

UK Local Authorities

Local Climate Impact Profiles: getting started on adaptation - UK Local Authorities

Tuesday 19th January 2010



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UK Climate Impacts Programme



UKCIP

The UK Climate Impacts Programme (UKCIP)

"helps organisations to assess how they might be affected by climate change, so that they can prepare for its impacts".

- Set up by UK Government in 1997
- Funded primarily by Defra
- Based at Environmental Change Institute, University of Oxford

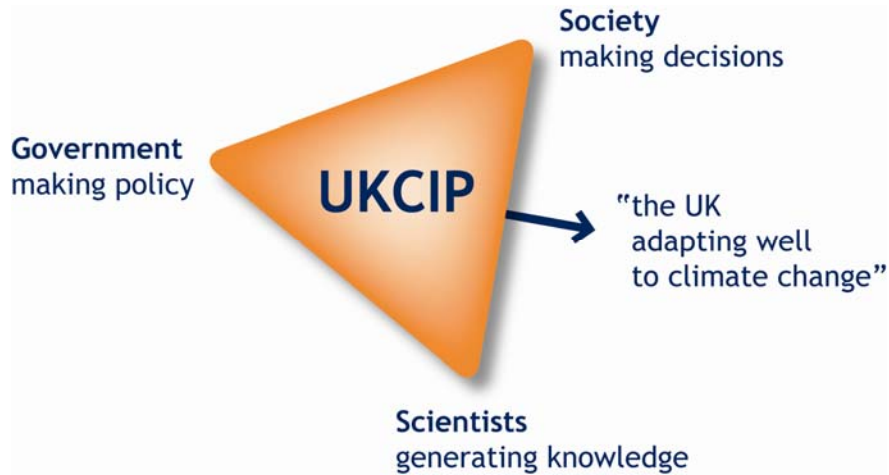
UKCIP:

- Establishes stakeholder-led projects and partnerships (regions, sectors, organisations)
- Provides common tools and datasets, guidance and advice
- Builds capacity
- Communicates and disseminates findings



All for free! (providing the learning can be shared)

UKCIP as a boundary organisation



UKCIP Tools to support adaptation



LCLIP: Overall Concept and Benefits

- Current Climate Change Scenarios: UKCP09: **limits**
- Vulnerability Studies: **limits**
- Local Authority Engagement: **challenge**
- **LCLIP: opportunity (NI 188)**



Sheffield 2007

Barnsley 2007

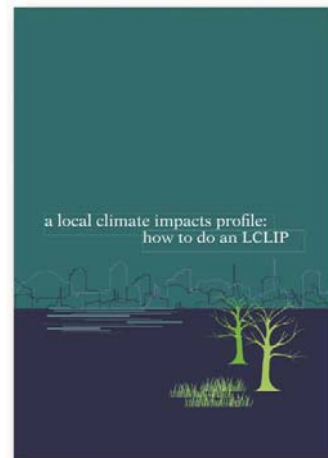
Local Climate Impact Profile

Use knowledge of recent, local, weather events to:

Raise local awareness (amongst officers and members)

Inform the local agenda for addressing climate change impacts

Explore science-based projections for future weather and climate in the locality



LCLIPs in the UK

100 plus LCLIPs, click on this map on UKCIP website to review case study examples

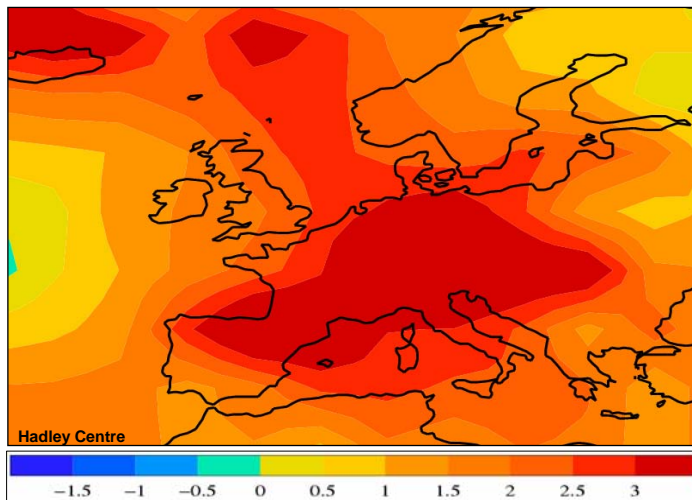
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The LCLIP principle applied

recent extreme event: the heat wave in Europe of 2003

stage 1



Europe:

30,000 deaths attributed to the heat wave

Forest fires and crop damage seriously impacted economy

Economic losses in excess of £7.5bn

England (3-14/8/03):

Excess mortality

All ages: 2091(17%)

>75: 1781(23%)

Emergency hospital admissions (>75)

1490 (6%)

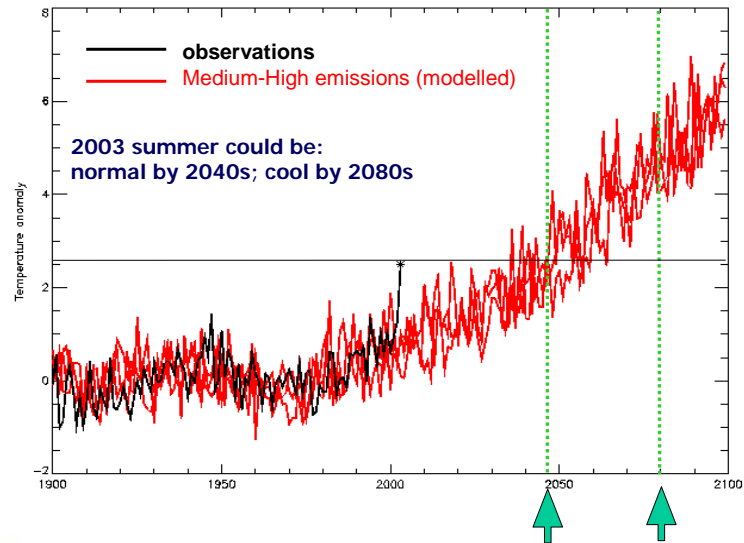


The LCLIP principle applied

stage 2

Relate recent event to projections for future climate

European
summer
temperatures



Source: Peter Stott, Hadley Centre

An LCLIP can deliver

Based on knowledge of recent, local, weather events to deliver:

- A schedule of **consequences** and responsible **agencies** and perceived **significance**
- Analysis of important variables, (impact type, weather type, location, responsible agency, perceived significance – all derived from spreadsheet)
- Discussion & comment on significance of consequence, performance and preparedness (based on spreadsheet and interviews)



Electronic LCLIP entry screens

The screenshot displays two parts of the LCLIP system. The top part is a data table with columns for 'New news story' and 'New incident'. The bottom part is a detailed view of a 'New news story' entry, showing fields for source, headline, date, and incident description.

New news story		New incident						
1. no	2. Source	3. Headline	4. Date of the story dd/mm/yy	5. Headline	6. no	7. Incident as described in news story	8. Date of the incident dd/mm/yy	9. no
1	telegraph		08/08/09	At 3.30 on the 8th of Aug	1.1	Swimming pool closed	08/08/09	1.1.1
2	telegraph		08/08/09	At 3.30 on the 8th of Aug	1.1	Swimming pool closed	08/08/09	1.1.1
3	telegraph		08/08/09	At 3.30 on the 8th of Aug	1.1	Swimming pool closed	08/08/09	1.1.1
4	telegraph		08/08/09	At 3.30 on the 8th of Aug	1.1	Swimming pool closed	08/08/09	1.1.1
5	telegraph		08/08/09	At 3.30 on the 8th of Aug	1.1	Swimming pool closed	08/08/09	1.1.1
6	telegraph		08/08/09	At 3.30 on the 8th of Aug	1.1	Swimming pool closed	08/08/09	1.1.1
7	telegraph		08/08/09	At 3.30 on the 8th of Aug	1.1	Swimming pool closed	08/08/09	1.1.1
8	telegraph		08/08/09	At 3.30 on the 8th of Aug	1.1	Swimming pool closed	08/08/09	1.1.1
9	telegraph		08/08/09	At 3.30 on the 8th of Aug	1.1	Swimming pool closed	08/08/09	1.1.1



Analysis and interpretation

- More analysis derived from spreadsheet
 - o Location
 - o Impact type
 - o Weather type
 - o Which agency (scale of reporting – LA, directorate, service)
 - o Analysis of the significance of the consequence
 - o Judgements on performance and preparedness
- Interpretation of material – requires officer experience/input

Subject for further workshops/



LCLIP outputs

Preparing messages for:

- Cabinet
- Directorates
- Departments
- LSP
- Members
- Councillors

In the form of:

- Report
- Briefing notes
- Presentations – different audiences
- In-house journal
- Websites

Monitoring

Having gathered the info on events / impacts on services

- How is the info to be updated?
- What is the value of continuing to monitor?
- Can more data routinely recorded as part of current activity be considered relevant?
(Service records – which give info on **trends** as well as **events**.)

Components of current vulnerability

Review of **preparedness**

Assessment of **adaptive capacity** – ability to cope

- Staff
- Money
- Other resource
- Resilience of buildings
- Resilience of infrastructure

Sensitivity – of service areas

Exposure – to weather



Oxfordshire results

Local media reports

- looked at 260 incidents over 10 years
- flooding most frequent
- fewer heat-waves but consequences many and serious
- the combination of drought/flooding – subsidence, serious and costly
- estimation of the costs of third party insurance claims, emergency provision and road repairs = an additional unplanned for cost to the County Council of £16m.
- Identified some opportunities
 - o Increases in tourism
 - o Agricultural opportunities



Heat-wave in Oxfordshire in July 2006

**Weather: 34.8°C max temp in July (cf 1961-90 mean max for July of 21.7°C)
44.2mm rainfall in two hours 22nd July (total rainfall for July 06, 87.3mm)
lightning and storms.**

Some impacts and consequences

Increased attendance at outdoor attractions

Use of Hinksey pool up by a third on previous year.

High internal temperatures

Six schools closed for half, one or two days. (970 children affected)

Heat stress

Road surfaces melting. Gritters sent out to treat 37 heat damaged roads

Flash Floods

Roads flooded causing city centre congestions



2006 Headline messages - Road Damage

**High temperatures (34.8°C on 19th July)
create 'sticky' conditions on more than 37
roads over two day period.**

Consequences:

- Heat damage
- Road closures

Responses

- diversions
- Gritting
- 'Slippery road'

Cost

- estimates £3.6m



2006 Road Damage and thresholds

Thresholds

In the hottest period of 18th – 19th July a *combination* of prolonged sunshine and temperatures in excess of 30°C caused surface temperatures of *exposed* roads to escalate causing heat damage.

Mediated by...

- roads running north/south – orientation was a factor
- roads that have been surface dressed in last few years – more at risk
- existing voids/cracks exacerbates damage

Past weather - Can be useful - institutional memories don't stretch back far

Observed daily temperatures Oxford Met Station show...

- when 32°C was exceeded in Oxford.
- Summers 1975, 1976, 1990 (consecutive days of 32°C).
- Newspaper archives provide confirmation of impacts

"Roads are being sanded as quickly as the council can do the work but the Council can barely cope" (Oxford Times 2nd July 1976)



Issues arising from 40 LCLIP entries

Agenda for Transport Services

- Network flow – disruption
- Subsidence of carriageways 2003
- Flash flooding
- Ponding – on streets
- Maintenance techniques – exacerbating effects of the weather (overbanding and drainage)
- Gullies and drains – maintenance
- Snow and ice - bane of winter maintenance
- Heat – 'fattening up' rutting/slippery surfaces
- Wind – leaves and trees (root damage)
- How much salt/grit should Transport Services stock?



2006 Headline messages – School Closures

Heat-wave – July 06.

Some schools recorded temperatures of more than 36°C (97°F) in classrooms



- Temperature in some classrooms exceed 36°C

consequences

- 6 schools closed for either an afternoon, one or two days.
- Head teachers decided that pupils should be sent home.
- Over 970 students affected.
- "Overriding responsibility is to make sure pupils are safe...If such a decision is made, parents will be told at the first opportunity and reminded to listen to notices via local radio stations." J.M. Director Children, Young People and Families.



2006 School closures & thresholds

Threshold

Heat-wave - 18th, 19th, 20th July 06 – last week of state school year. 970 students across county. Six schools affected. Range of internal temperatures reported (36/7°C)

Mediated by building type

- Single storey flat roof asphalt roofs
- Highly glazed
- No external protection from trees or other shade

Thresholds to assist clarification of responsibilities

- What happened in the other 296 schools?
- Up to Head Teacher to take decision/County Council issue guidance
- Strategies for closure need clarification (winter closures a precedent)
- County Council responsible for building and refurbishment – who owns the risk?



Senior Management Board - Corporate

LCLIP used at event to explore Corporate response

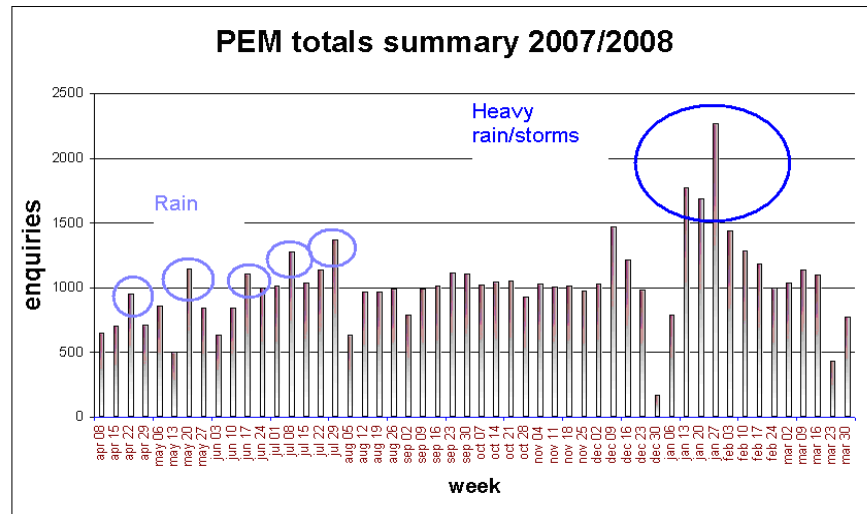
Risk/implications:

- Protect critical infrastructure
- Reserves to cope
- Long-term contracts
- Procurement issues
- Legal confusion
- Reputational damage
- Capital Programme planning
- 'whole life costing'

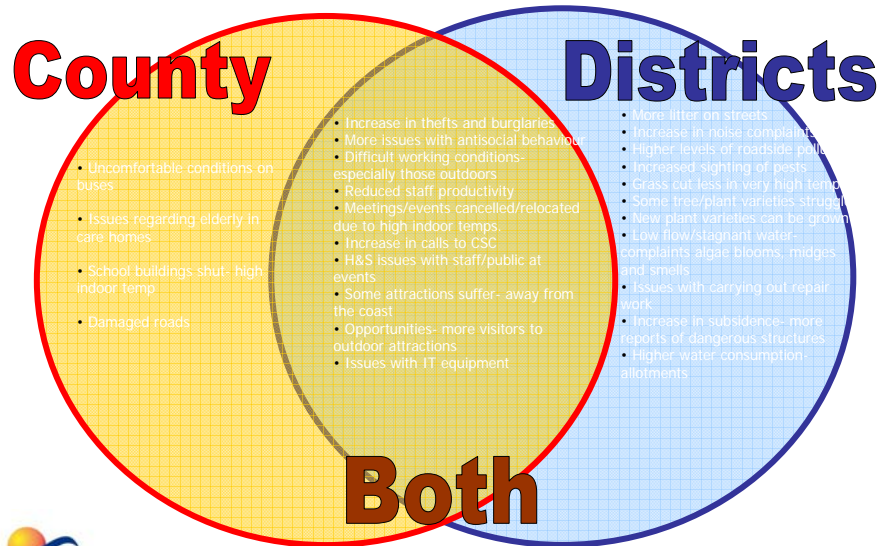


Highways – Public Enquiry Manager summary

Lancashire County Council



Heatwave consequences - Lincolnshire



June 2007 floods – Derbyshire CC



- o **Brookfield Community School Rest Centre**
- o **Damage to schools (£120k)**
- o **Highways damage (£300k)**
- o **Temporary accommodation for elderly (£11k).**
- o **Damage to Council depot (£88k).**
- o **Damage to Structures (Estimated at £458k – work still outstanding)**

- o Emergency Planning, Children & Younger Adults, Adult Social Services, Property Services, Countryside Service, Highways, Structures, Risk & Insurance, Corporate Finance, Cultural & Community Services, Call Derbyshire all affected in some way

Leeds City Council

Used LCLIP to create:
'hierarchy of disruption'

1 = paralysing

4 = nuisance

Analysis of recent response

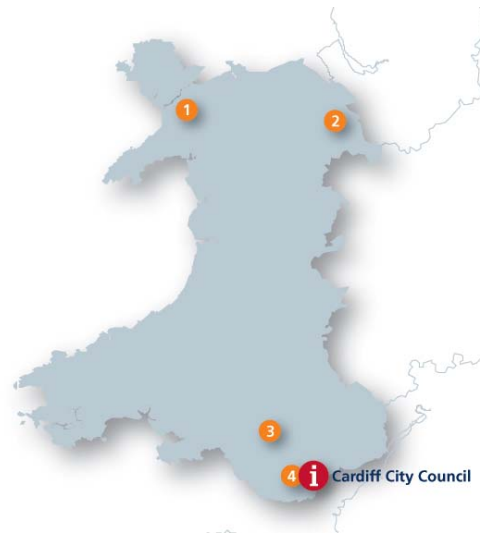
Present to Corporate

Leadership Team



Cardiff City Council

- Shared findings with Welsh LA network
- Qualitative findings rather than statistical
- Service heads asked to respond – found 'gap' between anticipated ability to respond and actual responses.



LCLIP Review

- 100 plus LAs (partnerships)
- Effective in communicating
- But focus on consequences
- When is LCLIP finished?
- Re-focus on current vulnerability
- Then becomes a platform for further work



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