

The London Climate Change Adaptation Strategy

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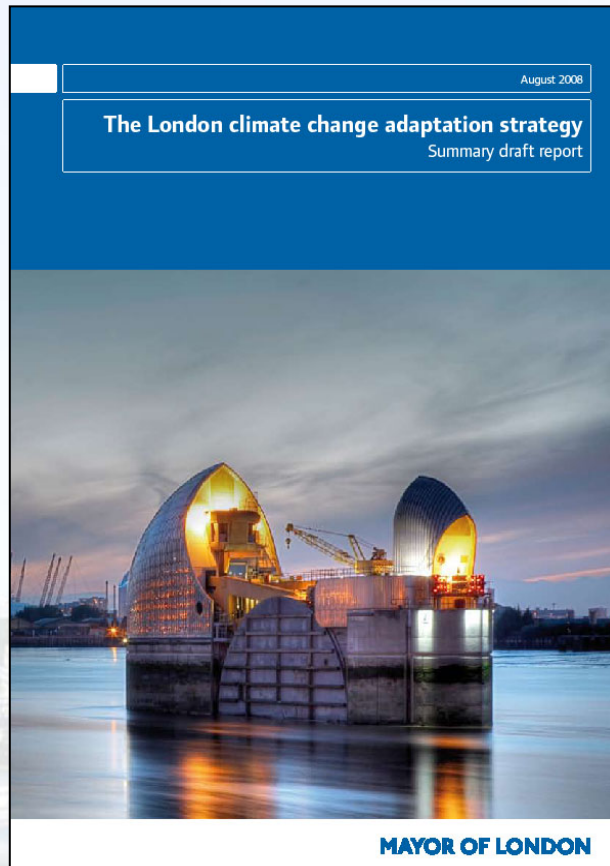
What is the GLA ?

- Led by the Mayor of London
- Citywide government for London
- GLA Group
 - London Development Agency
 - Transport for London
 - Metropolitan Police Authority
 - London Fire and Emergency Planning Authority

Mayor's Priorities

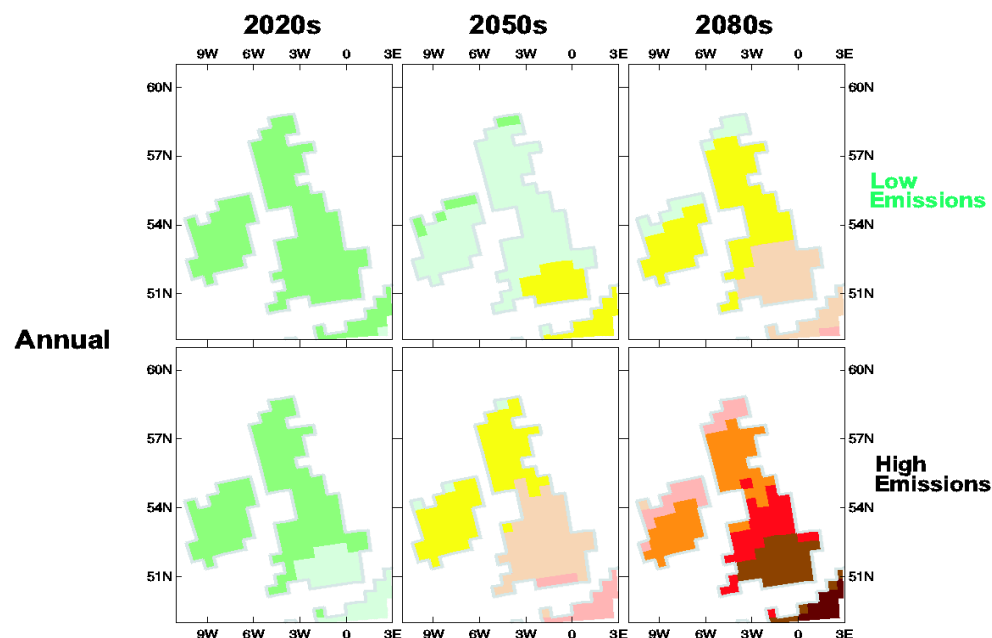
- Tackle climate change
 - Reduce London's CO₂ emissions by 60% by 2025
 - Prepare London for climate change and extreme weather
- Improve London's environment and quality of life of Londoners
- Provide affordable, high quality housing
 - 50,000 new homes per year

Why produce an adaptation strategy ?



- Some climate change is now inevitable
- These changes will mean an increasing risk of impacts on London
- Proactive measures are much cheaper and more effective than reactive measures
- We are not very well adapted to our current climate
- Requirement of the GLA 'climate change duty'

Warmer, wetter winters and hotter, drier summers



Summer 2050's (high emissions)

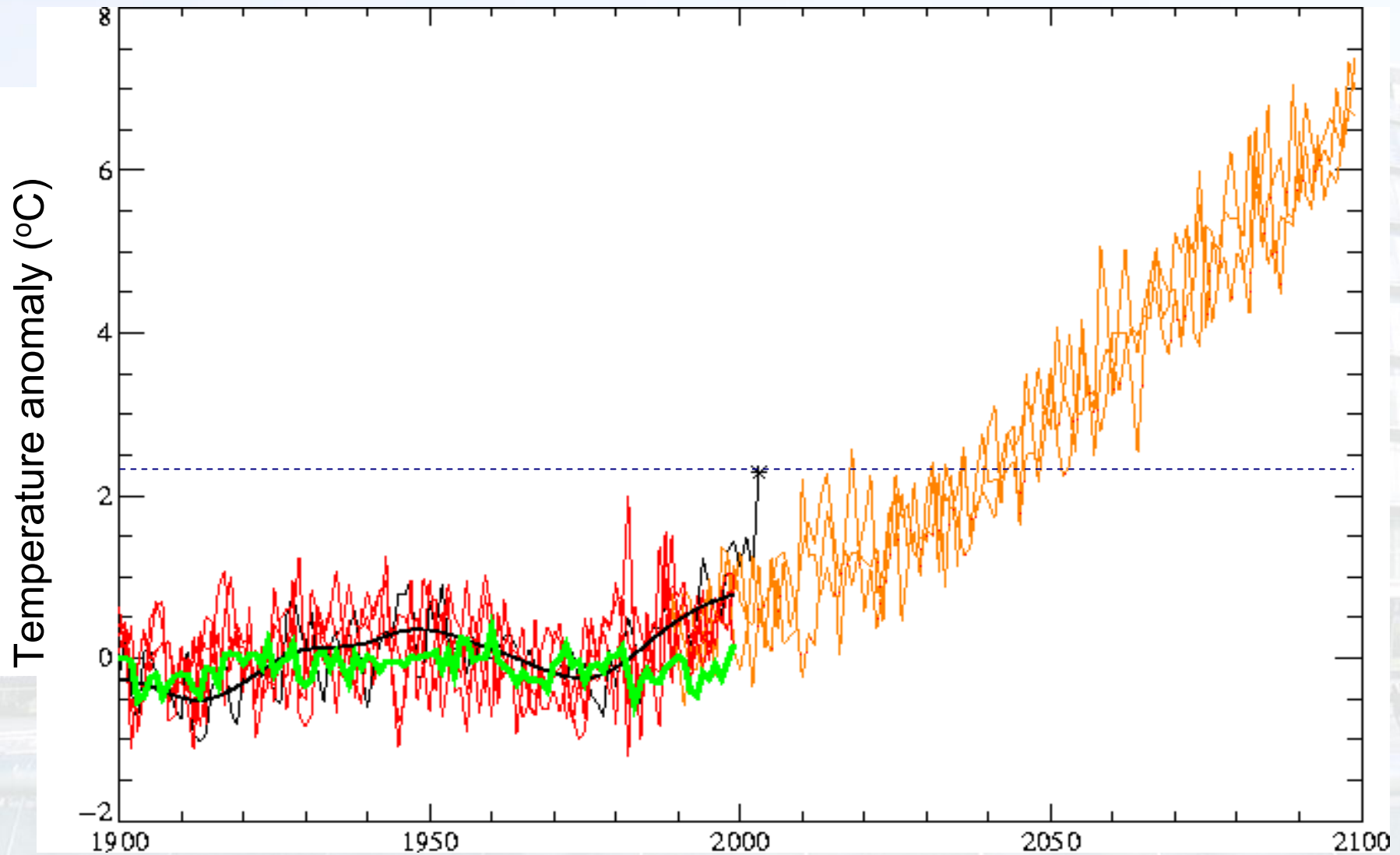
- +3°C
- - 30-40% rainfall

Winter 2050's (high emissions)

- +1.5 - 2 3°C
- + 25-30% rainfall

Average summer temperatures

By 2050s, 2/3 summers will be 'heatwaves'

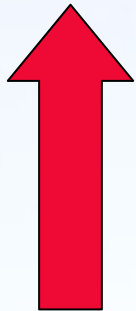


Adaptation Strategy headlines

- A catastrophic tidal flood of London is very unlikely
- The risk of floods, droughts and heatwaves in London will increase
- In the short-medium term rising temperatures are likely to be beneficial to Londoners' health
- Many of the adaptation measures are good for the quality of life of Londoners and the London economy
- London was not designed for the kind of weather we will experience in the future
- London's growth has the potential to increase the problem
- The poorest in the city are most at risk
- Adaptation is a dynamic process

When to adapt & how much to adapt to ?

Proactive



Prevention

- Structural measures, land use planning, mitigation

Preparedness

- Vulnerability assessments, public awareness, insurance



Response

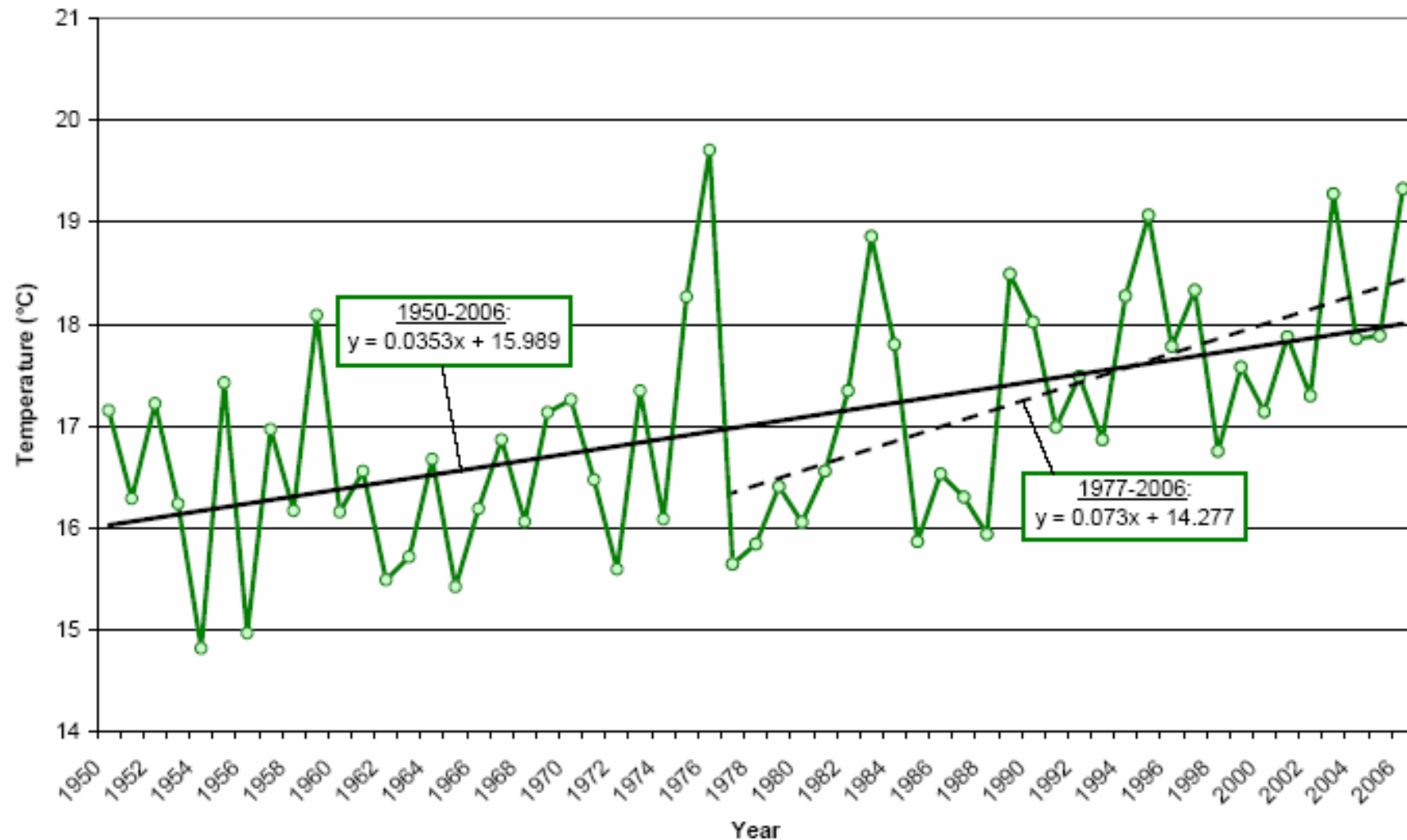
- Emergency plans, support for the vulnerable

Recovery

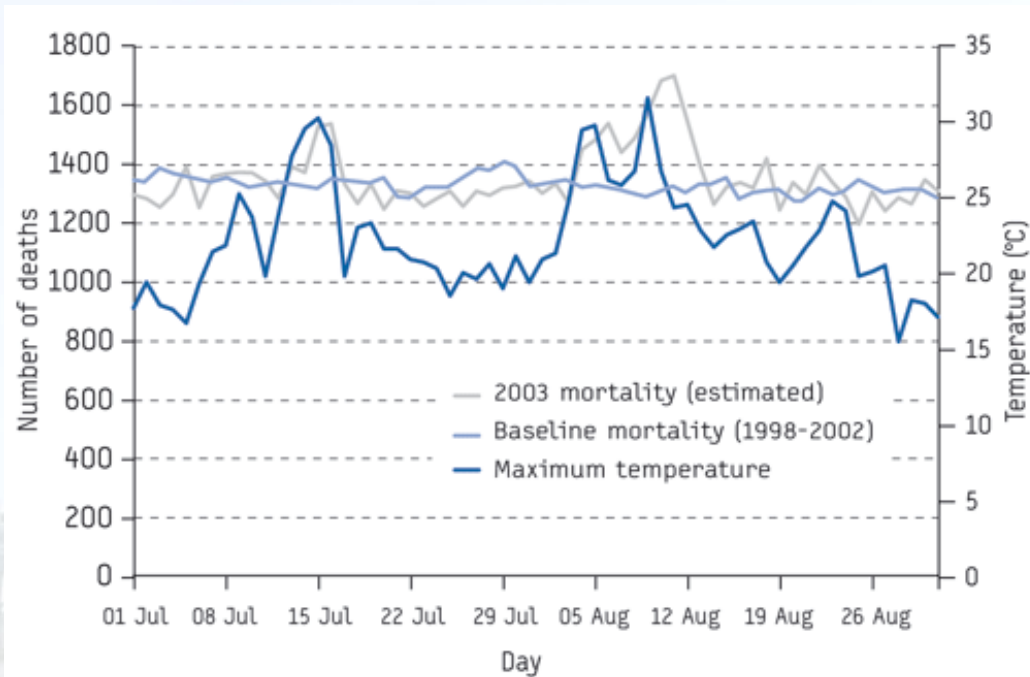
- Insurance claims support, temporary accommodation

Reactive

London is already warming.....



Londoners are vulnerable to high temperatures



600 people died in 2003 heatwave in London

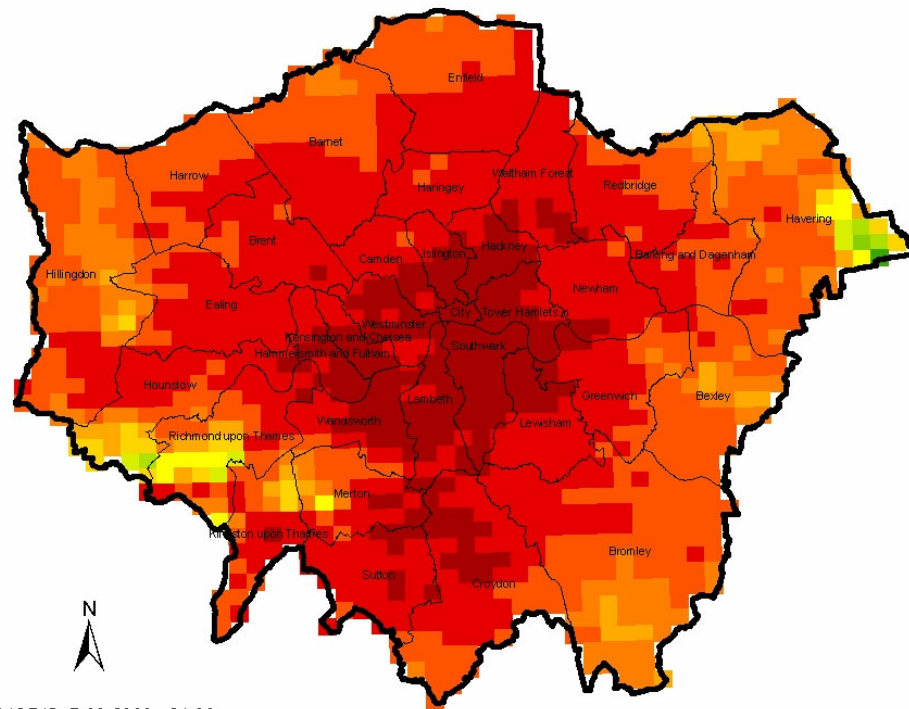
London had highest number of deaths

London **did not** have the highest temperatures

Older people most at risk

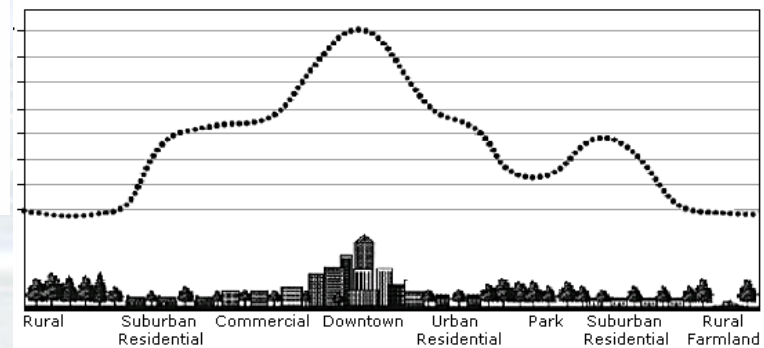
Urban heat island effect

Temperature distribution in London, August 2003



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London's microclimate amplifies the health impact of heatwaves (London is up to 10°C warmer than the greenbelt on summer nights)



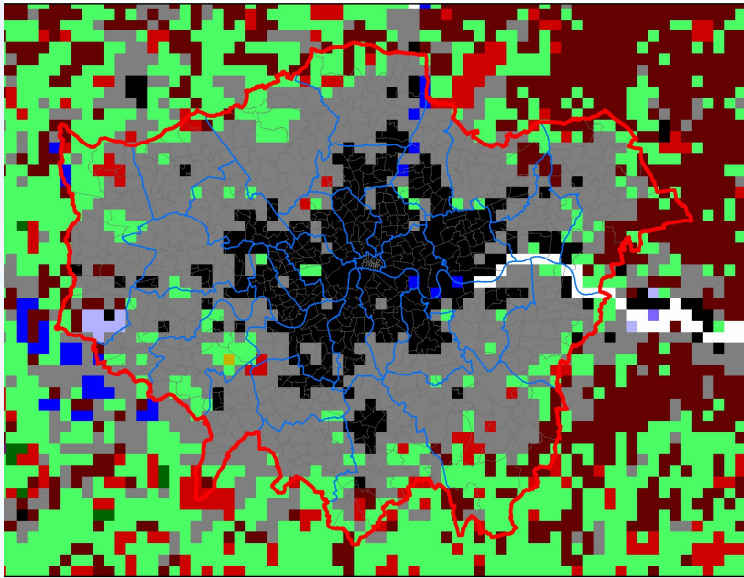
Temperatures are predicted to rise further...



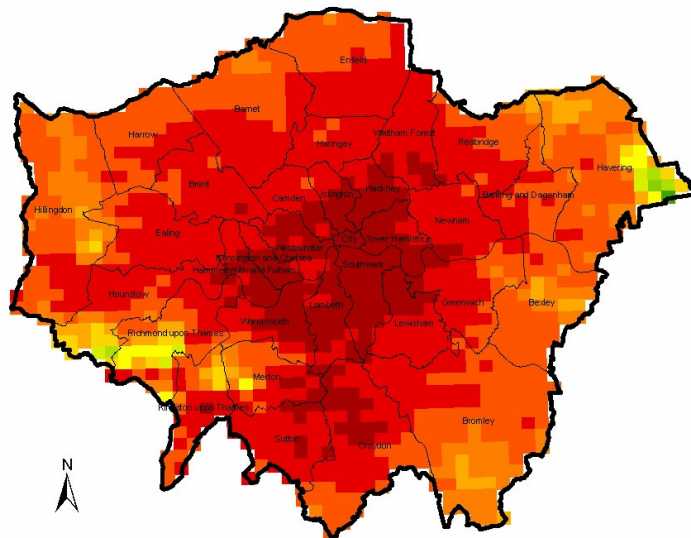
- London will experience an increasing risk of overheating due to:
- Global warming induced climate change
- The intensification of the Urban Heat Island (UHI) effect from:
- climate change
 - increase in development density from London's growth
 - increase in man-made heat contributions as a response to higher temperatures (eg air conditioning) and London's growth
 - reduced evaporative cooling due to drier summers

Managing overheating in London

5 parallel courses of action



Temperature distribution in London, August 2003



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- Managing London's urban heat island
- Designing new, and adapting existing buildings and infrastructure to minimise the need for cooling as far as possible
- Ensuring that where cooling is still required, that low carbon, energy efficient methods are used
- Enabling a cultural adaptation to high temperatures
- Test, review and improve the heatwave plan

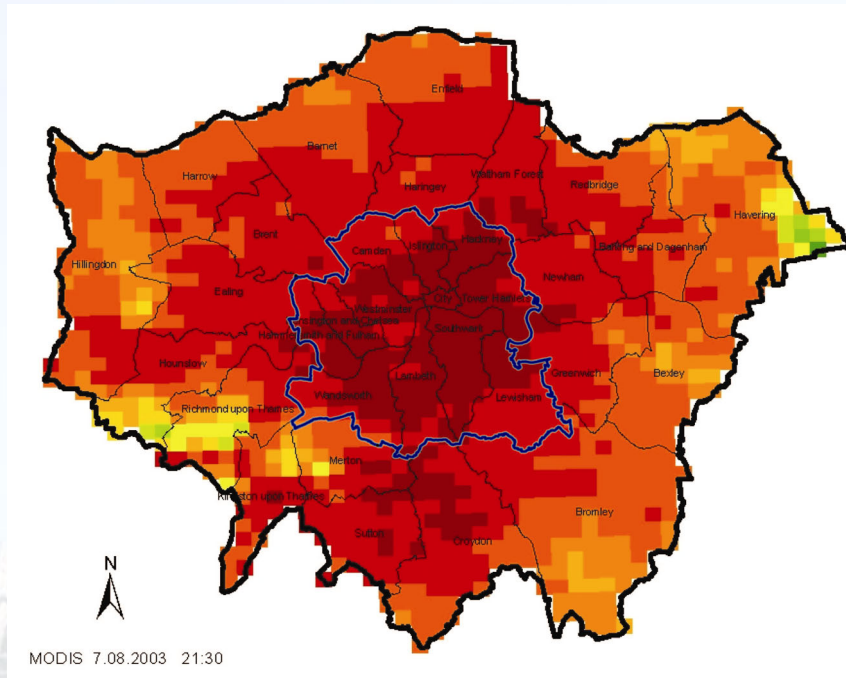
Urban greening programme

Lead a city-wide programme to 'green' the London to prevent the city from heating up

- Use vegetation (street trees), greenspaces, greenroofs and greenwalls to cool the city and reduce flood risk
- Identify flood and UHI 'hotspots' in London
- Prioritise measures in 'hotspot' areas and areas of social deprivation
- Pilot greening examples to determine what greening measure works best in which circumstances
- Develop city-wide programme
- Note that we have developed a database of climate resilient tree species

Urban heat island action area

Create an 'urban heat island action area' where new development must contribute to cooling the city



- Ensure waste heat is not ejected into the street canyon
- Contribute to local greening measures (inc greenroofs)
- Use high albedo, low emissivity materials, eg coolroofs
- Look at opportunities for district cooling

Supporting Guidance

1. Provide London-specific **design guidance** to enable architects and engineers to reduce the risk of overheating in new development

Currently UK building regs do not require developers to build for current (let alone future) hot summers

2. Provide **guidance on low-carbon cooling** options

- Compare and contrast cost, energy and carbon efficiency of different cooling technologies
- Map district energy networks

Taking people with you...

- Mayor cannot deliver Adaptation Strategy on his own
- Need to consult with stakeholders and get commitment to delivery (London Climate Change Partnership)
- Work with existing programmes (don't recreate the wheel or duplicate effort)
- Adaptation is a dynamic process (what works today, won't work forever)