

Local Climate Impacts Profiles for London Local Authorities

London Borough of Haringey

Report
March 2010



Prepared for London Councils and the London Borough of Haringey

Revision Schedule

Local Climate Impacts Profiles for London's Local Authorities: Haringey March 2010

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1 Introduction

1.1 Introduction to the project

1.1.1 Scott Wilson's Climate Change and Policy team was commissioned by London Councils to prepare a Local Climate Impacts Profile for the London Borough of Haringey, as part of the 'Local Climate Impacts Profiles (LCLIPs) for London's Local Authorities' project.

1.1.2 The LCLIPs for London Local Authorities Project is part of a wider project being delivered by London Councils and the London Climate Change Partnership (LCCP)¹ which aims to gain a better understanding of weather-related impacts and their associated costs on infrastructure and services across London. The project is being delivered in four stages, stage three of which involves completing 22 individual local authority LCLIPs. LCLIPs can also be used to improve preparedness for severe weather events and improve engagement by London borough members and senior officers on climate change adaptation issues.

1.1.3 One of the key drivers for local authorities to address adaptation is the Government's new national adaptation indicator (NI 188). Undertaking an LCLIP is recommended as one of the first steps that a local authority can undertake towards achieving the 'level 1' performance tier for NI188 (which has five levels, starting at zero)².

1.2 Local Climate Impacts Profiles

1.2.1 UKCIP guidance³ on LCLIPs sets out that the purpose of preparing an LCLIP is to raise awareness of current vulnerability to weather events in a particular locality. This is in order to provide a starting point for the preparation of an adaptation strategy.

1.2.2 The Guidance also states that an LCLIP should provide a straightforward list of the main consequences of weather events to which a local authority area is currently exposed. It should also provide some understanding of local preparedness amongst those organisations with a responsibility to deliver public services, to respond and to assist communities. Information about the direct consequences – what happens as a result of weather events – should provide a starting point to raise awareness of risks and to kick-start a more considered approach to dealing with weather and climate impacts.

1.2.3 The Guidance highlights that in order to understand current vulnerability, it is necessary to gather information on the following:

- the nature and the magnitude of the **consequences** of recent weather events;
- the identity of the **agency(s) and/or local authority service areas** responsible for managing the consequences of events;
- the **preparedness** of responsible agencies and/or local authority service areas to deal with the consequences of local weather events;

¹ The LCCP is a stakeholder group co-ordinated by the Greater London Authority, comprising over 30 organisations, with representation from government, climate scientists, developers, finance, health, environment and communication sectors (including London Councils).

² LRAP, 2009. Adapting to Climate Change. Guidance notes for NI188. [online] available at: <http://www.defra.gov.uk/environment/climate/action/local-authorities.htm> (accessed 1 April 2010).

³ UKCIP, 2009. A local climate change impacts profile: how to do an LCLIP. UKCIP, Oxford

- the details of the **weather events and impacts** that caused these consequences;
- together, this information will allow an initial judgement to be made on what were **significant** consequences for a local authority/organisation and its locality.

1.2.4 The guidance also emphasises that an LCLIP needs to consider the effects of **weather** now, and in the recent past. It does not consider the consequences of future climate. We know that climate change will result in changes to both the extremes and the averages that define our current climate – a good understanding of the consequences of these current events should help local authorities prepare for the future.

1.2.5 An LCLIP is not intended to be an exhaustive source of weather impacts and consequences. It is instead intended to provide a snapshot of some of the key weather related vulnerabilities that affect service provision of local authorities. It is based on the impacts and consequences identified through a review of media reports and interviews with local authority service providers.

1.3 The London Borough of Haringey LCLIP

1.3.1 The London Borough of Haringey LCLIP is one of the 22 London Borough LCLIPs produced as part of the 'LCLIPs for London Local Authorities Project'. This LCLIP builds upon work undertaken for stages 1 and 2 of the London Wide LCLIP project, which comprised the production of a "London Climate Impacts Report" and the development of a methodology for completing individual borough LCLIPs.

1.3.2 The London Borough of Haringey LCLIP (the LCLIP) was undertaken between November 2009 and January 2010.

1.4 Methodology

1.4.1 The full LCLIP methodology is explained in Appendix 1. The key tasks undertaken were:

- A London-wide and local newspaper media review of weather events in the last five years (Jan 2005- Nov 2009)
- Interviews with key local authority service providers
- Creation of a database of weather events in the last five years and their impacts and consequences
- Analysis of weather events, impacts and consequences in the last five years
- Preparation of a final LCLIP report (this report)

1.5 Report Structure

1.5.1 This report is structured as follows:

- **Section 1: Introduction**
- **Section 2: The London Borough of Haringey** – Provides contextual information on the Borough.
- **Section 3: Key messages** – Presents the key messages and conclusions to emerge from this LCLIP. This is the key section of this report, which summarises the main messages from the LCLIP project.
- **Section 4: Key weather events** – Presents key weather types or events identified over the last five years that affected the borough.
- **Section 5: Impacts and consequences** – Links the key weather events (or types) to impacts and consequences for the organisations and service areas affected.
- **Section 6: Service areas affected, responses and preparedness** – Looks at which local authority service areas were affected by the weather events and provides examples of how these service areas have responded in the past; comments on the effectiveness of responses; documents any barriers to responding more effectively; and identifies any plans to improve responses.
- **Section 7: Conclusions and next steps** – This section provides conclusions and suggested next steps.
- **Appendix 1: Methodology and approach** – Describes the approach to media reviews, interviews and data analysis used to produce the LCLIP, as well as any limitations encountered.
- **Appendix 2: Interview questionnaire**

2 The London Borough of Haringey

2.1 Introduction to the Borough

2.1.1 The London Borough of Haringey is located in the centre of North London covering an area of 2,958 hectares. Although historically considered an outer London borough, large parts of Haringey have the social and economic characteristics of an inner London borough⁴. It is bordered to the west by Waltham Forest; to the south by Camden, Islington and Hackney; to the east by Barnet; and to the north by Enfield.



2.1.2 There is one Metropolitan town centre (Wood Green) and five District town centres in Haringey: Muswell Hill, Crouch End, Green Lanes, Tottenham High Road / Bruce Gove and Seven Sisters / West Green; as well as several smaller centres. A network of parks, open space, wildlife sites and Green Belt is one of Haringey's strengths, making an important contribution to the quality of life. Haringey has 600 acres of parks, recreation grounds and open spaces which make up more than 25% of the total borough area. In the borough, the two most important waterways are River Lee (as it flows through the Lee Valley) and the Moselle Brooke, which runs through the Heartlands/Wood Green opportunity area.

2.1.3 Recent estimates indicate a resident population of approximately 226,200, of which approximately 11% are over a pensionable age and 19% are under 16. There are approximately 100,444 households in the borough, of which approximately 28% comprise public sector housing. There 100 Schools in the borough accommodating approximately 38,100 students⁵. There are several health providers.

2.1.4 According to the adopted Core Strategy, 30% of Haringey's population live in central and eastern areas in the borough which are amongst the 10% most deprived in England. Nevertheless, it is recognised that the borough has significant potential to deliver major growth and regenerate communities.

2.1.5 The borough retains concentrations of employment in industry, offices and warehousing and the economy is dominated by small businesses. The major sectors of employment in Haringey are public administration, education and health (28%) and distribution, hotels and restaurants (including retail) (26%); manufacturing and construction account for 12% of all employment⁶.

2.1.6 Strategic road and rail networks, controlled by the Mayor for London via Transport for London (TfL) and rail operators, traverse the borough providing direct links to central London. Haringey is very well connected, with strong links to the City, West End and Stansted Airport. There are eleven overland railway stations and 6 underground stations in the borough.

⁴ Haringey Borough Council (2009) A New Plan for Haringey 2011-2026 Haringey's Local Development Framework Core Strategy Preferred Options [online] available at: http://www.haringey.gov.uk/low_res_all.pdf (accessed 5 January 2010).

⁵ London Councils (no date) Haringey Statistical Profile [online] available at: <http://www.londoncouncils.gov.uk/londonlocalgovernment/londonmapandlinks/Haringeystatisticalprofile.htm?showpage=2> (accessed 5 January 2010).

⁶ Haringey Borough Council (2009) A New Plan for Haringey 2011-2026 Haringey's Local Development Framework Core Strategy Preferred Options [online] available at: http://www.haringey.gov.uk/low_res_all.pdf (accessed 5 January 2010).

2.2 NI188 Status

- 2.2.1 In Haringey's Local Area Agreement 2008-2011, one of their ten key challenges involves meeting the need for growth through sustainable development, tackling the effects of climate change: *'While we must build to meet need, we must do so in a way that meets the challenge of climate change'*⁷.
- 2.2.2 NI188 is one of 198 national indicators which local authorities and their partners are required to report against during the year as part of the Comprehensive Area Assessment, to monitor and demonstrate progress in adapting to climate change. The aim of NI188 is to embed the management of climate risks and opportunities across the local authority and partners services, plans and estates and to take appropriate adaptive actions where required⁸.

⁷ Haringey Borough Council (2008) Haringey Strategic Partnership Local Area Agreement 2008-2011 [online] available at: http://www.haringey.gov.uk/local_area_agreement_2008_-_2011_year_1_refresh.pdf (accessed 5 January 2010).

⁸ LRAP (2008) Adapting to climate change – Guidance notes for NI188, Available: <http://www.lga.gov.uk/lga/core/page.do?pagelid=1382860> (accessed: 5 January 2010)

3 Key messages from the LCLIP of the London Borough of Haringey

3.1 Introduction

- 3.1.1 This section highlights the most significant conclusions and messages from the Haringey LCLIP. These conclusions are based on the results of the interviews and media research conducted for this work and therefore represent an overview of the borough's key weather related vulnerabilities rather than an in depth scientific commentary and an exhaustive list of weather impacts and consequences. The main purpose of the LCLIP is to encourage local authorities to think about how past weather events have affected their borough, start engaging with their departments on these issues and moving forward, how they improve their internal reporting and ultimately begin to adapt to the changing climate.

3.2 Key messages

- 3.2.1 The results of the media review and interviews indicate that the borough is most often exposed to heavy rainfall, high winds and storm events. Heavy rainfall has particularly affected Larkspur Close (an area in Tottenham along the Moselle Brook, often prone to flooding), and the past five years has seen some significant storm events in the winter months. Other events, such as severe dry weather, low temperatures and snowfall, have also occurred during the study period and while their frequency is not as great, they are still significant (e.g. the heatwave of 2006 and the February snowfall of 2009).

- 3.2.2 A wide variety of impacts and consequences from weather events were observed and every service area interviewed had been affected in different ways:

- The borough was vulnerable to surface water flooding which regularly caused damage to homes, disruption to services and processes (e.g. schools closures, additional street cleansing), blocked and flooded drains (including one incident of raw sewage overflow onto a highway) and widespread traffic disruption.
- High winds have led to damage to buildings from falling trees, including the closure of a venue which hosts 280 public performances per year (affecting revenue to the council) and damage to Whittington Hospital.
- Extreme temperature events, both high and low, had significant consequences for the maintenance of the borough's road transport network (e.g. pot-holes from freeze-thaw and deformation of tarmac from heat), services (e.g. closure of schools), and heating and air-conditioning problems. High crime rates and noise levels (from open doors and windows) were reported in summer 2006, an impact only likely to increase with warmer summers. Changing weather patterns have also hindered maintenance schedules.

- 3.2.3 All service areas interviewed as part of this LCLIP, have been affected by weather events and responded to them in a variety of ways, including immediate and longer term responses. These include:

- Long term changes to weather patterns have been observed by operational staff. A longer warm season has affected growing patterns within the borough, for instance, the leafing season is difficult to predict and grass cutting has increased over the last eight years. Recreation Services were also forced to adjust their maintenance schedules due to warmer temperatures and a longer growing season.
- The Council's service areas experienced increasing vulnerability to surface water flooding and blocked and overflowing drains. However, efforts to mitigate this are being put in place (e.g. in the case of Larkspur Close, the Council recently put in a bid for funding for flood alleviation work).
- Clean-up efforts were held up when it was not clear who was responsible, for instance, when the Thames Water sewer overflowed onto the highway in Haringey, there were negotiations over who should clean it up and hence a delayed response.
- A pothole hotline and business support unit were set up to deal with 2,500 potholes during 2008 - 2009.
- An emergency call-out number for public reporting hazards (e.g. flooding) has been introduced.
- Emergency Planning has improved communications between departments, for instance, staff have key contacts and numbers to hand in times of emergency.

4 Key weather events

4.1 Introduction

4.1.1 Key weather events impacting Haringey during the last five years include heavy rain, severe dry weather (including heatwaves), high temperatures, low temperatures, high winds (including storms) and snowfall. These events and their significant characteristics are described below.

4.2 Heavy rain

4.2.1 Four significant events of heavy rainfall were reported to have directly impacted Haringey, in 2005, 2006, 2007 and 2009. On 20th July 2007, there was two hours of very heavy rain. While some heavy rain incidents came as early as July, most events happened between October and December.

4.3 High winds

4.3.1 In Haringey, significant storm events were reported for 1987, 2000, 2001, 2002, 2007 and 2008. In January 2007 (particularly over the 18th and 19th) the worst winds to hit Britain in seventeen years hit Haringey, where there were winds of up to 80mph. High winds were mostly recorded between the October and January winter months.

4.4 Severe dry weather and high temperatures

4.4.1 Three periods of high temperatures, severe dry weather and heatwaves were reported in the summer months of 2005, 2006 and 2009. A heatwave was reported in 2006.

4.5 Snowfall

4.5.1 Snowfall events impacted the borough during the winters of 2007 and 2009. In February 2009, the borough experienced foot-high drifts.

4.5.2 This research was conducted in early December 2009 and, although the media review does not include reports after this date, it is worth noting that several days of extreme snowfall also occurred in December 2009 and early January 2010.

4.6 Summary

4.6.1 The results from the interviews and media research show that the borough is most often exposed to heavy rainfall events, high winds and storm events. While some heavy rain incidents came as early as July, most events happened between October and December. High winds were mostly recorded between the October and January winter months.

4.6.2 Other events, such as severe dry weather and snowfall, have also occurred during the study period and, while their frequency is not as great, they are still significant.

5 Impacts and consequences

5.1 Introduction

5.1.1 This section describes in detail the impacts and consequences of key types of weather events.

5.1.2 *Impacts* refer to the immediate physical and / or systematic effects of a weather event such as surface water flooding, droughts, damage to infrastructure, disruption to processes, changes in lifestyle, etc. *Consequences* refer to what happened as a result of the weather events and their impacts and might include the relocation of staff and residents, traffic chaos and the cancellation of public transport services, and significant loss of business for town centre retailers. The LCLIP focuses primarily on how the London Borough of Haringey was affected by the impacts of weather events and how various services responded. Where appropriate, effects on other service delivery partners are also identified.

5.1.3 The information presented in this section is derived from the media review and interviews with service delivery staff from Haringey.

5.2 Heavy rain

5.2.1 The key impacts and consequences of heavy rain events in the borough are listed in the following table (Table 1).

Table 1: Impacts and consequences of heavy rain events

Impacts	Consequences
Surface Water Flooding	<ul style="list-style-type: none">• Significant surface water flooding occurred in July 2007, particularly in Larkspur Close which runs alongside the Moselle brook. Ground floor properties were affected with some people trapped in flats. Residents had to be evacuated.• Two hours of very heavy rain in July 2007 caused flooding to Highgate School, the Neighbourhood Resource Centre in Northumberland Park and Larkspur Sheltered Housing Scheme in Tottenham. Water was running off the road and into buildings.• Heavy rainfall in November 2006 led to blocked and flooded drains in Stroud Green, with particularly bad flooding in Marquis Road and Perth Road.
Damage to buildings / subsidence	<ul style="list-style-type: none">• Heavy rain caused leaks to roofs, windows and gulleys.
Changes to scheduled activities	<ul style="list-style-type: none">• A football match between Haringey Borough FC and Haringey Athletic FC in July 2005 was abandoned because Broadwater Farm pitch was unplayable due to the rain.

Impacts	Consequences
<p>Disruption to transport</p>	<ul style="list-style-type: none"> • Localised flooding causes traffic disruption and slowing down of services. In flooded areas, street cleansing must be suspended and refuse and recycling crews are unable to make collections. • Following two hours of heavy rainfall in July 2007, a sewer overflowed and raw sewage was washed onto the highway at St Ann's Junction and Seven Sisters Road. The drainage system was overwhelmed and there was standing water on several roads.

5.3 Severe dry weather and high temperatures

5.3.1 The key impacts and consequences of severe dry weather events and high temperatures in the borough are listed in the following table (Table 2).

Table 2: Severe dry weather and high temperatures impacts and consequences

Impacts	Consequences
<p>Heat related illness / discomfort / stress</p>	<ul style="list-style-type: none"> • Collection crews find it uncomfortable to be working during heatwaves as they need to maintain a minimum level of clothing cover for health & safety reasons. Staff exposure to prolonged heat conditions also means increased risk of sunstroke and more frequent breaks, leading to reduction in work schedules and absence from work. • Increased admission to hospitals and additional pressures on primary care. • Haringey residents suffered from high levels of summer smog and toxic particles during the June 2006 heatwave. Figures from a pollution monitoring centre in the park, in Priory Road, Hornsey, revealed that levels of ozone and toxic particles from vehicle fumes, known as PM10s, made breathing more difficult across the borough.
<p>Damage to infrastructure (roads, railways, communications networks, etc.)</p>	<ul style="list-style-type: none"> • Ground cracking from heat increases tree mortality and grassed areas can become parched and unsightly. This also affects maintenance schedules. • Tarmac melts due to extreme temperature and this causes additional maintenance and disruption to traffic.
<p>Changes in use of facilities / services</p>	<ul style="list-style-type: none"> • Ground cracking creates a health and safety risk, resulting in sport disruption and cancellations (e.g. athletics).

Impacts	Consequences
<p>Over-heating in buildings</p>	<ul style="list-style-type: none"> • The number of complaints about noisy neighbours increased substantially over the summer months of 2006. In July, this went up to more than 600, a rise of about 20 per cent. Weekends, especially Saturday nights, see the most complaints. In an average month, the Council receives about 490 noise complaints - or 16 a day. • In the first two weeks of May 2008, more than thirty homes in Wood Green, Tottenham, Crouch End and Highgate, were burgled by opportunists taking advantage of open doors and windows. • Heatwaves cause concerns about the health of some staff members working in overheated buildings (e.g. the Civic Centre overheated during the 2006 heatwave). There are also impacts on children at schools and the elderly and vulnerable.

5.4 High winds

5.4.1 The key impacts and consequences of high wind events in the borough are listed in the following table (Table 3).

Table 3: High winds impacts and consequences

Impacts	Consequences
<p>Damage to vegetation</p>	<ul style="list-style-type: none"> • In January 2007, 87 trees fell in Haringey. One 80ft tree fell and destroyed 8 cars in Highgate. • Incidents of fallen trees and branches create a potential hazard. • In January 2007, firefighters were called to Ridgeway Gardens (Highgate) after a tree was blown across the van and seven other cars in a private car park. A 55-year-old man was taken to Whittington Hospital suffering from a broken hip and other minor injuries.
<p>Damage to buildings / subsidence</p>	<ul style="list-style-type: none"> • Fallen trees (from high wind) led to minor damage to buildings, dislodged signage etc. • In January 2007, an accommodation block for doctors (Whittington Hospital, Archway), was hit by a tree that crashed through a top-floor window and struck a water tap, causing the building to flood. • The high winds and stormy weather of January 2007 caused masonry, concrete and the cross from the roof of a converted church to crash to the ground, rendering the building unsafe. The centre (which has 2,000 visitors per week) hosts 280 public performances a year and it relies on this revenue to survive. All upcoming shows were cancelled.

Impacts	Consequences
Disruption to transport	<ul style="list-style-type: none"> In January 2007, high winds led to 114 report incidents (e.g. fallen tree, branches, some cars hit by trees etc.). Road closures. Northern Line temporarily suspended during the afternoon between High Barnet and Finchley Central because of debris blown onto the tracks.
Leaves blown off trees	<ul style="list-style-type: none"> In 2008, a very significant proportion of the leaves fell within two days owing to weather conditions, which meant that it was harder to keep the streets clean for several days and more complaints were received from residents about potential slip hazards where wet leaves had gathered.
Disruption to processes	<ul style="list-style-type: none"> A couple of years ago, the water levels rose (as a result of heavy rainfall) and flowed into an electricity sub-station in Cumberland Road car park, cutting power, affecting about 400 council staff. Staff were moved to other buildings.

5.5 Snowfall

5.5.1 The key impacts and consequences of snowfall events in the borough are listed in the following table (Table 5).

Table 5: Snowfall impacts and consequences

Impacts	Consequences
Disruption to transport	<ul style="list-style-type: none"> Widespread disruption to transport services occurred in February 2007 due to several inches of snowfall. Icy conditions persisted for several days. Staff found it difficult to get into work and extra salt and sand was distributed. There was suspension of some services during snowfalls of Feb 2007 and 2009. Despite gritting, heavy falls can still make roads impassable and pavements unsafe for collection crews to be carrying or wheeling waste containers. Freeze-thaw action led to numerous potholes. Some buses crashed (e.g. the number 73). In February 2009 there was no bus service for a day and the underground was running slower. Overground trains came to a halt. In February 2009, as drivers tried to negotiate the slippery roads, they were surrounded by increasingly aggressive youths throwing snowballs at them and causing them to swerve.
Disruption to processes	<ul style="list-style-type: none"> Most Haringey schools closed on a snow day in February 2009.

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Impacts	Consequences
Changes in use of facilities / services	<ul style="list-style-type: none">• In February 2009, the entrances and exits of buildings were blocked. This affected staff getting to work, the unlocking of buildings and temperature controls.• Cold weather led to heating problems, particularly affecting vulnerable and old people.• The Grange, Haven and Woodside day centres closed.

6 Service areas affected and their response

6.1 Introduction

6.1.1 The consequences of key weather events are experienced across council service areas. The purpose of this section of the LCLIP is to highlight those services which were found to be particularly affected by weather events and to describe in greater detail how they have responded. Information has been drawn from both the media review and interviews with council personnel. In light of time constraints and the availability of council staff the picture presented in this section should not be considered exhaustive. Rather it begins to paint a broad picture of the different weather events and their impacts and consequences for Haringey's services and their vulnerability.

6.1.2 Officers from Haringey that were interviewed work in the following service areas (the full list of interviews has been included in Appendix 1):

- Sustainable Transport
- Temporary Accommodation
- Emergency Planning
- Recreation Services
- Environmental Resources
- Facilities Management

6.2 Service areas affected and responses

Sustainable Transport

6.2.1 Sustainable Transport is the name given to the whole transport service. The service includes three areas:

- Traffic Management - the coordination of street works and closures, producing roadmaps and managing the traffic IT systems.
- Transport Policy and Projects - develops the transport strategies, encourages road safety and traffic calming measures, and plans things such as cycle routes.
- Highways Asset Management - looks after the planned and reactive maintenance of Haringey roads, along with things such as clearing gullies and looking after street lighting.

6.2.2 The events that have the most significant effects on Sustainable Transport are heatwaves and extreme low temperatures (including snow and ice). During periods of high temperature, tarmac on the roads can melt, causing additional maintenance and possible disruption to traffic. As shown in Figure 1, this can get particularly bad at bus stops. Although Transport for London (TfL) has in the past provided additional funding to improve bus stops, it is the responsibility of the Sustainable Transport department to maintain the roads.

- 6.2.3 Roads and highways are also badly affected by extreme low temperatures, in particular, exposure to snow and ice. In Haringey, over one year (2008/2009), Sustainable Transport and various sub contractors dealt with 2,500 potholes. A hotline and business support unit was set up for people to report potholes, which would be repaired within five days of being reported. The department was well prepared to deal with the potholes and only had to draft in one additional member of staff to meet the programme.
- 6.2.4 The Sustainable Transport and Waste departments are also affected by trees shedding their leaves, which can get washed into gulleys and cause localised flooding. However, in responding to an event, the Council is well prepared with an emergency call-out phone number and an inspector on hand to deal with reported incidents.
- 6.2.5 Given that road maintenance is continuous, the Sustainable Transport team said they were prepared for events of extreme weather and respond well overall, although on occasion, extra staff will be drafted in and resources diverted accordingly (e.g. for the pothole programme). The London Councils Programme is also in place to communicate to councils the 'winter regime', including information on gritting or salt spraying roads and explaining which department is responsible for what. The Sustainable Transport department must also work closely with other departments and partner organisations (e.g. with TfL in responding to the snow event in February 2009).

Figure 1: Damaged bus stop in Haringey⁹



Temporary Accommodation

- 6.2.6 Haringey's Temporary Accommodation Team provides a housing management service to homeless households living in private sector leased accommodation and council owned hostels.
- 6.2.7 The events that have the most significant effects on the temporary accommodation sector are periods of extreme high temperatures (e.g. heatwaves) and periods of extreme low temperatures (e.g. snowfall, icy conditions etc.). During the snow in February of 2009, many homes had access and heating problems, particularly affecting vulnerable and elderly people.

⁹ SOURCE: London Borough of Haringey.

However, the department had contingency plans in place and tenants that called in for help (around 28 – 45 people) were dealt with quickly.

Emergency Planning

- 6.2.8 The Emergency Planning department has a number of responsibilities, including:
- Ensuring the Council and partners are prepared to respond to an emergency affecting the borough;
 - Ensuring that council services have business continuity plans to maintain essential services during and after disruptive events; and
 - Promoting resilience and preparedness in the community.
- 6.2.9 The Council has an Emergency Plan which guides its response, based on the Civil Contingencies Act requirements and longstanding arrangements between statutory agencies about roles and responsibilities in emergencies.
- 6.2.10 For all extreme weather events, the Emergency Planning Team coordinates the response of the Council to the event. In most cases, this is limited to managing information (i.e. gathering information and reporting) but in some cases, more operational coordination is required. Many of the events that Emergency Planning is involved in affect multiple departments. For instance, Police and Fire services respond to a large number of emergency calls around high winds, heavy rain and flooding, while the Ambulance service often experiences an increased number of injuries incurred from people slipping on ice following significant snowfall events.
- 6.2.11 Over the past five years, Emergency Planning has been mostly impacted by high winds, heavy rain and flooding, heavy snow and extreme high temperatures (e.g. the heatwave in 2006). The Emergency Planning department is particularly important following snow events, as it co-ordinates the response of all services through the Business Continuity Plan. With this and the appropriate resources (e.g. supplies of grit, enough staff etc) in place, it was felt that the Borough responded well to the snow event in February 2009, where the main priorities were to a) clear away snow and grit and b) keep services running. The Emergency Planning and Business Continuity Manager also emphasised that having the contact numbers of departmental managers to hand in such an event, was imperative to a speedy and co-ordinated response. Following the event, Emergency Planning reviewed the incident and created an Action Plan, which re-confirmed existing policy.
- 6.2.12 High winds have also impacted Emergency Planning, Police and Fire services, particularly following an incident in January 2007 which led to 114 reported incidents (anything from fallen branches to cars hit by trees), costing the department £12,000 and taking one week to clear. To deal with the increase in reported incidents, each case was prioritised (high, medium and low) and dealt with, in order, according to its severity. It was felt that the response was effective, with flexible contractors and additional staff drafted in to deal with the increased workload.
- 6.2.13 Heavy rainfall has also affected the Borough's Emergency Planning team. In July 2007, there were two significant flooding events, one on the 7th when ground floor flats in Larkspur Close, Tottenham, were flooded (leaving some residents trapped) and another on the 20th, where two hours of heavy rainfall led to flooding at Highgate School, The Neighbourhood Resource Centre in Northumberland Park and the Larkspur Sheltered Housing Scheme. A sewer also overflowed onto the highway at St Ann's Junction and Seven Sisters Road.

- 6.2.14 Council departments responded well to these events, although there was an issue between Thames Water and the Council over who was responsible for cleaning up the sewage which had overflowed onto the highway from a Thames Water sewer, delaying the clean-up effort by several hours. In other cases, flooding in Haringey has led the Council to think more about carrying out flood alleviation work, for example, a bid was recently submitted to carry out work on flood alleviation around Larkspur Close – an area prone to flooding.
- 6.2.15 Overall, it was felt that Emergency Planning had responded effectively to extreme weather events over the past five years, as none of these have been 'overwhelming'. However, the Emergency Planning and Business Continuity Manager emphasised that resources must be in place to deal with the worst case scenarios. However, it was also emphasised that: *"it is [also] about mainstreaming climate change adaptation into people's thinking"*.

Recreation Services

- 6.2.16 Recreation Services includes grounds maintenance for most of Haringey's green spaces i.e. parks, nature reserves, sports pitches, allotments, cemeteries etc. Recreation Services also acts as the grounds maintenance provider for Haringey's housing stock administered by Homes for Haringey. The department also acts as the provider for land owning services within the borough with regards to tree management.
- 6.2.17 High winds appear to have had the greatest impact on this service area, particularly between 2007 and 2009 where several incidents were reported (e.g. instances of fallen trees / branches etc.) During periods of high wind, work schedules for clients (e.g. Homes for Haringey) could be disrupted and in some cases, seasonal jobs fall behind (e.g. shrub pruning extended to the end of April). It was also highlighted that recent spring weather has been warm and wet, creating perfect conditions for grass growth. This has resulted in exponential grass growth, requiring more maintenance and exacerbating resource demand at one particular time in the year (usually April to May).
- 6.2.18 It is also felt that the gradual effect of climate change has impacted on longer growing seasons and milder winters from December to February. In addition, grass cutting, which was traditionally carried out from March onwards, now happens much earlier. Grass cutting has increased over the last eight years and the borough schedules have increased from seventeen cuts per annum to twenty-two, therefore increasing costs. Also, due to increased summer growth, Recreation Services now carries out a corrective pruning of shrubs, increasing costs to its clients.
- 6.2.19 Heatwaves and staff being exposed to prolonged high temperatures also impact the department, as the risk of sun stroke can be high and workers need more breaks. However, the department has actually reduced absence from work due to hot weather through effective management, health and safety forums, and staff awareness.
- 6.2.20 Hot weather can also lead to the ground cracking creating a health and safety risk and often leading to sport disruption and/or cancellations. This also affects tree mortality and in general, grassed areas can appear parched and become unsightly, slightly hindering maintenance schedules.
- 6.2.21 The department felt that it had responded well to extreme weather events, realigning schedules and/or increasing staff levels at appropriate times (e.g. in an emergency or predictable long-term situations). Being able to call upon extra staff, carry out training awareness and make

agreements with clients and contractors, helps the Recreation Services team to be well prepared for extreme weather events.

Environmental Resources

- 6.2.22 Environmental Resources has a wide remit, covering energy efficiency, water conservation, sustainable food and waste reduction for homes and businesses. However, the main service-delivery arm is the management of the refuse, recycling and street cleansing services. Refuse and street cleansing services are operated by the Council's contractor, Haringey Enterprise, but the recycling collection services are undertaken by an in-house operation that falls within the remit of the Environmental Resources department. Refuse and recycling are collected from around 100,000 households at least once a week, as well as schools, community centres and council buildings.
- 6.2.23 Snowfall seems to have had the biggest impact on the Environmental Resources department, which is responsible for gritting roads and pavements to counteract the effects of snow. This requires weather forecasts and warnings to be observed when snowfall is likely, and where possible, for gritting to be carried out in advance of expected snowfalls to minimise the impact.
- 6.2.24 In January 2010 there was a national shortage of grit, owing to continued extreme cold weather and heavy snowfalls across the UK. The shortage led to the government taking control of salt supplies, with each local authority then receiving only enough salt to maintain gritting activities on its 'resilience network' of roads. This network only includes the carriageways of main roads, so no residential roads or pavements could be gritted despite the icy conditions. Snow and ice in these locations remained until the weather conditions improved and there was a thaw.
- 6.2.25 During the snowfalls of December 2009 and January 2010, ongoing cold temperatures caused ice to form and remain on roads and pavements across Haringey. These conditions severely disrupted refuse, recycling and street cleansing services. This problem was exacerbated as this was taking place over the Christmas and New Year period, when schedules are normally disrupted because of the bank holidays.
- 6.2.26 Although gritting can reduce the effects of snowfall, heavy falls can still make roads impassable and pavements unsafe for collection crews to be carrying or wheeling waste containers (particularly in hilly areas like Highgate). Normal street cleansing services are also usually suspended when there has been snowfall, in order for the sweepers to be redeployed to snow clearance and additional gritting duties. During the snowfalls of February 2007 (one day) and February 2009 (several days), there were suspensions of services (e.g. rubbish collections and street sweeping) and collection staff were re-deployed to assist in snow clearance. Haringey Council staff also identified vulnerable people in the community and made arrangements to support them, for instance, some of the members of the Recycling Service supported essential council services that were having difficulty operating services such as 'meals on wheels'.
- 6.2.27 Once the roads became passable again, catch-up services had to be run to get the schedule back on track. This is essential to get residents back to work and allow council services to continue functioning. In the case of the refuse, recycling and street cleansing services, getting the service up and running again was particularly important; these services are some of the most visible the Council provides, so there is pressure to make collections that have had to be missed, and to provide information about how these catch-ups will work to avoid impacts on the Council's reputation.

- 6.2.28 Environmental Resources is also responsible for leaf clearance during the autumn, which is normally incorporated into standard street cleansing services, with an additional leafing crew to support. The leafing season is difficult to predict and the time and rate at which the trees drop their leaves can vary hugely. In 2008, a very significant proportion of the leaves fell within two days owing to weather conditions, which meant that it was harder to keep the streets clean for a few days and more complaints were received from residents about potential slip hazards where wet leaves had gathered.
- 6.2.29 The services have not been impacted significantly by heat, but the collection crews can find it uncomfortable working during heatwaves as they need to maintain a minimum level of clothing cover for health and safety reasons. Refuse and recycling collections normally start between 6-7am to avoid the worst of the traffic, which means that the crews can normally finish and get back to their depot before the hottest part of the day. All crews are encouraged to carry water with them in their vehicle to keep hydrated.
- 6.2.30 Refuse, recycling and street cleansing crews will often be exposed to very cold conditions, as they start work early in the morning (or work into the evening) throughout the year. They are therefore issued with a wide array of clothing and personal protective equipment for both warmth and safety. There can also be problems with vehicles starting during very cold weather, particularly those that are parked out of doors overnight (as at Ashley Road depot). This can impact on service reliability.
- 6.2.31 Fortunately, there have not been any problems with flooding at the depots or Reuse and Recycling Centres. However, localised flooding does cause traffic disruption that will slow down services (see Figure 2), and in some places may prevent refuse and recycling crews from being able to make collections; street cleaning obviously has to be suspended in flooded areas. The refuse, recycling and street cleansing crews can wear full outfits of waterproof clothing during rainy weather, but the heavier the rain the harder their work will become.
- 6.2.32 According to the Environmental Resources department, in terms of preparedness for these sorts of events, the procedures for dealing with snowfalls are well-established, and the Council is set up to receive and deal with weather warnings from the Met Office.

Figure 2: Surface water flooding in Haringey, November 2009¹⁰



¹⁰ SOURCE: London Borough of Haringey.

Facilities Management

- 6.2.33 The Facilities Management department provides a maintenance and compliance service to buildings within the Corporate Portfolio, namely offices, libraries and museums, care homes, day centres, depots and park buildings. Facilities Management also maintains the Council's in-house cleaning service and provides night patrols and alarm activation call outs to council offices.
- 6.2.34 The main events to affect the Facilities Management department are high winds (causing damage to buildings), heavy rain (causing leaks to roofs and windows etc.), heavy snow (particularly in February 2009 when there was widespread disruption to transport services and staff being unable to get to work) and the 2006 heatwave, during which, the Civic Centre (council offices) over-heated. This not only affected people's ability to work but also raised questions about the temperature threshold at which it was deemed unacceptable for people to work in. In response, Facilities Management installed mobile air-conditioning units in Apex House to cool the building down. The 2006 heatwave also put additional pressures on primary care due to increased admission to hospitals. Following the event, the NHS launched the Heatwave Plan, which sends heatwave alerts to the public, and daily maximums and minimums are translated into a series of actions for dealing with the heat.
- 6.2.35 Although none of the events over the past five years were deemed 'overwhelming', Facilities Management felt they were quick to respond to any extreme weather events (e.g. rectifying building faults, ensuring that salt is distributed to appropriate points and providing portable fans to reduce office temperatures). It was also felt that past experience and empathy for staff influenced the department's quick and effective response to the events.

7 Conclusions and suggested next steps

7.1.1 This report provides a straightforward account of the main consequences of weather events to which the borough is currently exposed. It also provides an indication of local preparedness amongst the service areas for the delivery of their services. The LCLIP emphasises the need to consider the effects of weather now and in the recent past. Consequently, when the findings of this exercise are combined with future projections of climate change, it can help indicate potential areas of increasing vulnerability and thus identify where resources should be allocated to address these vulnerabilities.

7.1.2 Based on the information collected for this LCLIP, the main conclusions and suggested next steps for the borough are as follows:

- The borough is regularly affected by surface water flooding following storms. Haringey could consider undertaking a Surface Water Management Plan as a first step to address this issue. In addition, the Borough should encourage flood plans and resilience measures (e.g. flood proofing buildings, etc) across services and buildings that are regularly affected such as schools.
- Heatwaves could seriously affect residents of council-owned or managed properties and schools are often not designed for higher temperatures. The Council could look at available options to retrofit cooling measures in these buildings (e.g. increased ventilation). However, these may be expensive or take time to implement so, as an initial measure, the Council, possibly in partnership with the PCT, could undertake a campaign to alert residents (targeting the most vulnerable e.g. the elderly or ill) of the dangers of higher temperatures and appropriate mitigation measures. This could be done in conjunction with the NHS Heatwave Plan.
- More generally, warmer climate may affect council workers working outside and may also affect school children. An awareness campaign could also target these groups.
- Both very high and very low temperatures affect road surfaces causing, for instance, melting of tarmac and pot-holes. The Council could consider using heat resistant tarmac when resurfacing the roads managed by them.
- Extremely cold winters such as 2009-10, are not frequent but can have serious consequences for vulnerable residents. The Council should ensure that boilers are regularly maintained in the buildings they own or manage and in the event of a snowfall, access to buildings is maintained.
- There is a tension between preparedness for infrequent events and the availability of resources. The Council could consider strategically what the most appropriate level of preparedness is for high consequence but low probability events (such as heavy snowfalls).
- Emergency Planning could continue to work to ensure that all other departments are able to respond appropriately and maintain business continuity during extreme weather events. The Council and Emergency Planning could consider undertaking regular exercises with different departments.
- The Council could consider creating a standard protocol for recording the impacts of weather events on their services and buildings. This information should be used to improve preparedness and better targeting of resources. It could also be used to raise awareness of the potential consequences of climate change.

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- Finally, the Council could consider engaging with those service areas or departments that have not been involved in the LCLIP process. This could be done by circulating the main findings by email to heads of service, prepare a poster or lunch-time seminar in the Council offices.

Appendix 1: Methodology and Approach

Introduction

Our methodology followed the UKCIP LCLIP guidance and methodology¹¹ and included the following tasks:

- A London-wide and local newspaper media review of weather events in the last five years (Jan 2005- Dec 2010)
- Interviews with key local authority service providers
- Creation of a database of weather events in the last five years and their impacts and consequences
- Analysis of weather events, impacts and consequences in the last five years
- Preparation of a final LCLIP report (this report)

At the beginning of the project, the London Borough of Haringey provided a contact officer to assist Scott Wilson in the undertaking of the LCLIP.

Media review

A review of newspapers was undertaken to identify examples of severe weather events and where possible the consequences of these events. The purpose of this information is to build a picture of the type of weather events that have affected a London borough during the recent past, and how local authorities currently deal with the effects of severe weather events. The media review was conducted in two stages each on a different geographical scale:

- London wide
- Borough specific

London-wide media review

The London-wide review utilised research conducted to inform the London-wide climate impacts profile¹², which was published in October 2009, and included a spreadsheet containing an analysis of the media articles over the period 1998–2008, which identified reported weather events and associated impacts and consequences on sectors and organisations. As part of the Haringey LCLIP, this information was then supplemented to bring it up to date (to November 2009). The update focussed on the following media sources:

- The Evening Standard
- The Guardian, and
- The Times

¹¹ UKCIP, 2009. A local climate change impacts profile: how to do an LCLIP. UKCIP, Oxford

¹² Standley, S., Miller, K., Okamura, S., Wynn, D., Greenhalgh, S. and Horrocks, L. (2009). Wild weather warning: a London climate impacts profile. Greater London Authority, London, UK.

Researchers followed a protocol to ensure that all the relevant weather events were captured. The search focused on a list of key words through the application of an agreed 'Search Term Checklist'. All information was compiled into a spreadsheet based on the UKCIP template. Weather events and consequences within the spreadsheet were catalogued by London borough. Table 5 below shows the fields included in the UKCIP database.

Table 5: UKCIP database fields

no.
1. Source
2. Headline
3. Date of the story dd/mm/yy
4. Summary of news story
5. Date of the weather event dd/mm/yy
6. Weather type (choose from list)
7. Weather detail (if stated)
Impact No.
8. Impact (choose from list)
Conseq. No.
9. Consequence detail
10. Location
10.a. London boroughs
11. Responsible unit
12. 2nd responsible unit
13. Other responsible agencies
14. Significance indicator (choose from list)
Cost
Reputation
Staff time / Resource
Disruption to service or operations
Notes

Borough Specific Review

The same media review methodology was repeated on a local scale, this time searching all extreme weather events in the last five years reported in the Haringey Independent, which is accessible online. This data collected was added to a borough database that included borough-relevant findings from the London-wide media review.

Stakeholder Interviews

The availability of key local authority and other stakeholders to be interviewed was identified as part of the 'critical path' for this project. Therefore the setting up of interviews was prioritised and the following steps were followed:

- An initial list of potential weather events, consequences and responsible council or external departments was prepared for communication with local authority representatives. It was stressed that the list is not exhaustive and in addition each local authority will have slightly different services, etc. The aim was to enable the local authority liaison officers to identify and contact the relevant people. See Table 7 below
- The local authority liaison officers were contacted at the beginning of the process (9 November) to request that they start setting up meetings and interviews.
- The Scott Wilson team took a flexible approach to the interviews: face to face interviews were preferred but telephone and email were considered as a last resort depending on availability of key stakeholders.

Table 7: Examples of potential weather events, consequences, and responsible agencies

Weather Events	Possible Consequences	Responsible Agency /Agencies (Council or External Service / Department)
<ul style="list-style-type: none"> • Heavy Rain • Flooding • Extreme Cold • Snow / Heavy Snow • Heatwaves • Drought • Prolonged periods of warm / cold weather • High winds • Storms 	<ul style="list-style-type: none"> • School Closures • Damage to Council Property • Impacts on transport infrastructure (e.g. icy roads, flooded roads, cracked roads, train cancellations) • Impacts on local water bodies • Damage to trees • Increase in heat/cold related illness and fatalities • Low air quality/ increased pollution • Changes in public behaviour inflicting pressures on certain public services 	<ul style="list-style-type: none"> • Corporate Communications • Emergency Planning Committee • Schools / Education services • Social Services (vulnerable groups such as the elderly, homeless etc.) • Transport Services (including highways) • Operational Services (e.g. road gritting / drains) • Emergency Planning • Council Buildings / Management and maintenance (including council housing) • Environmental Services • Financial , Risk Management and Insurance services • Park Services • Health services and PCT • Council representatives from any relevant forums or committees that may be able to provide useful inputs e.g. Local Resilience forums or Climate Change Adaptation Groups

Stakeholder interviews were arranged by a representative from Haringey. Present at all interviews were the project member from Scott Wilson and the 'Better Haringey Project Officer'.

The following stakeholders were interviewed in the London Borough of Haringey:

- Highways Maintenance Team Leader, Sustainable Transport
- Arboriculture Officer, Recreation Services
- Emergency Planning and Business Continuity Manager

- Operations Manager, Temporary Accommodation
- Highways Asset Group Manager, Sustainable Transport
- Project Engineer, Sustainable Transport
- Head of Facilities Management
- Communications and Engagement Manager, Environmental Resources
- Acting Operations Manager, Recreation Services

The interviews were conducted on 2nd and 4th December 2009 at the Haringey Council offices.

Interview questionnaire

A blank interview questionnaire is included in Appendix 2. It includes questions on:

- Weather events (including extreme weather events and also low impact but repeated events)
- Consequences
- Response
- Preparedness, and
- Additional information and comments

The questionnaire was sent to local authority contacts together with a covering letter explaining the LCLIP project in advance of the interviews. It was emphasised that in order to make the most of the interviews, interviewees should look at the questionnaire and prepare their responses before the interview took place.

In order to aid analysis, the findings of the interviews were added to the borough database containing the media review.

Analysis

A standard methodology was developed to help the research team systematically analyse data captured within the LCLIP database. This consisted of the following steps:

- 1) Gain familiarity with the database and its operations through a preliminary training session
- 2) Categorise types of weather events according to a pre-defined terminology
- 3) Use the summary worksheet to sort data according to different event characteristics (i.e. date, weather type, impact, location and responsible unit or agency) in order to identify:
 - Event frequency, impacts and the response required by different service areas
 - Trends associated weather events, e.g. seasonal variation, locational impacts
 - Range of consequences
- 4) Review any remarks provided in the notes section
- 5) Distil information into key messages

Limitations and Data Gaps

There are several minor limitations and data gaps that can be mentioned. Due to time constraints it was not possible to interview all members of staff from the Council that were approached. Although it was recommended in our covering letter that was sent to council staff, not all interviewees filled in their questionnaire in advance so there may be some limitations regarding the accuracy and prevalence of figures as well as all potential effects of weather events. In addition, some members of staff who were interviewed had only been with the Council for short periods of time so were not able to discuss events which occurred up to five years ago.

Appendix 2: Interview Questionnaire

Q1. Please can you describe briefly your area of service and the key roles this area covers?

Weather events (includes extreme weather events and also low impact but repeated events)

Q2. Please can you provide a list of weather events that have affected **your service area** in the last **five years** or particularly significant events before then (e.g. 2003 heatwave)? (Please provide a list of events plus any additional details you can think of, e.g., date, type of weather, duration, etc)

Consequences

Q3. For each of the events listed above, please can you provide details of the impacts (e.g. flooding, ice on roads, blocked sewers) and consequences (staff hours, costs, effects on service delivery, reputation for your area of service)?

(please provide as much information as possible including figures if available)

Response

Q4. What was your (service area's) response to each of the events?

Q5. What influenced your response to the events, e.g. past responses, policies, legislation or advice?

Q6. Was your department/ service area/ organisation able to respond effectively? If not, why (e.g. lack of information, resources, planning, communication, never experienced a similar event, etc)

Q7. Do you know if any other agencies or departments were affected by the event or involved in the response?

Preparedness

Q8. Have you undertaken any preparation or adaptation measures in case similar events occur again (e.g. extra training, more equipment, meetings with other service areas, extra staff? Please list and provide brief description).

Additional information and comments

Q9. Please provide any additional relevant information or comments (for instance, what type of events are most likely to affect your work and why, etc)