A summary of the Local Climate Impacts Profile for Northamptonshire

Understanding the local impacts of extreme weather events on public services, places and people, helping us to prepare for future climate change

°Climate east midlands

Northamptonshire County Council

Introduction

The Local Climate Impacts Profile (LCLIP) for Northamptonshire was undertaken in order to increase our understanding of the county's vulnerability to severe weather events. It helps inform us about how these events affect the County Council's assets, infrastructure and capacity to deliver services. It also informs us about the impacts on other public service providers and local communities.

The LCLIP covers the period 2000-2010 and was carried out in three phases.

- **Phase 1** used interviews with County Council officers and analysis of media reports to understand the impacts of severe weather on the County Council and the county area as a whole.
- **Phase 2** analysed the impacts for each of Northamptonshire's seven district councils.
- **Phase 3** looked at the understanding of and approach to severe weather in Local Strategic Partnership (LSP) organisations through interviews with key members of staff.

The LCLIP and climate change

Climate change is expected to increase the frequency and intensity of some of the extreme weather events which we already experience, such as heat waves, flooding and drought, though it may reduce the occurrence of severe winter cold spells. By helping us to understand our current vulnerability to severe weather, the LCLIP acts as a starting point for understanding our vulnerability to climate change.

It is for this reason that each of the city and county councils in the East Midlands has developed an LCLIP as part of the first stage of the regional 'Well Adapting East Midlands' project on resilience to climate change.

Undertaking the LCLIP allowed all of the authorities to achieve Level 1 of the previous government's performance framework for local authority action on resilience to climate change, National Indicator 188.

The UK government continues to place high importance on local authority action on resilience to climate change and will publish a national risk assessment in 2012 and National Adaptation Programme in 2013.

As described in the final sections of this document the Northamptonshire authorities have used the results of the LCLIP as a basis for further work to increase their preparedness, working collaboratively and sharing information with the other East Midlands authorities through the regional project. The East Midlands Improvement and Efficiency Partnership has resourced this by providing funding for ongoing Project Officer support on adaptation to each of the upper-tier Authorities.

How will the climate change in the East Midlands?

UK Climate Projections 2009 data for the East Midlands suggests that, under a medium emissions scenario, by the 2050s the region may see:

- **An increase in summer mean temperature of around 2.5°C, and of winter temperatures of around 2.2°C;**
- **A 14% increase in winter mean precipitation;**
- **A 16% decrease in summer mean precipitation.**

(Source: UKCP09 - http://ukclimateprojections.defra.gov.uk)

Key Findings

Key Weather Events and Impacts

Between 1998 and 2010 Northamptonshire has been affected by a total of 68 extreme weather events, the most significant of these being the Easter Floods of 1998. Other major events include the record hot summer of 2003 and heavy snowfall in the winter of 2009/10.

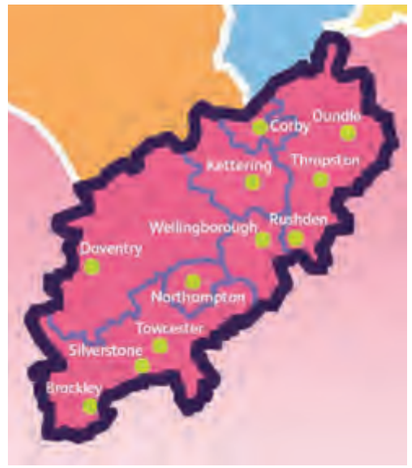
The County Council has spent over £1.33 million on property insurance claims alone due to extreme weather events over the past twelve years, with the Easter Floods contributing to more than a third of this total. This figure is an underestimate of the overall true costs to the council, however, as it does not include loss of staff time, costs due to loss of service provision nor the unquantifiable costs to the Council's reputation. In addition, this figure fails to account for the winter of 2009/10 which had considerable consequences for the highways and property departments within the County Council.

At a local level there was a marked difference in frequency of extreme weather events across the county which affected district councils.

- Northampton 46
- South Northants 30
- Daventry 29
- Wellingborough 27
- Kettering 22
- Corby 19
- East Northants 19

Northamptonshire is the southern-most county in the East Midlands covering an area of 915 square miles, the majority of which is rural in nature. 84 % of Northamptonshire's land use is agricultural (61 % arable, 23 % pasture), 8 % forest and 8 % urban.

Northamptonshire has a population of around 684,000 spread across its 7 District and Borough Councils. Around a third of the population resides in Northampton, the principal town, with the other main towns in the county comprising Corby, Kettering, Daventry, Brackley, Towcester, Rushden and Wellingborough.



The County Council services most frequently affected by the weather incidents identified in the LCLIP were:

- Fire and Rescue Service
- Waste Disposal
- Adult and Community Care
- Sustainable Transport
- Emergency Planning
- Countryside Services
- Asset Management
- Sustainable Transport
- Insurance
- IT Services
- Archives

Key Findings

A range of impacts and consequences were experienced by the County Council, LSP organisations and the community over the period studied:

Easter Floods of 1998 – large scale flooding affected huge swathes of Northampton town centre where properties were ruined and cars were washed down streets.

Rain/flooding and storms

- There have been 28 excessive rain, 26 storm and lightning and 1 tornado event(s) over the past 12 years.
- The summer floods of 2007 had a large impact in Northamptonshire, especially at Bishop Stopford School where £350,000 worth of damage was caused.
- The Easter floods of 1998 caused even more damage costing the Council £414,265 in property insurance claims, just under a third of the total amount for the whole 10 yrs. The total cost arising from the Easter floods is unknown due in part to a lack of available records and the fact that the scale of the disaster was so large that the effects were felt for any months and years after the event.

Heatwaves and drought

- There have been 7 extreme heat periods over the past 12 years.
- Extreme weather can have both a beneficial and detrimental impacts to the Council, for example the heatwave in 2003 when an increase in tourism was seen. However, transport links were disrupted as railway lines buckled and roads melted.

High winds

- There have been 8 incidences of high winds over the past 12 years.
- Strong winds mainly have implications for transport and infrastructure disruption and damage to roofs on council owned properties. County Hall is particularly susceptible, with the repair work estimated at between £60,000 and £120,000 due to it being a Grade One listed building.

Northamptonshire County Council is working with highways partners MGWSP to keep transport networks fully functional in periods of heavy snowfall and extreme weather events such as floods and storms.

Key Findings

Snow

- There have been 7 extreme snow periods over the past 12 years.
- The biggest impacts of these events were on the road network, traffic management, emergency services and schools.
- During the severe winter of 2009/10 bin collections were suspended, over 200 schools closed and the county's grit supplies came close to running out.
- In the aftermath of the 2009/10 extreme winter, 8,000 highways defects were reported to the County Council in March 2010 alone, with considerable financial consequences.

In recent winters Northamptonshire has witnessed large quantities of snow fall. An annual Winter Maintenance Plan has been created to ensure that transport networks within the county can still function in periods of snow and ice.

County Council awareness and approach

It was clear from discussions with various Council departments that:

- **Few actively consider the direct impact of weather on its service delivery**
- **Many took a reactive rather then proactive stance of responding to weather events**
- **Few recorded the impacts of weather related events**
- **Few considered the impacts of an increase in the frequency of extreme weather events.**

The River Nene runs right through Northamptonshire and Northampton, the county town. With a large water-shed and lowland surrounding areas the Nene and its tributaries are subject to flooding; the most severe cases of which occurred in 1998 and 2007.

Key Findings

Impact on the district councils

Summer floods of 2007 – standing waist deep outside her house after Northamptonshire was hit by extreme flooding in the summer of 2007.

Weather events have been found to elicit a variety of impacts on district/borough councils' services and estates. The most common impacts were those causing delays and damage to the road networks, caused by the effects of fluvial and pluvial flooding, snow and ice and tree debris spread during high winds and storms.

The district and borough councils in the south of the County have been affected more often than the north, although this could be due to either geographical issues such as the location of the River Nene or the fact that some of the newspapers focused more on the south of the county than the north. The south of Northamptonshire is more rural in nature that the north and therefore different weather events have different risks and consequences. The rural nature of the south of the county also means that the road networks are greatly affected by snow and ice events as many of the minor roads are not treated. Examples of impacts included:

- Waste collections were cancelled in Corby, East Northamptonshire and Daventry due to heavy snow in 2004, 2006 and 2009
- In the 2007 floods in Kettering 20 business and 40 homes were affected by surface water flooding
- Ferocious storms in October 2002 resulted in 24 claims being made to Northampton Borough Council due to damage from fallen trees. This cost the council £5,700
- The Easter floods of 1998 cost Northampton Borough Council £1.4m
- Over the past 10 years in Wellingborough, damage to council owned properties caused by strong winds and heavy rain have totalled £33,550

Road surface replacement – Northamptonshire County Council has worked hard to ensure that not only it is prepared for current weather events but also plans for the future when extreme events will become more frequent. As part of the approach to climate resilience a Material Design Manual is being created which will consider a materials' ability to cope under certain climatic conditions.
E.g. tarmac with a higher melting point to ensure that it will withstand hotter summers.

Using the LCLIP findings

Actions taken and next steps

Northamptonshire County Council has worked to identify and target areas and actions which have long term consequences. These have been risk assessed against climate projections and adaptive actions have been put into place to ensure that the risks posed to these long term areas are mitigated.

Following the completion of the LCLIP exercise Northamptonshire County Council has (as of October 2011) embedded adaptation within numerous council policies, processes and procedures including:

- Emergency Planning's Community Risk Register, multi-agency Flood Plan, Northamptonshire Heat Emergency Response Plan and plans for managing water shortages due to drought
- Business Continuity have distributed adaptation guides for businesses and carried out training and awareness sessions for industrial estate business groups
- Highways partner (MGWSP) has embedded adaptation into the Environmental Risk Assessment, Incident Control Plan, Proactive and Winter Maintenance Plans and Business Continuity Plans
- Procurement's Pre Qualification Questionnaire
- Overarching policies and processes: Standards of Required Practice, Committee Report Template, Northamptonshire Climate Change Strategy and Northamptonshire Climate Change Action Plan

Severe winter of 2009/2010 – large amounts of snow fell in a very short period affecting road networks, emergency services, schools and waste collection.

In recent winters Northamptonshire has witnessed large quantities of snowfall. An annual Winter Maintenance Plan has been created to ensure that transport networks within the county can still function in periods of snow and ice.

Contact

LCLIP project coordinated by Climate East Midlands, advised by UK Climate Impacts Programme and part funded by East Midlands Improvement and Efficiency Partnership.

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For further information on Northamptonshire County Council's work on resilience to climate change see its webpages: http://tinyurl.com/66lbfkg

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For information on the regional 'Well Adapting East Midlands' project visit the Climate East Midlands website: **www.climate-em.org.uk**

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UK Climate Impacts Programme

East Midlands Improvement and Efficiency Partnership