



# Preparing for Heatwave-related Risks in London

This briefing updates members on preparations for heatwaves in London, an essential part of longer-term adaptation to climate change through developing resilience to severe weather impacts, alongside drought or flooding.

## Overview

Heatwaves are a public health risk to individuals; prolonged exposure to high heat can have fatal consequences with a possible rise in mortality within only one or two days of the temperature rising<sup>1</sup>. In England, there were over 2,000 excess deaths over the 10-day heatwave period which lasted from 4 to 13 August 2003, compared to the previous five years over the same period. Although anyone can be affected by a heatwave, some populations are particularly at risk, including babies and the very young, the elder (particularly those aged 75 years and over), those with pre-existing medical conditions (e.g. heart or lung conditions, diabetes, kidney disease) as well as people who spend a lot of time outside or in hot places.

**According to the NHS**, heatwaves pose three main health risks:

- Dehydration
- Overheating
- Heat exhaustion and heatstroke

In addition to impacts on public health, higher temperatures impact London's transport and economy:

- There are measures for temperatures above 24°C to prevent train tracks from buckling<sup>2</sup>
- At or above 33°C tarmac, asphalt and bitumen road surface begins to soften<sup>1</sup>
- At or above 36°C power sources begin overheating and extreme precautions – such as speed limiting – may need to be introduced to prevent rail lines buckling<sup>2</sup>
- At projected average and extreme higher temperatures, London's buildings will become 'more uncomfortable, more expensive to run through cooling energy costs and potentially dangerous to health as a result of high internal temperatures in poorly designed offices. This could result in productivity losses, the need for retrofitting mechanical ventilation and air conditioning systems, and reduced property valuations.'<sup>3</sup>

**Preventive measures** are key to reducing the risk of negative impacts. **The Heatwave Plan for England** has been designed to help health and social care services and public agencies put those measures in place. It provides recommended key public health messages (e.g. stay

out of the heat, cool yourself down, keep your environment cool, look out for others) as well as more specific guidance on topics such as school children, large public events or outdoor celebrations.

The Heatwave Plan defines the **five-level heat-health watch system** that exists to monitor heat across the country. Every year from 1 June to 15 September the heat-health watch system is set at Level 1, 'Heatwave and Summer preparedness programme' (see figure below). (see figure below 'Heatwave level alerts').

Level 0	Long-term planning - All year
Level 1	Heatwave and Summer preparedness programme - 1 June – 15 September
Level 2	Heatwave is forecast – Alert and readiness - 60% risk of heatwave in the next 2 to 3 days
Level 3	Heatwave Action - temperature reached in one or more Met Office National Severe Weather Warning Service regions
Level 4	Major incident – Emergency response - central government will declare a Level 4 alert in the event of severe or prolonged heatwave affecting sectors other than health

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The Heatwave Plan for England features a standard cascade of heatwave alerts. At the local level, Directors of Public Health in local authorities are responsible for population health outcomes and are supported by Public Health England (PHE), which provides national leadership and expert services to support public health. Local Health Resilience Partnerships (local health sector organisations) and Local Resilience Forums (local government and NHS) are key for the preparation and the immediate response to heatwaves.

According to official PHE guidance, at the local level, the following needs to be in place to respond to heatwaves at best:

- Heatwave and summer preparedness plan
- Communications and information plan
- Plan to collaborate with all service providers
- Engaging the community and providing extra help to more at-risk populations
- Monitoring with real team surveillance

The Met Office provides information and notification services according to those levels. The basic service is run daily during the Level 1 of the programme and consists of planning advice information. It is sent by email to all relevant heatwave planners<sup>4</sup>. In addition to this and the general weather forecast, two other warnings are used when necessary:

- the Heatwave Warning (early warning) – Level 2
- the National Severe Weather Warning Service (NSWWS) – Level 3.

**London perspective**

As a city, London is particularly vulnerable to heatwaves due to the **Urban Heat Island effect**. This is a phenomenon which describes the increased temperature of urban spaces compared to rural ones, which can mean a 10°C difference between London and its surroundings. This is due to the fact the urban landscapes absorb and trap heat more than others (e.g. through buildings, roads). The type of building stock can contribute to enhancing heat, especially with less insulated buildings which is often the case in inner London (with buildings predating 20th century). In London, the Met Office National Severe Weather Warning Service (NSWWS) has set the threshold at 32°C during the day and 18°C at night for two consecutive days to declare a heatwave.

It is also important to note the effect that heat might have on air quality. High temperature and little or no breeze can **exacerbate existing air quality issues** by preventing the dispersion of particles.

### Concurrent risks: heatwaves and Covid-19

The Covid-19 crisis has the potential to worsen outcomes in a heatwave. PHE has published a set of slides, the [Heatwave and Summer preparedness 2020](#) with recommendations specifically in the light of Covid-19. The key identified risks are:

- A potential increase in adverse outcomes by groups affected by both risks (clinical vulnerabilities and Covid-19)
- An increased exposure due to indoor overheating
- A reduced access to cool public spaces
- System-level risks related to the concurrency of impacts (e.g. same services are on the frontline of both responses).

In addition to the responsibilities of commissioners of health and social care and local authority Directors of Public Health (see page 20 of the Heatwave Plan), these additional actions are outlined by PHE to prepare for the concurrent risks:

- work with partner agencies, providers and businesses to raise awareness about the concurrent risk of hot weather and Covid-19
- encourage partners to sign up to the heat health alert system
- ensure care homes and hospitals are aware of the heatwave plan and are preparing for heatwave as a concurrent risk with Covid-19
- engage the community and voluntary sector to support communities to help those most at risk, especially those who are socially isolated
- ensure other institutional establishments (i.e. prisons, schools) are aware of heatwave guidance
- work with local partners to facilitate equitable and flexible access to green public spaces during hot weather
- Local Health Resilience Partnerships may wish to satisfy themselves that there is adequate review across local health and social care systems of usual plans for surge capacity in hot weather in light of possible Covid-19 related staff absence and to ensure staff welfare
- Local Resilience Fora should consider the impact of hot weather on the existing operational response to Covid-19 and vice versa
- continue to communicate the public messages around heat if hot weather is forecast

Finally, the PHE leaflet "[Beat the Heat: Coping with heat and COVID-19](#)" provides direct advice on how to stay safe in hot weather and how to keep a cool home.

### Heatwave response in London

At the London level, the London Resilience Forum (LRF) sets out the strategy for the London Resilience Partnership. Boroughs also have their own resilience forums. The London Resilience Partnership published a [Severe Weather and Natural Hazards Response Framework](#) (latest version from June 2017, a review is due in 2020). The document lists the triggers for partnership action.

In the case of heatwaves, the classification followed is the one developed by the Met Office and PHE (Levels 2, 3 and 4). The lead for activation for heat events are both organisations. The decision to convene a Strategic Coordination Group (SGC) might be taken at level 3 or 4.

The **London Climate Change Partnership** is the centre for expertise on climate change adaptation and resilience to extreme weather in London. It has a [webpage](#) dedicated to the topic of heatwaves. They also coordinate a group dedicated to this issue, the [Heat Risk in London group](#). The Mayor of London's 2018 [Environment Strategy](#) is another important resource that looks at heat-related risks for the capital.

The Covid-19 crisis has the potential to worsen outcomes in a heatwave

The Mayor of London is working with partners, including London Councils, the London Environment Directors' Network (LEDNet) and boroughs, to identify, establish and promote a network of outdoor and indoor **cool spaces** in London<sup>5</sup>, to help residents and visitors deal with high temperatures during summer heatwaves and complement the guidance in the Heatwave Plan for England. In light of the ongoing Covid-19 public health measures, these will be outdoor open, green and shaded cool spaces, which are easily accessible by the public. In future years, the GLA may look to establish indoor cool spaces. This initiative is not intended to replace any medical advice, and if people are unsure, they should continue to consult a medical professional.

Shade's importance is also already outlined in the Mayor's 2017 **Healthy Streets** approach, used in the 2018 **Health Inequalities Strategy**. 'Shade and shelter' is one of the 10 indicators of a Healthy Streets approach, alongside 'Clean air' or 'Places to stop and Rest'.

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## Commentary

Overheating and the serious impacts it can have will increasingly be a challenge for London in future years. Climate change will lead to more frequent and more intense heatwaves, and associated impacts on people, buildings and businesses in London. Heatwaves are likely to have the greatest impact on the more vulnerable populations and need to be fully considered when planning for climate change adaptation, including the retrofitting of homes.

Beyond the necessary heatwave planning, the following actions create 'win-wins' by reducing carbon emissions whilst also supporting adaptation:

- an increase in green and blue infrastructure, enhancing the overall green space coverage
- domestic retrofitting measures (to minimise overheating)
- working with developers to build heat-resilient domestic and non-domestic stock (the London Plan for example requires developers to follow the “cooling hierarchy”)

### Endnotes

<sup>1</sup> 2018, Heatwave Plan for England, Public Health England, London: PHE, p.6

<sup>2</sup> 2018, Greater London Authority, London Environment Strategy, London: GLA, p.345

<sup>3</sup> 2018, Mott Macdonald, Technical Assistance to Deliver London's Climate Action Plan, Reading: Mott MacDonald, p.37

<sup>4</sup> Signing up to the Met's hot weather alerts can be done by emailing [enquiries@metoffice.gov.uk](mailto:enquiries@metoffice.gov.uk) (using subject: Hot weather alerts).

<sup>5</sup> 2020, Greater London Authority, London City Resilience Strategy, London: GLA, p.28

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## LINKS

[Heatwave Plan for England \(PHE\)](#)

[Beat the Heat: Coping with heat and COVID-19 \(PHE\)](#)

[Heatwaves \(London Climate Change Partnership\)](#)

[London City Resilience Strategy \(GLA\)](#)

[Coping with Hot Weather in London \(GLA\)](#)

[Heat and COVID-19 Information Series \(Global Heat Health Information Network\)](#)

[Heatwave guide for cities \(International Federation of Red Cross and Red Crescent Societies\)](#)

This member briefing has been circulated to:

Portfolio holders and those members who requested policy briefings in the following categories: Environment