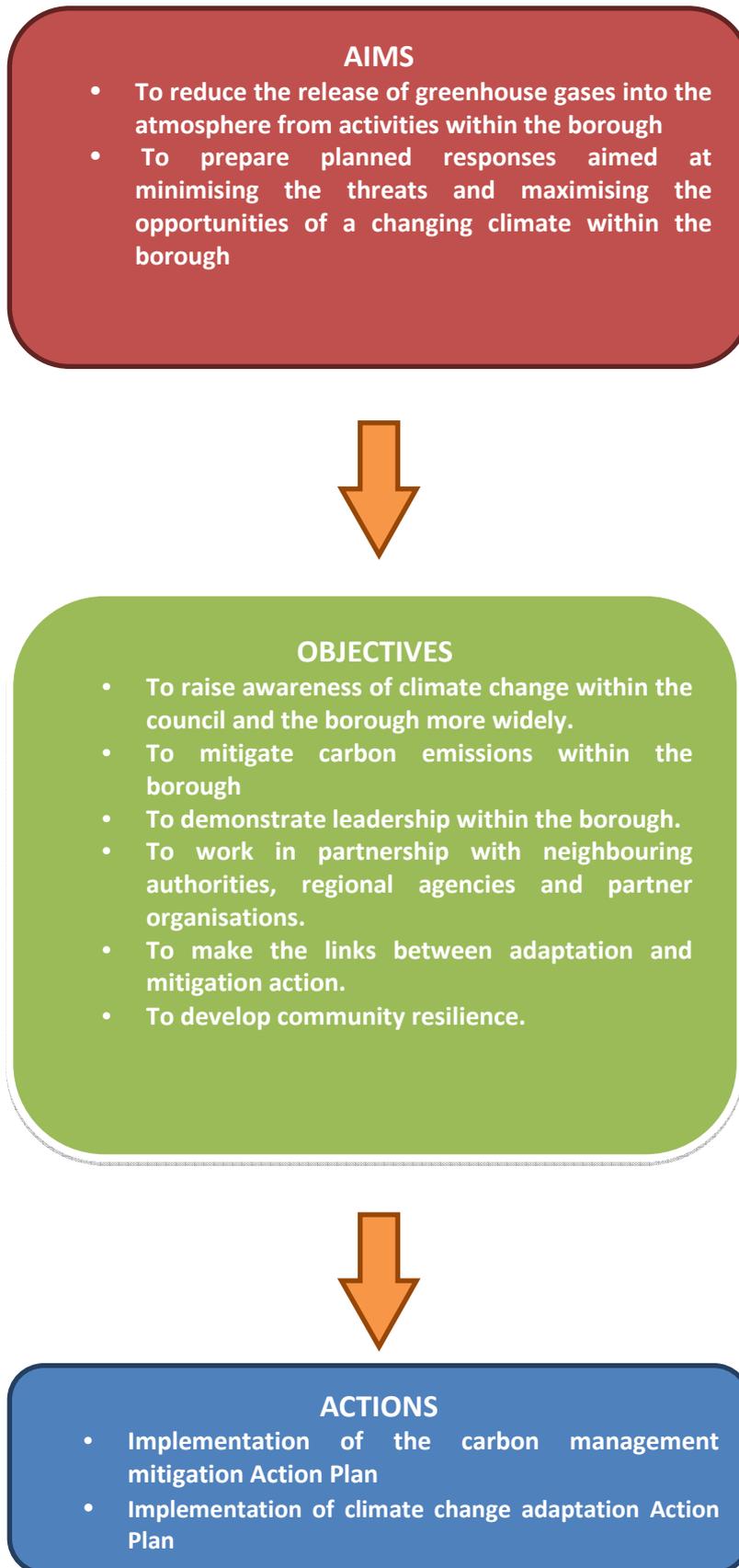
1.1 Structure

This Climate Change Strategy and Action Plan have been developed from:

- The Council's existing Carbon Management Strategy and associated Action Plan,
- A stock-take of how, and to what extent, Watford Borough Council is currently addressing the risks of climate change through an analysis of a number of key strategy and policy documents (appendix 5),
- Engagement and consultation with partner organisations, the Local Strategic Partnership (One Watford), residents and businesses across the borough.

The Strategy and Action Plan is structured around two key aims. To help achieve these aims we have identified six objectives. The Action Plan outlines how we intend, over the coming years, to achieve the objectives we have set for the borough. There is a technical appendix available as a separate document that provides our evidence base that has informed this Strategy and Action Plan.

Figure 1. Aims, Objectives and Actions



2. Climate Change – the imperative for action

There is increasing evidence to suggest that our climate is changing and will continue to change in the future with profound implications for our way of life. In the past few years there have been an increasing number of high profile weather-related impacts on communities within the UK, including: floods that have devastated homes, schools and businesses, heat waves that have affected people's health and well-being, and storm force winds. Climate projections suggest such events will become more frequent and severe in the future and we can expect hotter drier summers and warmer wetter winters across the UK leading to increased severity and frequency of events such as drought, flash flooding and heat waves. To start to understand the implications of climate change for Watford, and how best to respond, the first step is to explore in more detail the changes that might occur at a local level.

2.1 Climate Change Projections

The UK Climate Projections 2009 (UKCP09)¹ provide a plausible set of descriptions, based on certain assumptions, of how the climate of the UK might change during the 21st century. UKCP09 describes future climate change under three alternative futures, ranging from rapid economic growth with intensive use of fossil fuels (high emissions) to increased economic, social and environmental sustainability with cleaner energy technologies (low emissions). One scenario is no more likely to occur than another, although current emission trends provide an indication of which emissions pathway we may be following.

The aim of scenarios is to provide a range of possible futures that the decision-maker may wish to consider for those decisions that are 'climate sensitive'; in other words decisions must account for how long their effects will be felt as future climate will be very different to what we are currently used to.

The projections are available at a range of scales, ranging from national, to administrative regions (i.e. the East of England) and 25 x 25 km grid squares. The high emissions scenario suggests that by the 2050's in the East of England we could see a rise in mean summer temperature by 2.9°C from a 1990 baseline and increases in winter temperatures of 2.5°C. A mean increase in winter precipitation of 16% is also projected where as summer by 2050 is projected to see a mean decrease of 17% precipitation. It should be noted that these figures are mean projections so could be more severe on individual days. Sea level rise is projected to be 25.8 cm in London (UKCP09, high emissions 2050 data). The information is presented probabilistically which in this case means the relative degree to which each climate outcome is supported by current evidence, taking into account our understanding of climate science, observations and using expert judgement.

Findings from UKCP09 suggest that over time, Watford's climate may change considerably. Much of our planning assumes that our future climate will be much like that in the past; this assumption may no longer be valid and the Council, its partners and the borough must prepare for a potentially more challenging environment to live and work in.

Box 1: Trends in the UK's Climate

Temperature has risen by about a degree Celsius since the 1970s, with 2006 being the warmest year on record.

Annual mean precipitation has not changed significantly since records began in 1766. Seasonal rainfall is highly variable, but appears to have decreased in summer and increased in winter,

More of our rain in winter is falling during heavy rainfall events

¹<http://www.ukcip.org.uk>

Below are a series of storylines for how Watford's climate may develop in the 2020s (2010 to 2039), the 2050s (2040 to 2069) and the 2080s (2070 to 2099). While most of the Council's planning and political horizons fall within the 2020s, some decisions made today will have to take account of longer term changes in climate. To provide a comparison, we have also identified what Watford's climate is for a 'baseline' period commonly used when describing climate change.

Full details can be found in the accompanying technical appendix.

Watford's baseline climate (from 1961 to 1990)

Temperature

Watford has temperate annual summer and winter temperatures.

- **Annual average temperature** in Watford is **9 °C** .
- **Daily minimum temperatures in winter** are **1 °C** on average.
- **Daily maximum temperatures in summer** are **20 °C** on average.

Rainfall and snow

Watford's rainfall and snow is evenly distributed throughout the year.

- **Annual average rainfall** is **2 mm/day**.
- **Summer rainfall** is **2 mm/day** on average.
- **Winter rainfall or snow** is **2 mm/day** on average.

Watford in the 2020s

Temperature

Watford is getting warmer and is experiencing increasingly variable seasonal temperatures.

- **Change in mean annual average temperature** suggests that there will be **1 °C warming**, but warming **could be as much as 2 °C at the extreme** .
- **Summer mean daily maximum temperatures** show an **increase** by **2 °C**, but they could increase **reach 4 °C more at the extreme** .
- The temperature on the **warmest day** in **summer** is expected to **increase by 1 °C** , but it **may increase** by up to **5 °C at the extreme** .
- The temperature on the **warmest night** in **summer** is expected to **increase** by **1 °C**, but it **may increase** by up to **3 °C at the extreme**

Rainfall and snow

Watford in the 2020s has similar or slightly higher annual average rainfall or snow to that of the baseline, with increased variability in summer rainfall compare to winter rainfall or snow.

- **Rainfall on the wettest day in summer** may **decrease by 18 %**, with the potential to **increase by** as much as **32 % at the extreme**.
- Change in **annual average rain** or **snow** is **minimal** by the 2020s.
- Rainfall (or snow) on the **wettest day in winter** may **decrease by 7 %**, with the potential to **increase by** as much as **23 % at the extreme**.

Watford in the 2050s

Temperature

Watford is getting hotter and is experiencing significantly variable seasonal temperatures.

- **Change in mean annual average temperature** suggests that there will be **2 °C warming**, but warming **could be as much as 4 °C at the extreme**.
- **Summer** mean daily **maximum temperatures** show an **increase of 3 °C**, but they could **increase by 7 °C at the extreme**.
- The temperature on the **warmest day in summer** is expected to **increase by 3 °C**, but may increase by up to **9 °C at the extreme**.
- The temperature of the **warmest night in summer** is expected to **increase by 2 °C**, but may increase by up to **5 °C at the extreme**.

Rainfall and snow

Patterns of precipitation are starting to change by the 2050s. Watford has similar annual average rainfall or snow to that of the baseline, with increasing variability in summer rainfall and much more rainfall or snow in winter.

- **Rainfall on the wettest day in summer** may **decline** by 25 %, with the potential to **increase by 36 % at the extreme**.
- Change in **annual average rainfall** or **snow** is **minimal change** by the 2050s.
- **Rainfall** (or snow) on the **wettest day in winter** may **decrease by 1 %**, with the potential to **increase by 36 % at the extreme**.

Watford in the 2080s

Temperature

Watford is getting extremely hot, especially in summer.

- **Change in mean annual average temperature** suggests that there will be **3 °C warming**, but this warming could be as much as **6 °C at the extreme**.
- **Summer** mean daily **maximum temperatures** show an **increase of 4 °C**, but they could **increase by 11 °C at the extreme**.

- The temperature on the **warmest day in summer** is expected to **increase by 3 °C** , but may increase by up to **13 °C at the extreme** .
- The temperature of the **warmest night in summer** also is expected to **increase by 2 °C** , but may increase by up to **8 °C at the extreme** .

Rainfall and snow

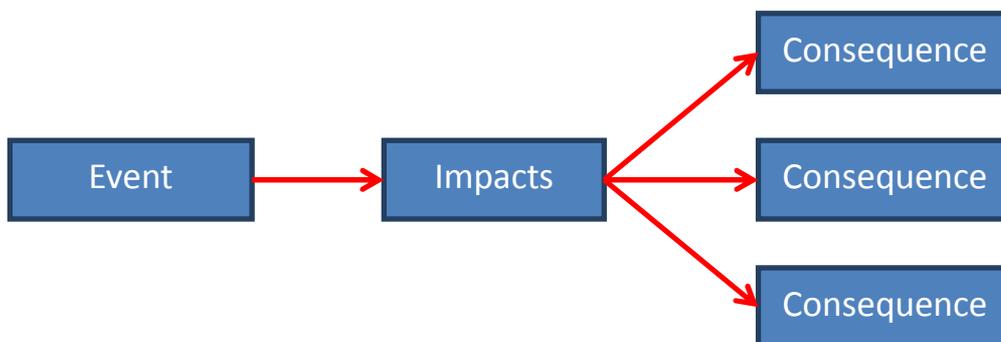
Patterns of precipitation are changing dramatically by the 2080s, showing much wetter winters and drier summers. Watford has similar or greater annual average rainfall or snow compared to the baseline, with major variability in summer and a substantial increase in winter rainfall or snow.

- **Rainfall on the wettest day in summer** may decline by 20 % , with the potential to **increase by 45 % at the extreme**.
- Change in **annual average rainfall** or **snow** is **minimal** by the 2080s.
- **Rainfall** (or snow) on the **wettest day in winter** may **increase by 2 %** , with the potential to **increase by 58 % at the extreme**.

2.2 What do these changes means?

Climate is the average weather in a particular area over an extended period of time and is usually measured by thirty year periods. Weather is what happens day-to-day and what occurs on a particular day can have a very direct positive or negative effect on our lives (e.g. see box 2). This can be understood in terms of a particular event (e.g. heavy rainfall), an impact (e.g. drainage system being overwhelmed) leading to consequences that can be positive or negative for the community (e.g. road or houses flooding, damage to property, less winter heating etc.); see Figure 2.

Figure 2: Events, impacts and consequences



UKCP09 suggests that severe weather events (such as very high temperatures or very heavy periods of rainfall) will occur more frequently and with greater severity in the future relative to conditions we are familiar with and considered to be ‘normal’. This in turn will lead to more impacts. Table 8 in appendix 4 and table 2 below provide an indication of what some of these impacts might be for Watford.²

These impacts could affect everyone in Watford, therefore it is imperative that the community led by Watford Borough Council acts to address climate change. This means addressing the cause of climate change by reducing carbon emissions and addressing the

² The nature of specific projected impacts (such as temperature range) vary depending on the emissions scenario selected. See appendix 4

potential impacts of climate change through adaptation. Everyone in the community, from statutory undertakers, government agencies, to the Council and individual households will be called upon to contribute to reducing the risks associated with climate change and where possible take advantage of opportunities that climate change brings.

Box 2: The impact of flooding in Watford, February 2009.

Heavy rainfall led to localised flash flooding across Watford. This caused difficulty accessing road networks, damage to roads, changes in use of facilities and a reduction in water quality. This led to increased work for emergency services, sand bags need to be distributed, rivers overflow and decreased business activity.

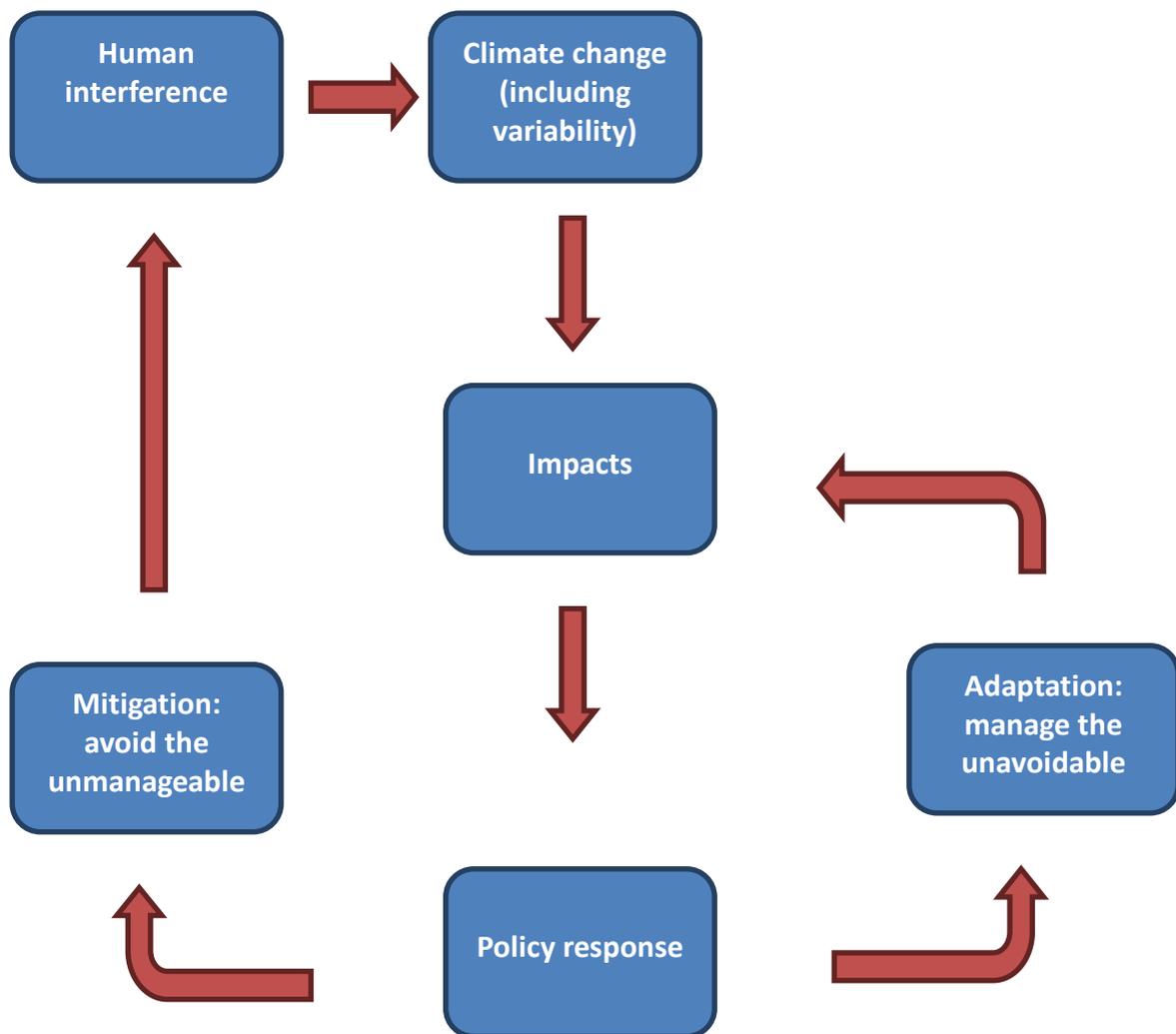
Costs to the community include the temporary re-housing of members of the community affected, sand bags (filling and delivering) and staff time.

Taken from Watford Borough Councils Local Climate Impact Profile (LCLIP).

2.3 What is the Council currently doing?

Mitigation and adaptation are both essential responses to the challenges of climate change (see Figure 3). Climate change represents a risk to people and governments around the world and much of the planned response is being negotiated at an international level, for example through the UN Framework Convention on Climate Change (UNFCCC). However the causes of climate change are also the product of individual decisions made at a local level, such as whether people decide to drive their car to work or take the bus, so reducing emissions is the responsibility of us all.

Figure 3: The relationship between mitigation and adaptation³



The impacts of climate change will be experienced locally and be a function of local characteristics and sensitivities and so the most appropriate response will be one that takes account of the local context and locally specific risks. This means that a consistent and integrated thorough wide response to this challenge is required.

More information on potential changes and impacts is provided in the appendices.

³Based on Lemmen, D.S., Warren, F.J., Lacroix, J., and Bush, E. Editors. (2008): From Impacts to Adaptation: Canada in a Changing Climate; Government of Canada, Ottawa.

2.4 Reducing emissions (mitigation)

In its role as service provider to the community, Watford Borough Council provided leadership on climate change through its Carbon Management Strategy and Action Plan.⁴ The strategy was adopted in 2007 and underpins commitments made by Mayor Dorothy Thornhill when the Nottingham Declaration on climate change was signed on behalf of the Council in 2003. It confirms Watford Borough Council is committed to reducing its own carbon emissions and enabling carbon emissions reduction across the borough. The Action Plan developed in 2008 set ambitious targets for reducing emissions across key sectors:

- Industry and commercial
- Domestic / households
- Road Transport
- Waste
- The Council's operational emissions

The Action Plan was reviewed annually. As well as delivering and monitoring progress towards the local commitments made when the strategy was adopted, the strategy and Action Plan also provided the mechanism to deliver national requirements of the former NI 185 and NI 186.

The aims of the Carbon Management Strategy are detailed in Table 1.

Table 1: Community CO₂ emissions reduction targets and 2005 baseline

	Industry & Commercial	Domestic	Road Transport	Overall
Original 2010 strategy target from 2004 baseline	-11% -19,100 tonnes Per year	-11% -21,400 tonnes Per year	-2.5% -2300 tonnes Per year	-9.6% (included waste) 45,500tonnes
Revised 2011 target from 2005 baseline	-11% -24,090 tonnes Per year	-10% -19,600 tonnes Per year	-2.3% -1932 tonnes Per year	-9.2% (excludes waste) 45,500tonnes
2005 baseline	218,716tonnes	195,976tonnes	84,554tonnes	499,246 tonnes

In developing and reviewing the first year of the Carbon Management Strategy and Action Plan the Council has recognised and acknowledged that community wide reduction in emissions and energy consumption can only be achieved with the engagement and assistance of external partners.

Planning Policy

In its role as Local Planning Authority the Council has great potential to influence the future carbon emissions of the Borough. Through this avenue the Council can have a positive impact on all sources of carbon emissions in the Borough, whether they originate from industry & commerce, our homes or from road transport. There have been some excellent individual examples of negotiating sustainability features into major new developments, at the Health Campus for example. To build on this success, the Council will adopt planning policy at the earliest opportunity that clearly sets out its requirements for all new

⁴ See: <http://www.watford.gov.uk/ccm/content/ehl/energy-efficiency/a-greener-watford---carbon-management-strategy.en> for Strategy and <http://www.watford.gov.uk/ccm/content/ehl/energy-efficiency/a-greener-watford---carbon-management-strategy-action-plan.en> for Action Plan.

development in the Borough which will include active promotion of district heating schemes. Tackling climate change is a key objective of government planning policy. The supplement to Planning Policy Statement 1, 'Planning & Climate Change, December 2007, clearly places an expectation on LPA's to put policy in place that will encourage supply of energy from decentralized, renewable and low carbon sources. Government has set the timescale for zero carbon development; local planning policy, together with progressive strengthening of the building regulations will drive progress towards all new homes being zero carbon by 2016 and non domestic developments by 2019.

There is an emphasis is on energy efficiency before the use of renewable technologies – the use of the Code for Sustainable Homes environmental impacts rating system and changes in Building Regulations mean that onsite renewable technologies policies are becoming redundant. This means that the policy for Watford will contain a target reduction in the building emission rate, in line with the Code for Sustainable Homes. The reduction of CO2 emissions will also be a focus for other Watford Borough Council policies on sustainable movement, air quality, flood risk reduction and water management, sustainable design, open space and waste management.

In November 2008 the Council adopted a Residential Design Guide which contains advice on improving energy efficiency and including renewables in development. More specific standards will be set through policies in the Local Development Framework. In the meantime, the Council contributes to and promotes the County-wide "Building Futures" programme, which provides detailed guidance and advice to developers on how they can improve the environmental performance of proposals (see <http://enquire.hertscc.gov.uk/buildingfutures>). The Building Futures programme also implements an awards scheme to raise awareness and promote good quality schemes.

Watford's size and its role as a regional centre and regional transport interchange means that transport has a significant impact on Watford's environment. Watford is the most congested town within Hertfordshire, although levels of congestion here are still much less than in London Boroughs and other major settlements outside Hertfordshire, such as Luton/Dunstable. Nonetheless, infrastructure solutions need to be devised and delivered alongside development within the town in order to curb the growth of traffic related emissions.

As the Local Development Framework progresses these issues are being addressed. The first document in the framework, the Core Strategy, will be submitted to the secretary of state in summer 2011 and adopted shortly afterwards. Policies are currently being drafted and a pre-submission consultation is currently taking place.

The Planning section is also looking at funding sources such as Section 106 agreements and Community Infrastructure Levies (CIL) to promote and deliver large scale infrastructure such as district heating.

Industry & Commercial

2005 CO2 emissions – baseline for former NI186	219kt per annum
2006 emissions	221kt per annum
Progress	+2.2kt per annum (+1%)
Target emissions by 2011	194.9kt per annum

Industry & commerce are responsible for the largest portion of emissions, at 213kt in 2007 making up 42% of the Borough's carbon footprint. The 2007 data shows a decrease from 215kt in 2005 to 213kt in 2007 which illustrates the need to continue focusing on this sector and engage local businesses in rising to the carbon reduction challenge. Part of this is to recognize the financial, as well as environmental rewards, of cutting their energy consumption.

In September 2007 local businesses were surveyed to gauge levels of interest and ascertain most suitable methods to aid carbon reduction. This led to a successful event with 45 businesses signing up to the 'One Watford green business pledge' and the production of a monthly e-newsletter 'How green is my Watford?' This is an excellent 'One Watford' Local Strategic Partnership initiative led by the Chamber of Commerce that has the potential to deliver significant carbon reductions. Membership is growing steadily, with an ambition to work with partners to make resource efficiency reviews more accessible. As to be expected those quick to sign up were already taking steps to green their business so this is providing an excellent arena to share best practice and ideas. Reaching the environmentally complacent will pose a greater challenge which is being addressed by a number of projects run by One Watford.

The Council owns a substantial portfolio of commercial property in the Borough including shopping malls, supermarkets, business parks and warehousing. Although generally the Council is not directly responsible for fixtures and therefore energy consumption in these premises, the Council will seek to consider these assets in terms of their contribution to the Boroughs carbon footprint. As landlord the Council has an opportunity to influence tenants and will, as a minimum, introduce advisory CO2 clauses into new leases when they are being negotiated. From October 2008 the Council, as landlord, has been required to provide Energy Performance Certificates for let properties on change of tenancy. The Council has considered how it can best use this as a tool to improve the energy performance of its property portfolio and has adopted a minimum acceptable energy rating to achieve over a specified timescale.

The Council's own operational buildings contribute to this sector. The Council will continue to endeavour to lead by good example in demonstrating energy saving measures (see page 17).

Domestic – households

2005 CO2 emissions – baseline for former NI186	193.9kt per annum
2007 emissions	189.5kt per annum
Progress	-4.4kt per annum
Target emissions by 2011	176.3kt per annum

The 2005 and 2007 statistics suggest a trend of decrease in total household energy use. This is likely to be due to successful campaigns conducted in the Watford borough; the Council will continue to be proactive and work with the Energy Saving Trust Advice Centre and other partners to promote and facilitate energy saving in homes throughout Watford.

The Council has a good track record of activity aimed at reducing domestic energy consumption and addressing fuel poverty. Working closely with the United Sustainable Energy Agency (USEA, formerly Milton Keynes Energy Agency) the Council has delivered notable achievements in the last 12 months. The Herts and Essex Energy Partnership

(HEEP) which tops up discounts from the utility companies to cap the cost of loft insulation and cavity wall insulation currently priced at £49 per measure has proved to be the Councils most successful initiative to date. Coupled with successful promotion of free insulation for the over 70's alongside bus pass renewals this has been responsible for a dramatic increase in take up of these measures

	2007/08	Q1+2 2010/11
Number of people advised on energy & insulation advice line.	777	276*
Cavity Wall Insulated installed	10	63
Lofts insulated	29	135

Estimated annual carbon savings from installed measures above = 24.6 tonnes.

*Promotion of this line has now ceased as research showed an increased response when marketing directly to the schemes.

This Watford Energy Incentive grant activity has in 2008/09 helped householders in the Borough benefit from approximately £12,000 of CERT funding from utility companies. The HEEP scheme has been driver of the increase in insulations in 2010/11.

Sharp rises in energy prices will undoubtedly increase the number of households in Watford living in fuel poverty (defined as households spending 10% or more of income on energy). The elderly, low income families with young children and those suffering from long term illnesses are particularly at risk from the health problems associated with poorly heated homes. The Council will continue to carry out targeted activity to alleviate fuel poverty and work with partners to identify and help those most at risk; however some of the factors that contribute to fuel poverty, such as energy prices lie beyond the Councils power to influence, The Council will continue to promote Warmfront grant and HEEP scheme for replacement/new central heating systems and insulation measures, and also continue to provide top up grants where the work required exceeds the maximum available grant.

The Council was part of a successful funding bid with the London commuter belt authorities for a 'Fuel Poverty and Carbon Reduction' project. Watford BC has part of the £6,627,600 pot of regional housing funds. This enabled a proactive campaign with a target to achieve an increase in uptake of energy saving measures across the borough.

The private rented accommodation makes up approximately 11% of housing in the Borough. The 2009 Private Sector Housing Stock condition survey indicates that, in line with the national picture, these properties typically have the poorest levels of energy efficiency. Watford Borough Council has developed an innovative assessment tool that it uses to assess excess cold during housing inspections within private rented accommodation. This is used to quantify the reduction in fuel cost that improvement works can bring. Landlords are now required by law to provide an Energy Performance Certificate when a property is let for the first time or on change of tenancy.

The Home Energy Conservation Act 1995 has, until recent years, provided the main focus for activity in the domestic sector. The reporting methodology has long been acknowledged as flawed with inconsistencies in the preparation of baseline and annual reported data between Local Authorities. From April 1996 to 31 March 2007 authorities have reported an overall improvement in domestic energy efficiency of 22%, measured against a 1996 baseline. Watford has achieved a 34.63% improvement, well above the average and

also exceeds its own target of 27.1%. This was then replaced by NI 187 which showed improved Standard Assessment Procedure (SAP) for energy efficiency in domestic properties. Between 2008/09 the number of households with a poor (low) SAP rating decreased by 1% and those with a good (high) SAP rating increased by 2%.

Road Transport

2005 CO2 emissions – baseline for former NI186	102.7kt per annum
2007 emissions	100.7kt per annum
Progress	-2kt per annum
Target emissions by 2011	82.6kt per annum

Watford is the centre of a sub-region serving around 500,000 people living within a 20 minute travelling time catchments area. As part of the London Commuter Belt, Watford is strongly influenced by London and whilst this brings benefits to the local economy it also brings significant environmental pressures, such as high levels of traffic congestion.

The Council currently refers to the Hertfordshire Local Transport Plan for reducing emissions and will develop a plan specific to Watford linked to this.

Watford has the second lowest road transport emissions of the LCC authorities but is a compact Borough and also has the second lowest population. The recently published data suggests that the Borough’s target for emissions from this source have already met the target reduction level. There is no room for complacency however as the pressures of increasing population and maintaining the commercial vibrancy of Watford has the potential to increase traffic flows in the Borough with negative impacts on traffic congestion and local air quality. The Council will therefore continue to work with partners to promote and facilitate alternative transport choices to the private car and will continue to lobby for excellent, low carbon public transport networks.

The council’s three year Travel Smart programme has researched travel behaviour and was reported in November 2008, which will act as its baseline for future improvements.

To compliment the actions that the Council supports Watford Business Travel Network Plan, which is aimed at businesses to reduce road traffic related emissions in Watford Borough, for example:

- Providing more safe cycling routes and promoting cycling through bicycle loans
- Increase numbers signed up to Watford Journey Share network.
- Create a Green Travel Plan for business/organisations

One Watford, the local strategic partnership, is fully supportive of such measures, and has identified reducing congestion and reducing the amount of personal travel using cars as draft short-term priorities from 2011 - see Action Plan for full list of actions.

Waste

2004 strategy baseline	6.5kt	Improvement on 2004
2006/07 emissions	5.76kt /(20968 tonnes not recycled @275kg per tonne)	11.4%

Waste management generates considerable quantities of carbon dioxide and methane - both important greenhouse gases. Our everyday waste contains biodegradable carbon based organic matter such as kitchen waste, garden waste, and paper, which all break down relatively quickly, and other slowly biodegradable organic materials such as lignin (wood-like material). Products such as plastics contain carbon derived from the fossil fuels from which they were made.

When the Council manages the treatment and disposal of waste, the carbon in the rubbish collected is also managed by the way in which it is released back into the environment: similarly the changing climate will impact on the way waste will need to be stored, treated and disposed of; when materials are broken down by organisms in the presence of oxygen (from the air), the main gas released is carbon dioxide; when the material decomposes in the absence of air, methane is also produced. Weight for weight, methane is 21 times more powerful as a greenhouse gas than carbon dioxide. Landfill sites exclude air from the waste which then breaks down without oxygen, forming methane.

Better management of our waste can significantly reduce emissions of greenhouse gases to the atmosphere. Recycling is good because it diverts waste from landfill and generally reprocessing uses less energy than creating products from raw materials however the priority should be waste minimization, seeking ways to reduce the waste we produce in the first place.

Two of the former national indicators relating to waste were NI 191 - residual household waste per household and NI 192 - percentage of household waste sent for reuse, recycling & composting.

NI 191-Residential household waste per household (Kg per household)		
2007/2008 = 589Kg		
2008/09	2009/2010	2010/2011 Target
523.90 Kg	510.58 Kg	499 Kg
NI 192 – Percentage of household waste sent for reuse, recycling and composting.		
2007/08 = 34.07%		
2008/09	2009/2010	2010/2011 Target
40.51%	39.65%	41.79%

Recycling rates in the Borough remain strong at 34.5 % in 2006/07 and 40.51% in 2007/08 diverting approximately 11,000 tonnes of waste from landfill in each year.

Watford Borough Council is a partner in the Hertfordshire Waste Partnership. Actions relating to waste reduction and recycling are contained within the partnerships Waste Aware Strategy. To compliment the actions that the Council supports in the Herts Waste Aware Strategy a number of local actions and targets have been and are being implemented that are aimed at reducing waste and increasing recycling in Watford Borough, for example:

- Trade waste recycling trials
- Enhanced waste minimization campaign activity

The Council's operational emissions

Within the Borough wide emissions is the Council's contribution resulting from its operational activities. National Indicator 185 provided a focus on these emissions and has provided the Council with a very comprehensive carbon baseline (2008/09) which includes all sources of CO2 emissions.

The Council will endeavour to lead by example, investing in the most feasible measures to reduce its carbon footprint and undertaking further exemplar projects such as that at Woodside Leisure Centre, which encompasses a host of low energy features which together are expected to out perform building regulations by 35%.

Other Council operations have included the implementation of thin client services for the council's IT resource. Additionally there exists an ongoing server replacement policy, where each server is replaced after 5 years to ensure the most energy efficient servers are used. There is a proposed relocation of the servers to an existing facility in Apsley to be shared with Hertfordshire County Council. This is expected to have significant savings on air conditioning required for the current server room at the town hall. Servers are being upgraded where possible to allow them to have remote access capabilities, which forms part of this transition. Home working has also been set up to reduce employee commute.

The Council recognizes that its purchasing decisions can have a significant impact on its own and indeed the Borough's carbon footprint. The Council has adapted a Sustainable Procurement Protocol to ensure it contributes to the objectives of this strategy. It will look to improve on tools and checking mechanisms to ensure appropriate consideration is given to carbon management issues in all purchasing decisions. This should entail updating the Procurement policy and the sustainable procurement policy to reflect this. Currently the council purchases 100% from renewable supplies which is well above the Governments recommendation of 15%.

This review has identified a number of actions that the Council has or is considering implementing to help reduce the Council's own carbon footprint, including:

- Establishing an energy / climate change champions action group
- Undertake a programme of energy/climate change awareness training for all staff
- Assign the Head of Legal and Property Services as the lead officer for coordinating delivery of corporate energy savings

Based on these and several other action points identified the Council has signed up to the Local Authority Carbon Management (LACM) Action Plan, which is run by the Carbon Trust. The plan aims to implement a number of action points to reduce the council's carbon emissions by 30% over a 5 year period and has been endorsed by the Carbon Trust.

2.1.2 Preparing for climate change risks (adaptation)

In signing the Nottingham Declaration, the Council has committed to:

- "Assess the risk associated with climate change and the implications for our services and our communities of climate change impacts and adapt accordingly" and
- "Encourage all sectors in our local community to take the opportunity to adapt to the impacts of climate change."

This Climate Change Strategy is the first step towards fulfilling these further commitments. For adaptation there is still work to be done within the Council and the community in building the evidence base for action.

The Council has assessed the extent to which adaptation is currently considered across key plans and strategies and this has informed some of the recommended actions (see appendix 5). Indicative climate change impacts that may affect the community are outlined in Table 2.

Table 2. Indicative climate change impacts

Weather event	Negative impacts	Positive impacts
Higher temperatures all year round	Greater demand for air conditioning in buildings could lead to warming in urban areas due to discharge from units. Also increased energy bills and carbon emissions.	Less need for heating of buildings in winter
Hotter and drier summers	Higher likelihood of drought and water availability problems. Parks and gardens could dry out. Subsidence more likely particularly in vulnerable areas such as clay soils.	Weather will be more favourable for people and they are more likely to be active outdoors. Makes a more attractive destination for overseas tourists.
More frequent and intense heat waves (three days or more when temperature is 5°C higher than average)	Increased pressure on health services and social services which poses a threat to the health of Watford's population, particularly the elderly, young and people with existing illnesses or mental health problems.	No positive impacts.
More intense downpours of rain (particularly in winter)	A greater volume of water will fall in a shorter space of time. This will lead to increased flooding both from rivers and 'flash flooding' in built up or developed areas.	No positive impacts.
More frequent and intense storms, bringing heavy rainfall, strong winds and snowfall	Higher risk of structural damage to homes, schools, hospitals and businesses in Watford. Businesses may be forced to close due to power failure or inability of staff to get to work. This downtime will lead to lost revenue.	No positive impacts.

3. Adaptation and Mitigation Action Plans

As suggested above, climate change impacts pose a number of risks to the people and businesses of Watford, the Council in the delivery of its services and other delivery organisations. Previous work undertaken has provided a measure of how well the Council is currently prepared to meet some of these challenges through a review of key policy, strategy and corporate drivers. While there are gaps in the existing consideration of adaptation within the strategies looked at, there are also a number of opportunities to streamline adaptation into existing decision-making processes.

The aim of this section is to recommend a series of actions that can be taken forward in the short and longer term. Our ambition is to identify both what the Council must do to adapt and also the borough more widely, through the local strategic partnership and members of the community.

3.1 Aims of the strategy and Action Plans – where we want to be

The overarching aims of the Climate Change Strategy, Adaptation Action Plan and Mitigation Action Plan are to:

- **Reduce the release of greenhouse gases into the atmosphere from activities within the borough.** Currently this aim is being addressed through the Carbon Management Action Plan actions for which have started. The Plan can be found on page 28
- **Prepare planned responses aimed at minimising the threats and maximising the opportunities of a changing climate within the borough.** This has been addressed in this document.

A focus of the Climate Change Strategy and Action Plan will be on ensuring that adaptation is equally well represented as mitigation is within the Council's activities and across the borough more widely.

3.2 Objectives of the Strategy and Action Plans – how we are going to get there

In order to embed adaptation measures across the Council and the borough we commit to some key themes that will be implemented immediately:

- **To raise awareness of climate change within the Council and the borough more widely.** A communication strategy to increase staff awareness will aid climate change adaptation and mitigation action amongst the Council. By increasing knowledge and building capacity amongst different departments, engagement and commitment to take forward actions in a Climate Change Strategy can be achieved. A key issue here is one of resources. Many organisations are actively pursuing the adaptation agenda and an important lesson to emerge is that this is difficult without dedicated staff. Adaptation is a cross-cutting issue that needs to be addressed at a number of scales (from officer level to senior management) and in a number of ways (for example mainstreaming adaptation concerns into existing policies and strategies). As such it requires a considerable degree of engagement and resources; a useful parallel is in terms of sustainable development. Experience from other local authorities suggests that it is initially very hard to make progress when climate change is only one aspect of someone's day job.

Watford Borough Council recognise this and therefore have committed to the use of a dedicated officer over the coming year to develop, co-ordinate and deliver this Strategy and Action Plan. It is also recognised that there is scope for building on the status and Action Plan of the Carbon Management Strategy. The strategy commits to the development of an 'Energy Task Group' with key personnel from all Council services attending. Additionally, the action plan commits to training for all staff, development of induction training and the introduction of an energy champions group. These will be asked to expand to consider adaptation as well.

The process of consultation and development of the Climate Change Strategy and Action Plan will start through raising awareness within the community. In particular and in addition to the local strategic partners we will seek to engage with community groups already working in partnership with the Council.

- **To demonstrate leadership within the borough.** By Watford Borough Council demonstrating its commitment to reducing the risks associated with climate change impacts it can demonstrate best practice for staff and other organisations to follow and implement on climate change adaptation. The Council has demonstrated this commitment for reducing emissions in its Carbon Management Strategy and Action Plan. Now the Council must prioritise the embedding of climate change adaptation into corporate management, decision-making, major projects, contracts and policies.

The Council can use its position as a freeholder of significant areas of the borough to communicate and require risks relating to climate change to be considered. This has already commenced in relation to the requirement for Energy Performance Certificates and developments are being made to make considerations and mitigation conditional on lease and property transfers.

- **To work in partnership with neighbouring authorities, regional agencies and partner organisations.** Working with partners, neighbouring authorities and regional organisations will help the borough to be better adapted to climate change and more able to deal with risks and opportunities in the area. This will include building on the ongoing engagement with the local business community alongside Watford Chamber of Commerce, via the One Watford (local strategic partnership) Green Business Pledge. We will also explore further opportunities for partnership working with Hertfordshire County Council, the East of England Development Agency, Three regions Climate Change Partnership, and the local Primary Care Trust.

An example of this is the Watford Health Campus scheme where, with partners, a design proposal incorporates a Combined Heat and Power plant (CHP) to provide power for the new hospital infrastructure and heating and support residential and commercial units with an efficient and sustainable power source. The scheme is also designed to increase flood plain captivity and ensure impact on adjoining areas is minimised.

- **To make the links with adaptation and mitigation action.** Work on climate change adaptation should be coordinated with work on mitigation to ensure efficient use of resources and methods of working. The Council's decisions in relation to mitigation and adaptation should be complementary. This could be achieved by ensuring that mitigation and adaptation are addressed in all relevant strategies and plans in an integrated manner.

- **To develop community resilience.** Watford Borough Council will work with and enable organisations such as the Primary Care Trust and local emergency services to develop greater community resilience to climate impacts. For example identifying and targeting people that might be vulnerable to intense periods of hot weather and educating and preparing them for future events and arming local businesses with knowledge of what to do in flooding events

Because climate change impacts are uncertain it will be important for Watford Borough Council to monitor how climate change impacts are evolving and periodically review risks, vulnerabilities and priorities for action. This should also include keeping up to date with the latest local and regional best practice in this area. The Climate Change Strategy and Action Plan will be reviewed and presented for cabinet approval annually

As the council is constantly evolving its function to deal with recognised risks many actions to deal with mitigation and adaptation have already been put in place. Section 3.3 on page 28 highlights these achievements and lists the actions the Council continually undertaking.

To achieve these objectives we have structured the Action Plan around a number of key climate change risks:

- Increase in river flooding
- Increased risk of flash flooding (from drainage overflow etc)
- Increase in winter storm damage
- Summer water shortages
- Increased subsidence (in areas prone to subsidence)
- Increased incidences of very high summer temperatures

We have also added a section on cross-cutting actions. Section 3.4 is the the full Adaptation Action Plan is available on page 42.

For further information and/or comments regarding the Climate Change Strategy please contact Watford Borough Council Environmental Health on 01923 226400 or email envhealth@watford.gov.uk

3.3 Climate Change Adaptation and Mitigation Achievements and Continuous Action

Glossary of abbreviations

Watford Borough Council	WBC
Hertfordshire County Council	HCC
Hertfordshire Police Authority	HPA
John Lewis Watford	JL
Safer Watford partnership	SW
Watford and West Herts Chamber of Commerce	WWHCC
Watford Community Housing Trust	WCHT
Watford Council for Voluntary Services	WCVS
Watford District Children's Trust Partnership	WDCTP
Watford Football Club	WFC
Watford Observer	WO
Wenta	W
West Hertfordshire NHS Primary Care Trust	WHNHS
West Herts College	WHC

Carbon Management Strategy Action Plan - Achievements & Continuous Action

	Activity	Lead Officer	Delivery Partners	Regular action/ Monitor
1	Industry & Commercial			
1.1	Conduct proactive campaign to increase sign up to One Watford Green Business Pledge	Environmental Health & Licensing Section Head / Performance and Engagement Manager	One Watford / EST/EAC/ Communications/Carbon Trust	Continuous until Dec 2012
1.2	Continue to produce & distribute to members monthly e-newsletter 'How Green is my Watford?'	Partnerships and Performance Section Head	One Watford	Continue Bi monthly newsletters
1.3	Develop mechanisms to make resource efficiency reviews easily accessible to all Watford businesses.	Environmental Health & Licensing Section Head/ Partnerships and Performance Section Head	One Watford / WWHCC/ Business Link	Continuous until Dec 2012
1.4	Actively manage the signatories to Green Business Pledge by individual engagement. Set up ongoing programme for contact	Partnerships and Performance Section Head	N/A	Continue Bi monthly newsletters

	Activity	Lead Officer	Delivery Partners	Regular action/Monitor
2	Domestic			
2.1	Continue to work with the Energy Saving Trust to promote energy efficiency and initiate promotion of small scale renewable energy to householders.	Environmental Health & Licensing Section Head	Energy Saving Trust Advice Centre	Annually (min)
2.2	Continue private sector homes loft & cavity wall insulation Energy Incentive Grant (EIG) initiative	Environmental Health & Licensing Section Head	United Sustainable Energy Agency/ HEEP	Ongoing. (Cavity wall insulation and loft insulation currently being offered at £49 for able to pay residents, free for others)
2.3	Carry out promotional campaigns for EIG (above)	Environmental Health & Licensing Section Head	United Sustainable Energy Agency	Annually (min)
2.4	Continue to help householders that qualify to access funding for heating improvements and insulation.	Environmental Health & Licensing Section Head	EAGA / Warmfront, United Sustainable Energy Agency	Annually (min)
2.6	Work with the Energy Saving Trust to stage advice surgeries on energy & transport at venues in the borough.	Environmental Health & Licensing Section Head	Energy Saving Trust Advice Centre	Minimum of one promotion annually

	Activity	Lead Officer	Delivery Partners	Regular action/ Monitor
2.7	Conclude the feasibility study for solid wall insulation in the private housing sector. Progress to implementation if viable and support installations.	Environmental Health & Licensing Section Head	United Sustainable Energy Agency / BRE	Complete. WBC has joined the HEEP scheme through which solid wall installations have been supported.
2.8	Continue to encourage private sector landlords to improve energy efficiency standards of their properties.	Private Sector Housing Manager	N/A	Ongoing
2.9	Investigate how the Council can best work with Herts trading standards to enforce requirements for EPC's with landlords. Consider the feasibility of using EPC's to target improvement measures.	Environmental Health & Licensing Section Head	Hertfordshire Trading Standards	Complete. A WBC have an Enforcement Partnership Agreement with Hertfordshire Trading Standards. Currently waiting legislation to allow detailed targeting.
2.10	Produce and distribute to all households a 'greening your home' booklet	Environmental Health & Licensing Section Head	N/A	Ongoing. Advice is being disseminated via bi-monthly publication About Watford as the 'Eco made easy' articles.

	Activity	Lead Officer	Delivery Partners	Regular action/ Monitor
3	Transport			
3.1	Carry out green travel review for Watford.	Transport & Infrastructure Section Head	N/A	Complete. Results being publicised during 2011.
3.2	Provide additional cycling and pedestrian routes in accordance with the adopted cycle and pedestrian strategies	Hertfordshire County Council / Transport & Infrastructure Section Head	Hertfordshire Highways	Ongoing development of plans. WBC participated in TravelSmart. Hertfordshire County Council currently bidding for funding to continue service.
3.3	Promote Watford Journey Share network	Environmental Health & Licensing Section Head / Partnerships and Performance Section Head	One Watford	Partnership collaboration with One Watford has produced and promoted this through the Watford Commuter travel scheme.
3.4	Encourage larger businesses to implement green travel plans and continue to seek them as part of the development proposals	Partnerships and Performance Section Head /Transport & Infrastructure Section Head	One Watford	Partnership collaboration with One Watford has produced and promoted this through the Watford Commuter travel scheme.

	Activity	Lead Officer	Delivery Partners	Regular action/ Monitor
4	Other / Cross sector			
4.1	Develop planning policy that compliments the Governments zero carbon new homes and businesses agenda, setting standards for low carbon development and on site generation of energy from renewable and low carbon sources.	Planning Policy Section Head	One Watford	Ongoing through LDF
4.2	Conduct feasibility study and identify potential partners and targets for installed local power generation and heat distribution in Watford.	Environmental Health & Licensing Section Head	N/A	Potential partners have been identified and WBC will support the feasibility studies of potential sites when identified
5	Waste (see also Herts Waste Strategy)			
5.1	Develop an action plan to continue to deliver enhanced waste minimisation and recycling campaign	Waste and Recycling Section Head	N/A	Complete
5.2	Conduct a review of policy & procedures to ensure waste arising from Council activity is minimised and reuse and recycling opportunities maximised.	Waste and Recycling Section Head	N/A	Complete
5.3	Implement recycling of cardboard waste from Charter Place (60% of 624t annual waste)	Charter Place Manager/ Procurement Officer	N/A	Ongoing
5.4	Carry out trade waste and recycling trials	Waste and Recycling Section Head	N/A	Complete

	Activity	Council Lead	Delivery Partners	Regular action/ Monitor
6 Council Operations				
6.1	Assign the Head of Legal and Property Services as the lead officer for coordinating delivery of corporate energy savings and reporting to the Head of Environmental Services who retains overall responsibility for carbon management.	Head of Environmental Services / Head of Legal and Property Services	N/A	Through Local Authority Carbon Management (LACM) plan. Ongoing until 2016
6.2	Establish an energy task group including facilities managers and key personnel from all service areas to identify, develop and implement energy savings from all operational Council buildings and activities. This group will be chaired by the Head of Legal and Property Services and acts as the delivery and monitoring mechanism for activity. Include production of a SMART Action Plan of proposals for energy saving measures to council buildings	Head of Legal and Property Services.	N/A	Through LACM. Ongoing until 2016
6.3	Continue work currently underway to produce holistic carbon baseline for the Councils operations as required under the former NI185 and ensure mechanisms are in place for ongoing monitoring.	Environmental Health & Licensing Section Head	United Sustainable Energy Agency	NI185 has been scrapped by Government, however, identical data is required by Government and therefore being collected for this purpose and the LACM plan

	Activity	Council Lead	Delivery Partners	Regular action/ Monitor
6.4	Continue to review ICT systems and equipment and move to latest low energy options e.g. virtualisation (where applicable) and continued roll out of thin client.	Head of ICT	Three Rivers District Council Herts CC	Ongoing monitoring
6.5	Actively promote occasional home working policy for employees	Heads of Service/Head of ICT	N/A	Being developed through HR.
6.6	Commit to achieving exemplary standards in all new build and during refurbishment of corporate facilities where cost effectiveness can be demonstrated.	Head of Buildings and Projects	N/A	Asset Management System (AMS) adopted
6.7	Establish a 'green champions' group with representatives from all departments.	Environmental Health and Licensing Section Head	N/A	Ties in with the LACM group
6.8	Provide training for champions and awareness raising sessions for all staff.	Environmental Health and Licensing Section Head	United Sustainable Energy Agency	Training events planned for Autumn 2011

	Activity	Council Lead	Delivery Partners	Regular action/ Monitor
6.9	Develop new corporate induction training package on carbon and climate change	Environmental Health & Licensing Section Head / HR	United Sustainable Energy Agency	To be progressed in 2011/2012
6.10	Continue and put in place to procure 'green tariff' –low and zero carbon electricity supply where available.	Procurement manager	N/A	Complete
6.11	Implement the measures introduced in the Council's recently revised Green Travel Plan.	Head of Planning and Development	One Watford	Complete
6.12	Review and update the procurement policy to ensure purchasing decisions do not contribute to increasing the Council's carbon footprint, and where possible reduce it.	Procurement Manager	N/A	Complete
6.13	Develop & implement a checklist to ensure the impacts on the Councils carbon footprint are duly considered for all purchasing decisions. (updating of procurement policies with specific reference to carbon footprints of suppliers).	Procurement Manager	N/A	Complete. Within LACM plan

Climate Change Adaptation Strategy Action Plan: Achievements & Ongoing Actions

	Action achieved	Council lead	Delivery Partners	Regular Action/ Monitoring
7 RISK: Increased river flooding				
7.1	Catalogue and prioritise areas at risk from river flooding (building on EA flood maps, SFRA and UKCP09 scenarios) therefore increasing resilience.	Hertfordshire County Council	Head of Legal & Property Services	Completed
7.2	Raise awareness of property owners and businesses at risk of flooding (build on EA's advice and notes on preparing flood plans).	Head of Legal & Property Services	HCC, HPA, WWHCC, WCHT, W	Completed
7.3	Work with Hertfordshire County Council on implementing actions required under the Flood and Water Management Act 2010. The act gives upper tier local authorities in England responsibility for preparing and putting in place strategies for managing flood risk from groundwater, surface water and ordinary watercourses in their areas.	Head of Legal & Property Services	HCC	Completed

Action achieved		Council lead	Delivery Partners	Regular Action/ Monitoring
8 RISK: Increased risk of flash flooding				
8.1	Identify and map 'hot-spots' of where flash flooding has and may occur (vulnerable locations) and causes (e.g. lack of capacity, poor maintenance etc...)	Head of Legal & Property Services	WCHT, W, WWHCC. Waste water utility company	Completed
8.2	Develop and implement engagement plan for businesses to encourage continuity planning	Head of Legal & Property Services	HCC, WWHCC, JL, W	Carried out as part of current council duties
8.3	Ensure that a procedure to cover the emergency response to a major flood event affecting the city wide road network is included in the Business Continuity and emergency Plan for Watford Council	Head of Legal & Property Services	HPA, WWHCC, W, WHNHS and Hertfordshire resilience	Carried out as part of current council duties
8.4	Encourage, where possible, the use of green roofs and other methods of reducing run off	Head of Planning & Development	WCHT, WWHCC	Included in Local Development Framework (LDF)
8.5	Increase resilience to properties and businesses at risk of flooding	Head of Planning & Development	WCHT, WWHCC	Carried out as part of current council duties
8.6	Encourage use of Sustainable Urban Drainage Systems (SUDS) in new-build developments (residential and non-residential)	HCC	Head of Planning & Development , WCHT	Included in LDF

	Action achieved	Council lead	Delivery Partners	Regular Action/ Monitoring
9 RISK: Summer water shortages				
9.1	Encourage use of Sustainable Urban Drainage Systems (SUDS) and rainwater harvesting & collection systems in new-build developments (residential and non-residential).	Head of Planning & Development	WCHT, HCC	Included in Local Development Framework
9.2	Consider use of Sustainable Urban Drainage Systems (SUDS) and rainwater harvesting & collection systems during refurbishment of older buildings	Head of Planning & Development	WCHT, WWHCC, HCC	Included in Local Development Framework
10 Risk: Increased incidences of very high summer temperatures				
10.1	Undertake a review of environmental health policy to determine if there is a need for changes to current practice such as the level of inspection of food processing plants, restaurants and other premises serving food, etc.	Environmental Services	N/A	Covered within current practice
10.2	Ensure critical facilities prepared to operate and cope with heat waves. E.g hospitals	Head of Legal & Property Services and External Key partners	WHNHS, HPA, HCC and Hertfordshire Resilience	Completed
10.3	Ensure ICT is resilient to potentially extended power failures (due to storms damaging distribution network).	Head of ICT	WWHCC, W, HPA	Carried out as part of current council duties

	Action achieved	Council lead	Delivery Partners	Regular Action/ Monitoring
11 Cross-cutting actions				
11.1	Develop energy task group and ensure adaptation is considering across existing climate-related working groups (such as the energy champions group)	Head of Environmental Services	N/A	Ties in with the LACM Group.
11.2	Make links internally with risk management processes	Head of Environmental Services	N/A	Completed. Within this document
11.3	Develop list of when key documents (policies, plans and strategies) are being developed and reviewed – these are key intervention points (e.g. Housing strategy, Hertfordshire Joint Municipal Waste Strategy, Green spaces strategy etc.).	Head of Environmental Services	N/A	Completed
11.4	Ensure LDF and Sustainable Community Strategy reflect climate change mitigation and adaptation. This includes requiring developments to consider increased flood risk, hotter summers etc. Require new developments to consider climate changes risks at design stage	Head of Planning & Development	All partners	Completed and in included with LDF
11.5	Monitor climate trends and associated impacts on council and community	Head of Planning & Development	All partners	Completed by LCLIP, ongoing monitoring taking place.

3.4 Climate Change Strategy Action Plan

Glossary of abbreviations

Watford Borough Council	WBC
Hertfordshire County Council	HCC
Hertfordshire Police Authority	HPA
John Lewis Watford	JL
Safer Watford partnership	SW
Watford and West Herts Chamber of Commerce	WWHCC
Watford Community Housing Trust	WCHT
Watford Council for Voluntary Services	WCVS
Watford District Children's Trust Partnership	WDCTP
Watford Football Club	WFC
Watford Observer	WO
Wenta	W
West Hertfordshire NHS Primary Care Trust	WHNHS
West Herts College	WHC

Climate Change Adaptation Action Plan Action				
	Action	Council lead	Delivery Partners	Target / Timescale
1 RISK: Increased river flooding				
1.1	Ensure siting & design of new buildings and/or developments do not exacerbate flood risk	Head of Planning & Development	HCC, WWHCC, WCHT, W	
1.2	Ensure siting & design of new buildings and/or developments do not exacerbate flood risk	Head of Planning & Development	HCC, WWHCC, WCHT, W	
2 RISK: Increased risk of flash flooding				
2.1	Review maintenance regimes for the clearance of roadside gullies, culverts and the drainage network and amend as necessary to cope with increase in episodes of heavy rain.	Head of Environmental Services	HCC	
2.2	Seek improvements where possible to the existing storm sewer network to increase capacity to accommodate higher flow rates	External lead / Head of Environmental Services	HCC Thames Water	
2.3	Ensure ICT is protected in flood risk areas - link to local and community resilience planning. Consider re-location of ICT in areas with negligible risk	Head of ICT	HPA, JL, WWHCC, WCHT	
3 RISK: Summer water shortages				
3.1	Plan and implement water efficiency engagement / action plan for residents and business and council	External lead/ Head of Environmental Services	W, WWHCC, WCVS Veolia Water	
3.2	Work with Veolia Water (water supply) - contingency planning in times of drought	External lead/ Head of Environmental Services	Veolia Water	
3.3	Use drought-resistant species or varieties/cultivars when planting parks and open spaces (for trees, bushes and flowers) in order to reduce future water requirements	Head of Community Services	N/A	

4 Risk: Increased incidences of very high summer temperatures				
4.1	Work with NHS and PCT to support the national heatwave plan on a local level. This should include a review of cooling systems in buildings that cater for older people (care homes, retirement flats etc.)	External lead/ Head of Community Services	WHNHS	
4.2	Provide advice to vulnerable groups, businesses and schools on how to stay cope with very hot weather	External lead; Health Services/ Head of Environmental Services	W, WWHCC, WCVS, SW, WHNHS	
4.3	Monitor populations of disease-bearing vermin and pests in the face of rising temperatures and review resource requirements to manage them	Head of Environmental Services	N/A	
4.4	Review the frequency of waste collections, pest control and storage options in light of very hot or very wet weather patterns.	Head of Environmental Services	WWHCC, W	
5 RISK: Increased risk of winter storm damage				
5.1	Ensure extended power failures are considered in the emergency / continuity business plans of the council and businesses, and especially key services such as hospitals	Head of ICT and Head of Legal & Property Services	HPA, WNHS, WWHCC	
6 Risk: Increased subsidence				
6.1	Develop awareness of links between increasing summer droughts and subsidence, and risks associated with subsidence	Head of Planning & Development	W, WWHCC	
6.2	Identify and prioritise areas at risk from increased subsidence (in particular clay soils)	Head of Planning & Development	N/A	
6.3	Review database of tree protection orders and identify trees under particular threat from subsidence (due to e.g. soil type etc...)	Head of Planning & Development	N/A	

7 Cross-cutting actions				
7.1	Increase awareness of risks presented by climate change among council staff, partners and members of the public. (e.g. develop briefing notes on key climate change risks and suggested actions, develop engagement plan for Council and across Partner organisations)	Head of Environmental Services	All partners	
7.2	Identify key risks to each Council department and Partner	All departments individually responsible for their own risk assessment. Head of Environmental Services to co-ordinate the overview. This will be discussed individually with each department.	All partners	
7.3	Increase partnership working - consider establishing climate change partnership for Watford. Engage with local experts such as BRE	Head of Environmental Services	All partners	
7.4	Ensure WBC Corporate Plan includes climate change mitigation and adaptation. In particular both should be reflected throughout the plan rather than as discrete ambitions	Head of Environmental Services	N/A	
7.5	Encourage risk management and business continuity across the partnership and community more widely	Head of Legal & Property Services	All partners (especially W, WWHCC)	
7.6	Ensure emergency planning and resource allocation matches changes in levels of risk	Head of Legal & Property Services	HPA, HCC, Also Hertfordshire resilience	
7.7	Encourage adoption of guiding principles for conserving biodiversity in a changing climate across the borough ^[1]	Head of Community Services	All partners	

^[1] See: www.ukbap.org.uk/Library/BRIG/CBCCGuidance.pdf