

# Winning solutions for adapting to severe weather



# Introduction

The need to adapt to inevitable climate change is now an established feature of effective planning for the future safety and prosperity of our communities. The impact of past greenhouse gas emissions will influence our climate for decades, so alongside efforts to reduce emissions, we need to prepare for the climate change that we cannot avoid. Extreme weather events can have devastating consequences, as seen in the recent floods in Cumbria in 2009, which saw the highest rainfall recorded in one day and the floods across England in 2007, when over 50,000 properties were flooded and 13 people died. The heatwave that affected Europe in 2003 led to many thousands of deaths, with at least 2000 people dying in the UK.

Local government is at the frontline of action on climate change, as it is local communities who are impacted by the weather events, such as flooding, drought or heatwaves, which are projected to increase in magnitude and frequency over the course of the century.

## Local government is the most important player in adaptation

The Local Government Group is publishing this guide to highlight new opportunities for councils to address adaptation in order to make best use of current resources, maximise cost savings and dovetail with the new localism agenda. Action **now** on climate change can:

- help us understand and plan for risk, ensure business continuity and climate proof services at a time of change within local government
- secure significant cost savings and efficiencies, for example by avoiding the huge costs of repair and clear-up from storm damage and flooding, or by exploring opportunities provided by shared services
- tap into local knowledge and activity, identifying those most at risk and involving communities in co-ordinated local action to avert future threats
- share the cost of preventative measures with beneficiaries such as local communities and organisations, boosting investment and delivering joined-up solutions.

## Adaptation and local government

- Local authorities should be congratulated on the way they are rising to the challenge of climate change and the low carbon agenda. They are helping to raise awareness amongst communities, reducing local carbon use, and also leading the way on adaptation. We now need all areas to apply the same urgency to adaptation as we are achieving on mitigation.
- Adapting our services and local areas so that they are protected from the expected impacts and costs of climate change, has huge potential to save money, deliver

more effective services and involve local communities. At a time when all authorities are looking at how to reorganise services, constrain spending and promote Localism, taking action on adaptation can clearly be seen to deliver multiple benefits for local areas.

- Cost savings and efficiencies are now at the forefront of councils' thinking – adaptation planning can help authorities to assess future risks, reduce costs and work in partnership to protect services, communities and the local economy.
- Councils recognise the need to think and plan for the long term – in an uncertain financial climate it is more important than ever that we manage risks to business continuity and seize opportunities to share resources and cut costs.

### **Councillor Mike Haines**

Deputy Chair, LG Group Environment and Housing Programme Board

## How to use this guide

This guide is based on discussions within the Local Government Group involving many climate change officers and practitioners, including those attending an Adaptation Roundtable staged by the Local Government Group on 1 February 2011.

The guide groups the key adaptation issues for councils under four themes and encourages authorities to incorporate these into their own adaptation strategies and action plans where appropriate.

The themes are illustrated by short case studies which we hope illustrate a practical and cost-effective way forward for local adaptation activity.

## Council adaptation roles

### **Land use planning**

- preparing LDF policies
- development management decisions
- strategic co-operation (eg Shoreline Management Plans)
- approving and adopting SUDS in new development.

### **Providing infrastructure**

- maintaining and planning highways
- providing structural flood and coastal defences
- continuity of social care.

### **Designing and renovating buildings**

- delivering and enforcing building regulations
- local design standards and conditions.

### **Managing natural resources**

- green infrastructure strategies and delivery
- parks, countryside and biodiversity services
- promoting water saving measures.

### **Emergency planning**

- flood risk management strategies
- co-ordinating responses with emergency services
- contingency planning.

# Adaptation themes

## Mainstreaming adaptation

Budget restraints and reorganisation offer an opportunity to rethink our approach to adaptation and ensure that climate risk is fully integrated into the design of services. Where authorities have done this effectively they have reaped significant dividends, including bringing all services/departments on board and gaining wider political support by demonstrating cost savings. Councils have become increasingly creative in continuing to deliver on this crucial policy area for future generations.

**Eastleigh Borough Council** are using **PACT, the Hampshire Performance Acceleration Climate Tool** on each service/team to make adaptation real in terms of service design decisions. Priority risks (those common across a number of service areas) are being taken forward in team business plans. For further information on PACT go to the [Hampshire Climate Change website](#).

- In **East Sussex** authorities have adopted a sub regional version of the former NI188 to ensure that it is maintained as a local priority.
- **Oxfordshire County Council** used the Local Climate Impacts Profile, a tool designed to assess exposure to weather and climate. This calculated that the cost associated with weather incidents over a decade will be at least £16.4 million. Cost estimates helped to lend weight to

the adaptation agenda within the council and illustrate the financial risk of severe weather.

## Integrating localism into adaptation work.

The new Localism agenda gives local communities the responsibility and the opportunity to face up to and tackle major challenges such as adapting to the effects of severe weather. Councils will need to work with local communities to explain the threat of climate change as well as identify those most at risk. Involvement of local people in decisions on climate change is a key element of the LDF process.

- **Bradford and Kirklees Councils** have pooled both their £10,000 grants from the Regional Improvement and Efficiency Partnership to run a series of events to raise awareness of climate impacts such as heat waves, flooding, drought and strong winds. The events look at the steps that individuals/properties need to take to be prepared, the tools available for adaptation and the impacts upon individual/community health. A mix of community events, leaflet dropping and elected member workshops are planned throughout the year. The events have gained support from the Environment Agency, British Red Cross, Police, West Yorkshire fire service, and council emergency planning and drainage

departments. The events should help to identify impact hotspots which can then be addressed via Neighbourhood Plans.

- **Kent County Council** is playing a leading role in an EU-funded Coastal Communities project. Led overall by the Environment Agency, it is funded through Priority 2 of the Interreg IVa 2-seas fund with Kent leading on the development of engagement strategies and resources. Amongst other outcomes, the project seeks:
  - better communication with Kent residents around climate change and risk (through a communication engagement strategy)
  - communities having greater ownership of risks and opportunities from climate change and knowing how to manage these appropriately
  - better informed individuals, able to direct decision making relevant to their communities.
- **The City of London** is particularly vulnerable to heatwaves due to the 'Urban Heat-Island Effect' – concrete and stone in buildings absorbs heat during the day and releases it at night, creating temperatures which are up to eight degrees higher than the surrounding countryside. Following an approach from local churches, the City drew up a 'Staying Cool in the City' map identifying places across the city that provide oases of cool, where both residents and workers can find refuge from the heat. The map shows local Churches (with their stone walls), air-conditioned Public Buildings and Open Spaces with shaded areas.

## Pursuing multiple benefits

Given the drive for efficiencies, councils are looking to beneficiaries to help share the cost of adaptation measures, such as flood prevention works. Creative leadership from local authorities will enable partnerships with householders and local communities to secure involvement and investment.

- The local community in Holbeach, on the vulnerable Lincolnshire coast has taken the opportunity to undertake a project which assesses the general impact of climate change, in the context of its own social, environmental and economic development. **South Holland District Council** gave £10,000 to spend on the delivery of the Holbeach Parish Plan and at the end of year one this £10,000 had levered in an additional £140,000 into Holbeach Parish, through grants and other partnership funding.
- In **Sheffield** the City Council combined developer money with their land holdings to regenerate the Manor Fields Park area as a sustainable drainage system. This new district park manages the run-off from a 300 dwelling new housing development and as well as reducing flood risk (it performed well in the 2007 storms), its wider benefits include: reclamation of derelict land and much-needed housing; cost savings; recreational space that will also help reduce urban heating; biodiversity; and community involvement. The park has been adopted by the council using commuted sums and management and is 'proving to be minimal liability'.

## Securing efficiencies

Climate change impacts create direct and indirect costs for councils, their communities and businesses. Some of the costs to local authorities will be passed on to communities and businesses through school closures (heat waves and storms), subsidence, road closures through flooding, emergency provisions and repairs to damaged infrastructure. The severe flooding in summer 2007 is estimated to have cost over £3 billion. Costs are projected to increase, particularly on the coast with rising sea levels. Adapting local areas and services will save councils and their communities money and resources in the long term. Councils can drive further efficiencies by working in partnership with each other and sharing services. There is a powerful moral and financial case for reducing climate risk and this should ensure that addressing climate change remains a priority for local government.

- The Carlisle Flood Protection Scheme demonstrated that local adaptation measures can reduce climate-related costs. In 2005, 180 mm of rain fell in one day, causing 3 deaths, flooding 1,800 properties and costing £250m. A £38m programme of upgraded flood defences, awareness raising and co-ordination of services was developed and implemented. When sudden, extreme rainfall hit again in 2009 (317 mm in one day), houses in Carlisle remained safe – so there was a significant avoided loss. The EA estimates that this prevented some £48 million worth of damage alone – £10m more than the cost of the scheme.

- On a more local scale, when a leisure centre run by **Tonbridge and Malling Council in Kent** flooded in 2000, it resulted in costs to Tonbridge swimming pool of £900,000 in terms of damages and losses when it needed to be closed down for 14 weeks. Subsequent flood prevention measures were put in place costing £250,000. Whilst it may sometimes be impossible to stop nature from taking its course, adaptation measures show that it is possible to mitigate the effects and reduce the costs.

### Can we afford not to adapt?

Recent extreme weather events include:

- 2003 Heatwave – 2000 deaths in the UK
- 2005 Carlisle flooding – £250m costs
- 2007 Floods across England – £3.2bn costs
- 2009 Flooding in Cumbria – £276m costs
- 2010 Cornwall floods – £6m costs

# Further information

If you would like to comment on this guide or provide further case studies or examples of local authority good practice on climate change adaptation, please join the discussion on the Environmental Sustainability and Climate Change Community of Practice:  
[Environmental Sustainability and Climate Change Community](http://www.environmental-sustainability.org.uk/communities/Environmental-Sustainability-and-Climate-Change-Community)

The following links provide further information on a range of adaptation issues:

The UK Committee on Climate Change adaptation pages:  
<http://www.theccc.org.uk/adaptation>

The Defra Guide for local councils on adapting to climate change:  
<http://www.defra.gov.uk/environment/climate/action/documents/adapt-localcouncilguide.pdf>

The LRAP Guide 'Adapting to Climate Change: Local areas' action':  
[http://www.cagconsultants.net/resources/climate-change-case-study/Adapting\\_to\\_Climate\\_Change\\_Local\\_Areas\\_Action\\_June09.pdf](http://www.cagconsultants.net/resources/climate-change-case-study/Adapting_to_Climate_Change_Local_Areas_Action_June09.pdf)

The UKCIP adaptation case studies:  
<http://www.ukcip.org.uk/government/local-authorities/case-studies/>

LG Group Environment and climate change web pages:  
<http://www.lga.gov.uk/lga/core/page.do?pagelId=18292>

LG Group Environment and climate change resources:  
<http://www.idea.gov.uk/idk/core/page.do?pagelId=11216450>

LG Group Flood Risk and Water Management resources:  
<http://www.idea.gov.uk/idk/core/page.do?pagelId=12656790>

LGA Be Aware, Be Prepared, Take Action publications:  
[Be aware, be prepared, take action](http://www.lga.gov.uk/lga/core/page.do?pagelId=12656790)

Climate-UK support:  
<http://www.climateuk.net/>

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**Local  
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Group**

The Local Government Group is made up of six organisations which support, promote and improve local government.

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