

LONDON RESILIENCE

EXERCISE HELIOS

AN EXTREME HEAT EXERCISE FOR LONDON

POST EXERCISE REPORT



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VERSION CONTROL

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FOREWORD

London, like many cities globally, is on the frontline of the challenges brought on by a warming world and projected future climate extremes. Recognising the scale of the climate crisis, the Mayor of London has made climate change a top priority, setting an ambitious target for the capital to reach net zero by 2030 and implementing ambitious programmes and policies to reach this goal.

Adapting to climate change is equally urgent. We have to consider how London will continue to thrive given this reality, which affects all areas of our society, and it is clear coordinated action is required to address these challenges and enhance the capital's resilience to extreme events.

The Mayor commissioned the London Climate Resilience Review, published earlier this year which sets out a series of ambitious recommendations to ensure that lives and livelihoods are not disrupted by increasing frequent and severe weather patterns, including extreme heat.

Recommendation 10¹ of the review suggested the London Resilience Partnership conduct an exercise to explore London's preparedness for an extreme heat event and identify potential cascading and concurrent risks. A multi-agency partnership exercise was conducted on 27 June 2024 and this report brings together the findings of the exercise and provides a series of recommendations for the partnership to take forward this important work.

As London Resilience Forum Chair, my priority is to ensure the partnership takes a strategic approach to mitigating the risks we face, and that we support each other to respond effectively to incidents large and small. Exercises like this play a vital role in achieving this.

This report highlights that London is relatively well equipped to deal with short duration extreme heat events. Yet, it reveals that for more protracted extreme heat events with cascading impacts, there are fragilities in the system.

Having conducted the exercise and made a step toward better understanding the collective capability to respond to extreme heat, there is now an opportunity to continue working together to reduce the risk and mitigate the impact of the wide range of consequences of more frequent and extreme heat events. I look forward to supporting the partnership to progress this work.

David Bellamy,

Chair of the London Resilience Forum

¹ The London Climate Resilience Review – July 2024, p.46

EXECUTIVE SUMMARY

Globally, heatwaves are becoming more extreme and more frequent. As the climate changes, London will need to ensure that it is prepared and able to respond to extreme heat risk. Heatwaves pose dangers to human health, can disrupt critical infrastructure and services, and harm the environment. The interim London Climate Resilience Review² commissioned by the Mayor of London, included a recommendation to hold an exercise to test London's preparedness for a severe heat episode. Fynbos Consulting Limited worked with London Resilience to develop and deliver Exercise Helios, which was held on 27 June 2024.

This report summarises key elements of the response to a heatwave event in London. The report outlines the main findings from the exercise and makes recommendations for improvements to London's arrangements for preparing for and responding to more frequent and more extended periods of intense heat.

The scenario, set in July 2027, invited over 80 participants across multiple sectors to explore the consequences of a sustained dry season and a week of temperatures breaching heatwave thresholds; five consecutive days over 38C, with a peak of 42C, and persistent tropical nights.

The exercise objectives were:

- To develop a common understanding of the partnership response to a heat health emergency
- To understand how extreme heat information is collated, shared, assessed and prioritised at a city-level
- To develop a common understanding on the strategic coordination arrangements in such a scenario
- To improve public messaging advice of risk beyond health-related impacts, ensuring it is more inclusive.

The main findings from the exercise suggests that while various plans and strategies are in place to address relatively short periods of extreme heat, for protracted extreme events these measures could be enhanced by considering:

- Cross-sector, London-wide impacts and interdependencies.
- Critical pathways and temporalities between risks, hazards and mitigating actions being taken.
- Decision making to prioritise limited resources.
- A revised concept of heat-vulnerability and inequality in planning.
- Improvements to strategic planning, coordination and communicating with the public.

Greater cross-sector collaboration, involving a wider range of relevant stakeholders (e.g. resilience teams working with climate adaptation teams, increased engagement with the voluntary and community sector, improved information for housing organisations, leisure organisations, event organisers, and businesses), would also assist a more joined-up response and bridge knowledge gaps – extending both what is known and by whom.

This report makes 15 recommendations (Table 1) which are intended to help address these findings.

² <https://www.london.gov.uk/sites/default/files/2024-02/LCRR%20INTERIM%20REPORT%2012%2002%202024.pdf>

Table 1: Summary of Recommendations

Theme	Recommendation	
1: A strategic approach to extreme heat risk	1	The GLA should produce a London-wide strategy for managing extreme heat which includes adaptation, risk mitigation response and recovery with appropriate resourcing, cross-sector commitment, and well-defined roles and responsibilities.
2: Learning and Evidence	2	Extreme heat planning should be evidence-based, and evidence should be made widely available to enable all partners to take appropriate action
	3	The GLA should convene a working group of relevant stakeholders to establish and share more detailed understanding of the different heat-related risks and pathways of cascading impact. This information should be used to inform: 1. The makeup of a strategic group to develop the London-wide strategy (linked to recommendation 1) 2. The refining of individual organisation plans The production of sector-specific briefing and engagement materials and methods
	4	The London Resilience Forum should undertake a review of heatwave response arrangements and learning from other cities with similar characteristics to London. This should include response to heatwaves and potential concurrent emergencies (such as wildfires, water scarcity and power cuts).
3: Regional and local planning for heatwave response	5	The London Resilience Forum Severe Weather & Natural Hazards Working Group should review the arrangements for strategic coordination (and provision for transfers of lead as the situation develops), expand the set of triggers for taking action, and describe a process for cross-sector impact assessment and decision-making by 2026.
	6	London Resilience Partnership organisations are encouraged to develop, or review and update, their local heatwave response plans and arrangements by the end of 2026.
	7	London Resilience Partnership organisations should make use of the available briefing, training, and exercising materials to support local heatwave planning.
	8	The LRF Business Sector Panel, in collaboration with the GLA Climate Change Adaptation team should consider the provision of advice to support business resilience to heatwaves.
	9	Borough Resilience Forums, and other sector-level groups (e.g. health and social care) should deliver local extreme heat briefings and exercises, involving relevant stakeholders to raise awareness, disseminate learning and inform local and sectoral plans.
4: Strategic communication	10	As exists for flooding and drought, London Resilience Communications Group should develop a coherent and integrated public communication strategy for extreme heat.
	11	London Resilience partners should review their own internal / external communications strategies for extreme heat against the London Resilience Communications Group strategy, ensuring they are fit for purpose.
	12	UKHSA and Met Office should review the feasibility of including Heat Health Alert content in National Severe Weather Warning Service alerts.
	13	The London Resilience Forum should examine the potential to develop a visual mapping tool to show live incident information. It should also take action to make this (and any other relevant) information available to all relevant partners during the response.
5: Addressing inequity in heat risk and risk management	14	The London Resilience Forum to lead in developing resources to help partners understand the concept of becoming vulnerable in extreme heat, how heat risk might be disproportionately felt by different groups and individuals, and how to promote equity in resilience planning.
	15	The London Resilience Forum should explore how the Equality Impact Assessment process could be used in development of plans for extreme heat (and other emergencies).

EXERCISE OVERVIEW

BACKGROUND

As the climate changes, London will need to ensure that it is prepared and able to respond to extreme heat risk. The [London Climate Resilience Review](#)³ recommended holding an exercise to explore London's preparedness for a severe heat episode and identify potential cascading and concurrent risks. This aligns with the [National Security Strategy](#)⁴ call for regional exercises which test preparedness for extreme weather events and cascading effects.

Since the exercise was held on 27 June 2024, the final [London Climate Resilience Review report](#)⁵ has been published. This highlights the “**need for a regional strategic plan for adapting to higher temperatures with a governance framework that sets out roles and responsibilities.**” The [COVID Module 1 report](#), also published since the exercise, identifies the need to look at ‘whole system’ risks⁶.

This report outlines the findings of the exercise, summarises key elements of the current response to a heatwave event and makes recommendations for improvements both in relation to the reactive emergency response, as well as adaptation interventions.

- Chapter 2 ([Exercise Overview](#)) sets out the intentions and parameters for the exercise.
- Chapter 3 ([London's Expected Response to Extreme Heat](#)) summarises participant discussion during the exercise.
- Chapter 4 ([Improving the Response](#)) sets out the findings and recommendations for improvement. Detailed exercise discussions produced supplementary material provided in the Appendix which may be beneficial for seeing the exercise discussion classified by sector.
- Chapter 5 ([Conclusion](#)) provides a summary of the findings and highlights the need for action to translate the recommendations into action and practice.

³ <https://www.london.gov.uk/sites/default/files/2024-02/LCRR%20INTERIM%20REPORT%2012%2002%202024.pdf>

⁴ <https://committees.parliament.uk/publications/30507/documents/175976/default/>

⁵ https://www.london.gov.uk/sites/default/files/2024-07/The_London_Climate_Resilience_Review_July_2024_FA.pdf

⁶ <https://www.gov.uk/government/publications/uk-covid-19-inquiry-resilience-and-preparedness-module-1-report>

EXERCISE AIM AND OBJECTIVES

The overarching aim of the exercise was to explore the impacts of a heatwave scenario, to inform the development of London's extreme heat planning, which will provide a comprehensive approach considering both immediate actions in response to extreme heat events, but also longer-term adaptation actions.

Table 2: Main and sub-objectives of the exercise

Objective	Sub-objective
1 To develop a common understanding of the intended partnership response to a heat health emergency	1.1 To identify partners' individual plans to respond to a heat health emergency.
	1.2 To identify partners' individual organisational priorities for this kind of incident.
	1.3 To identify key gaps and interdependencies in partnership plans?
2 To understand how information about the impacts of an extreme heat event is collated, shared, assessed and prioritised at a city-level	2.1 To identify how partners would share information on localised events.
	2.2 To identify at what threshold partners would escalate a response to the partnership.
	2.3 To validate which agency would declare a major incident/ trigger strategic coordination mechanisms.
3 To develop a common understanding on the strategic coordination arrangements in such a scenario	3.1 To identify the lead agency in the event a partnership response is activated
	3.2 To identify which agency would chair an SCG.
4 To improve public messaging advice of risk beyond health-related impacts, ensuring it is more inclusive.	4.1 To promote awareness of inclusive extreme heat products.
	4.2 To activate the Comms sub-group to develop a series of boiler plates that sectors can tailor to suit sector needs.

EXERCISE SCOPE

Exercise Helios was not intended to validate existing plans, but to gather information on existing planning efforts across London with the intention to better understand what changes may be required.

By design, Exercise Helios was broad in scope and explored a wide range of impacts across sectors. It did not delve into every nuance however targeted deep dives through subsequent partner-led extreme heat sectoral workshops will continue to contribute to this body of knowledge. In addition, London Resilience Unit have made exercise materials available for use by all partners at the organisational level.

Exercise Helios focused on understanding how organisations and sectors currently intend to respond, share information, assess threats, and prioritise actions during a heatwave. In addition to the planned response to weather alerts, the scenario explored multiple, smaller-scale incidents occurring concurrently, which individually may not trigger partnership coordination, but collectively stretch resources.

EXERCISE FORMAT

The exercise was delivered as a table-top discussion. Over 80 people participated in the exercise (see **Error! Reference source not found.** for the list of attendees), divided into eight sector-based groups. Participants were provided with background information, and then moved through the exercise scenario with injects focusing on four main phases (

Table 3).

In parallel to the main discussions, one group focused specifically on developing communications lines as would be the role of London Resilience Communications Group (LRCG). These participants were asked to present their work back at the end of the exercise.

Table 3: Phases of the exercise

Phase	Relevant Alert	Focus of questions / activities
A pre-heatwave preparation phase, with notification of a forthcoming heatwave	Yellow UKHSA Heat Health Alert	Understanding plans and tools used Understanding key priorities and actions Understanding key risks and concerns at this stage
A pre-heatwave preparation phase, with notification of an increase in temperatures	Amber UKHSA Heat Health Alert	Understanding how a move to amber affects planning and response More on vulnerability
Now in the heatwave, the duration has extended	Amber UKHSA Heat Health Alerts Amber Met Office Severe Weather Alert	Understanding how the extension affects planning and response More on information sharing, prioritisation of resources and Pan-London coordination
After a weekend of intense heat, a further increase in temperatures is expected	Red UKHSA Heat Health Alert Red Met Office Severe Weather Alert	More detail on direct and indirect consequences across sectors

SCENARIO

In Summer 2027, following a sustained dry season the capital experiences a week of temperatures breaching Met Office heatwave thresholds. Between 2 – 6 July 2027, there are five consecutive days of over 38C daily high temperatures (with a peak of 42C) and persistent tropical nights.

Participants were provided with mocked up alerts from the relevant agency (Figure) and an overview of issues anticipated at each point in the scenario (Table 4). A range of questions and activities were then undertaken by participants designed to address cross-cutting themes at each relevant phase (

Table 3).

Table 4: Table of alerts used during the exercise

Alert	Summary of content and expected consequences of the heat ⁷
YELLOW Heat Health Alert (HHA) issued by UKHSA	Low likelihood of medium impacts. Significant impacts are possible across the health and social care sector due the high temperatures, including: - Observed increase in mortality across the population likely, particularly in the 65+ age group or those with health conditions, but impacts may also be seen in younger age groups. - Increased demand for remote health care services likely - Internal temperatures in care settings (hospitals and care homes) may exceed recommended threshold for clinical risk assessment; - Impact on ability of services delivered due to heat effects on workforce possible;
Issued Tues 29 June 2027	
Valid 1200 Weds 30 Jun to 2100 Sat 3 July 2027	

⁷ The wording here has been reduced for simplicity in the table.

	Many indoor environments likely to be overheating, risk to vulnerable people living independently in community as well as in care settings
AMBER Heat Health Alert (HHA) issued by UKHSA	Low likelihood of high impacts: Severe impacts are possible across the health and social care sector due the high temperatures, including: - Increased risk of mortality across the whole population with significant mortality observed in older age groups. - Severe impacts are possible across the health and social care sector due the high temperatures, including:
Issued Tues 29 June 2027	Increased risk of mortality across the whole population with significant mortality observed in older age groups
Valid from Thurs 2 July 12 noon to Weds 5 July	- Significant increased demand on all health and social care services - Impact on ability of services to be delivered due to heat effects on workforce - Indoor environments likely to be hot making provision of care challenging - National critical infrastructure failures – generators, power outages, etc
TWO AMBER ALERTS: Amber issued by UKHSA and Amber Extreme Heat Warning is issued by Met Office	Medium likelihood of high impacts. Severe impacts are probable across the health and social care sector due the high temperatures, including: - Increased risk of mortality across the whole population with significant mortality observed in older age groups - Significant increased demand on all health and social care services - Impact on ability of services to be delivered due to heat effects on workforce - Indoor environment likely to make care provision challenging - National critical infrastructure failures – generators, power outages, etc
Issued Weds 30 Jun 2027	
Valid 1000 Fri 2 July to 2100 Mon 7 July 2027	
JOINT RED: Red HHA issued by UKHSA and Red Extreme Heat Warning is issued by Met Office.	High likelihood of high impacts: A combination of heat and air quality leads to additional deaths and casualties. This is mainly amongst the elderly, those living in social housing, and more vulnerable groups such as homeless people and those with existing medical conditions. Severe impacts are expected across the health and social care sector due the high temperatures, including: - Increased risk of mortality across the whole population with significant mortality observed in older age groups - Significant increased demand on all health and social care services - Impact on ability of services to be delivered due to heat effects on workforce - Indoor environment likely to make care provision challenging - National critical infrastructure failures – generators, power outages, etc
Issued on 4th July 2027	
Valid from 1000 Mon 5 July to 2000 on Weds 7 July 2027	

LONDON'S EXPECTED RESPONSE TO EXTREME HEAT

This section is derived from participants' input during the tabletop discussion exercise. It is important to note that since this information was gathered through verbal exchanges rather than a review of formal documentation, there may be discrepancies or gaps in the reported procedures. The knowledge and practices shared by the exercise participants might differ from organisational plans and policy. Consequently, this chapter, along with its accompanying appendices, establishes a foundational understanding which should be further explored.

PLANS FOR RESPONDING TO HEAT

In general, the receipt of a yellow heat health alert impacting on London triggers the activation of multiple multi-agency and organisational plans to prepare responders and the public for the incoming increased temperatures (see Table 5). However, some organisations reported that their organisational plans may not be activated until an amber alert is reached.

Table 5: Plans activated during an extreme heat event

National plans	Regional plans/policies	Local plans/policies
• UKHSA Action cards • UKHSA Adverse Weather & Health Plan • EA Drought plan	• London Strategic Coordination Protocols • London Severe Weather and Natural Hazards Framework⁹ • London Severe Weather Emergency Protocol (SWEP)¹⁰ • London Resilience Communication Group (LRCG) Comms Protocol ¹¹	• Organisation specific internal heatwave/ extreme climate risk / health plans, action cards and frameworks • Internal and supplier business continuity (BC) plans • Local plans for staff escalation, wildfire response, communications, mortuary provision, and shade deployment plans

GAINING AND MAINTAINING SITUATIONAL AWARENESS

In any emergency, including extreme heat events, establishing and maintaining situational awareness is important to understanding potential future risks and informing decision making.

Exercise participants discussed the heat-specific factors relating to situational awareness and determined the relevance of establishing that information (Table 6: **Situational awareness areas**). This is generally applicable to most organisations, regardless of their specific responsibilities.

⁸ [Strategic Coordination Protocol - Version 9.1 May 2024.pdf](#)

⁹ [Severe Weather and Natural Hazards Framework v2.5 Oct 2023.pdf](#)

¹⁰ <https://www.london.gov.uk/who-we-are/what-london-assembly-does/questions-mayor/find-an-answer/severe-weather-emergency-protocol-1-0>

¹¹

Table 6: Situational awareness areas

Awareness Area	Questions to ask	Why
Current and future weather projections (External)	When does the hot weather start and how does it progress? How long does is the period of hot weather forecast to last? Where is the heatwave happening? How will the temperature change overnight?	To understand not only the location and temperatures involved, but how they fluctuate over time. To begin to think about who or what will be affected by the heat (people, assets, processes). To assess risks to organisational objectives, to staff and to others. To start to think about the plans and strategies which might need to be enacted.
Status of organisational preparedness and resilience (Internal)	Are the organisation's plans and supplies for preparation up to date? Are there any plans that need to be activated before the heat? What actions need to be put in place?	To understand the likelihood of a successful response and any mitigating actions needed to address problem areas. To be able to start to put plans and strategies into action.
The current status of the organisation's service provision (Internal)	Is the organisation running well? Is it already dealing with any ongoing or concurrent issues (any existing/new/anticipated faults/issues being reported)? How are these being managed?	To understand the kind of organisational environment there is – heat plans will be overlaid onto this. To be able to refine plans and strategies.
Partner organisations' current service provision status and how they plan to respond (External)	How do key partners normally respond to extreme heat? What action are they taking now? What are their main concerns/risks now? How do these may interface with your organisation's risks and priorities?	To understand what you can expect from partner agencies and where your assumptions about how they operate need to change. To understand how your refined plans and actions impact on and would be impacted by partner plans and actions.
Any upcoming major events relevant to the organisation's activities (External/internal)	What key events or activities are taking place in the coming days (e.g. sports and culture, engineering, major projects or launches etc)? How might any response plans affect delivery of these? Any additional risks produced?	To understand how these things will be impacted by the heatwave directly or indirectly or will affect organisational response plans. To be able to refine response and BAU plans.

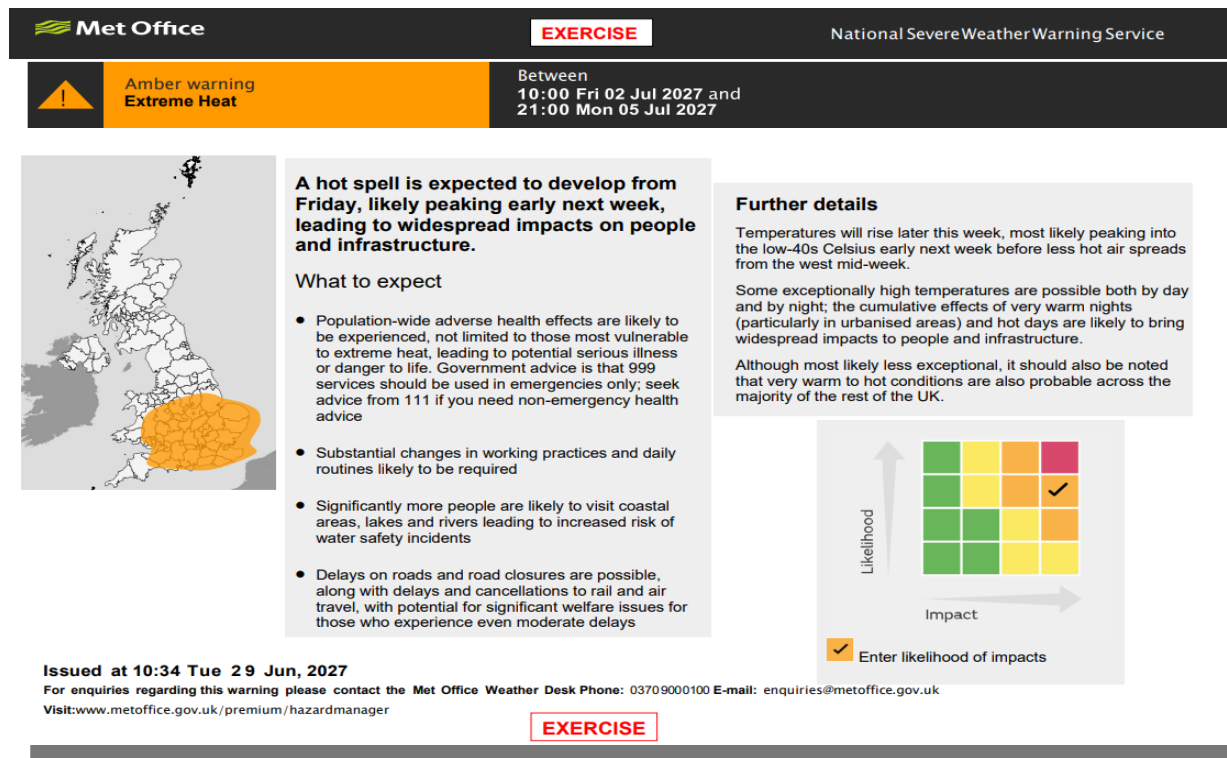


Figure 1: Example of Amber alert from the exercise

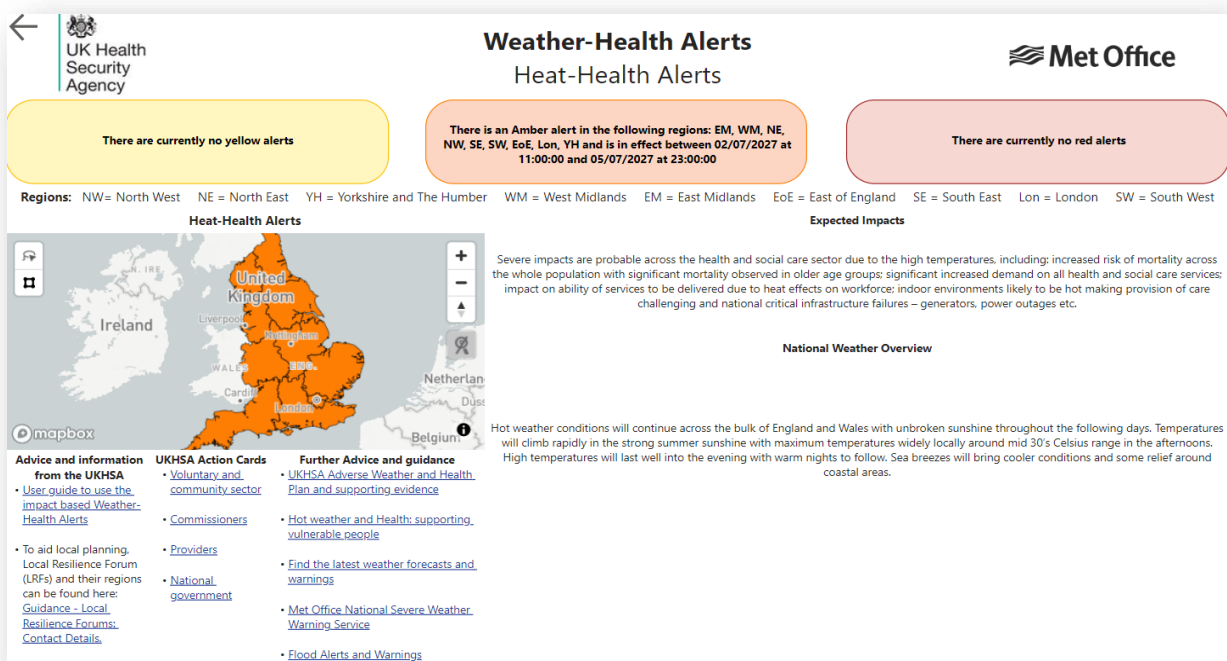


Figure 2: Example Amber UKHSA Heat Health Alert

SOURCES OF INFORMATION

A range of situational awareness and warning and informing tools are available to support London's response to an extreme heat event. Nearly all organisations access information from national sources such as the [Met Office website](#)¹² and the UKHSA website. Other national sources of information included BBC and NHS England websites and information provided by transport providers. Some transport sector organisations have access to MetDesk which provides on-demand weather information with a 5-day outlook. Utility and transport sectors focus more on Met Office warnings than UKHSA Alerts, concentrating first on the effects of heat on their physical assets.

Use of the Fire Severity Index and Met Office Hazard Manager application had more limited use and were not used by community, business or culture sector partners.

Where they receive it, nearly all organisations reported using information circulated by the London Situational Awareness Team (LSAT) and email updates provided by the Met Office advisor.

The GLA website advice on heat and cool spaces was noted by some participants and local authorities reported using the London Heat Map tool¹³ to inform their understanding of the areas at greater risk.

UKHSA HEAT HEALTH PRODUCTS

Participants were asked about their knowledge and the utility of the UKHSA Heat Action Cards¹⁴. The Heat Health Action Cards summarise the actions that providers of health or social care should consider at each Heat-Health Alert level. Primarily they are intended for managers working in hospitals, social care and other residential care settings, organisations providing primary or community health services operating from fixed sites or delivering care to people in their homes. The cards includes actions to consider all year round and in pre-summer readiness, as well as during each alert level.

Although all the tools are publicly available, not everyone in the exercise was aware of them, received them or was aware of how they were used within their organisation.

Concerning the Heat Health Alert messages, there was broad consensus that the information is useful but can be difficult to interpret. In particular when there are amendments to the alert message or extensions to the alert period.

"I find them a bit clunky and time consuming - and I'm in the field, I imagine they must be quite confusing to the public - can they not be simpler?"

Many participants noted that they would pass on Heat Health Alert information to people with whom they had existing links and where the organisation felt that this would be beneficial to the recipient (Section 3.10 on vulnerability for more information on the challenges in this area).

Inconsistency was noted in how heat alert information is cascaded internally and externally with individuals and organisations. In terms of public sharing, some organisations preferred to share a version of the information with communities rather than forwarding on alerts, which had confused and unsettled people when forwarded in a previous incident. One participant noted language within alert messaging about 'vulnerable groups' has the potential to disengage those who do not consider themselves vulnerable.

¹² <https://www.metoffice.gov.uk/weather/warnings-and-advice/uk-warnings>

¹³ <https://data.london.gov.uk/dataset/climate-risk-mapping>

¹⁴ <https://www.gov.uk/government/publications/hot-weather-and-health-action-cards/heat-health-alert-action-card-for-providers>

Alerts could include information on confidence levels of the warnings, air quality¹⁵ and pollen count, the time and date published to see when they supersede older alerts, and that the information was available in multiple languages and with improved use of infographics.

Concerning the action cards, there was less awareness. Those who receive or use them found them to be relatively simple, clear and proportionate, but noted that the guidance could sometimes be too high level to be usefully actionable. Often the action taken was to share them with other colleagues.

“It is the first time I was made aware of [the UKHSA Heat Action Card] and it is useful alongside Met Office information”,

Participants suggested more specific content relevant to other sectors and settings would be beneficial (e.g. business, culture, visitor attractions) as links to dedicated webpages.

COMMUNICATION

Nationally, UKHSA lead on coordination of information, advice and guidance in relation to heat health. Category 1 and 2 partners have duties under the Civil Contingencies Act (2004) requiring them to communicate with communities likely to be affected by an incident. Typically, this means that internal comms teams lead on their organisation-specific messaging to the public.

There are mechanisms for formal coordination through the London Resilience Communications Group (LRCG), which provides support to a Strategic Coordinating Group (SCG) or can share communication lines outside of an SCG structure being established. Feedback from participants suggests that informal discussions between comms teams across different organisations also takes place; particularly within sectors. This interaction was not explored further in the exercise but may be a useful area for further investigation.

During the exercise an LRCG table drafted some initial lines for each of the alert categories. These were presented at the end of the exercise and can be found in Appendix b: LRCG - top lines by alert. The content focused on each organisation’s specific risks and concerns. In feedback forms, participants noted their expectation that LRCG would coordinate a London-wide communication message in addition to sharing and amplifying partnership messages and lines from government. Whilst there have been recent changes to include LRCG representation in SCG calls, the discussion suggested that the communication function needed more information about the operational and strategic response to better inform communication messages. The exercise supports the ongoing work to further integrate the communications activity with the incident coordination structure.

In extreme heat conditions, various forms of communication are necessary, including two-way exchanges. Figure 3 presents an overview of the different types of information that need to be shared with various stakeholder groups, based on input from participants. Stakeholders may belong to multiple categories, and the sequence presented does not indicate any priority ranking.

¹⁵ The UK’s National Adaptation Programme 3 (NAP3) from 2023 committed to “Defra and UKHSA making access to the Air Quality and Health Information and Government Web Services available to the public and vulnerable groups by 2024” (p. 75)

Staff	Service providers/ business modes/suppliers	Sector partners	Public(s) (particularly people who may be/come vulnerable to consequences of heat)
• about the alert and the information it contains • the organisation's response plans and organisational risks • intended or current actions, • what is expected of staff - any changes or amendments to working arrangements • how they will be looked after. • how to look after other members of staff	• about the alert (and how to sign up to get future alerts direct) and what it means to both organisations • any actions the service provider should take to ensure they can continue to provide agreed services. • what actions each organisation is planning to take • organisational priorities and shared risks • What the impact is on service users (including customers for business)	• about sector activity required and knock-on impacts expected (also from service providers) • about the alert and the likely impacts on your organisation • find out what other organisations are doing and how the heat is affecting them • any key actions being taken by them • any shared risks and interdependencies	• about the alert and the information it contains • who might be vulnerable to the kind of heat expected and why this is • about preparatory action they can take • how they can protect themselves and others. • any activities they should avoid

Figure 3: Summary of the different kinds of communication needs highlighted by participants.

INDIVIDUAL RESPONSES & SERVICE PROVISION

Participants were asked to provide an overview of their organisational response activities, priorities and the risks they were concerned with. As these are quite detailed, they are collated in Appendix a: Summary of Sector Activities, Priorities and Risks.

For many organisations, a combination of direct and indirect impact will be experienced. This includes direct impact of heats on individual staff health, reduced access to a comfortable working environment, and disruption to supplies and critical utilities.

At the same time, Category 1 and 2 responders, including providers of health and social care services, will face substantially increased demand for their services. The responses from the exercise suggest that businesses may not have specific or detailed plans for dealing with extreme heat, and instead may rely on generic business continuity and crisis management plans. Cultural organisations may have plans to manage heat risk to specific assets they are responsible for, but are typically not integrated with local or regional multi-agency planning. The key strategies for managing these consequences identified by participants are summarised in Table 7.

Table 7: Expected impacts of heat and the general approaches for managing the risk.

Expectation	Examples of action
Strategies to manage reduction in staff availability, potentially increased service demand and more challenging working conditions (caused by overheating buildings, increased health risk, increased caring responsibilities, disruption to transport, emergency service provision and other critical utilities)	Reviewing personal protective equipment and safe working conditions Moving activities to different times of the day to avoid heat Changing work patterns (shorter shift lengths or periods in protective equipment) Moving at risk staff out of vulnerable positions/ rota changes Increasing staff numbers for critical locations or critical functions/activities Ceasing work in particular areas or particular kinds of activities (high risk locations, or just to reduce work footprint) Increasing welfare provision or sharing welfare provision with other services (water and other refreshments, rest areas/buildings/ vehicles, additional provision of shade/cooling areas) Increasing offer to work from home Identifying pools of staff who could be retrained and redeployed Requesting additional support (internal volunteers/MOUs within the sector/MOUs with voluntary and faith sector)
Strategies to reduce demand	Divert demand towards other modes of service delivery (e.g., online) Divert demand to times or locations less affected by heat Divert demand to other service providers less affected by heat
Strategies to address equipment and infrastructure failures	Increased supplies and preparatory maintenance Increased monitoring of critical equipment and sites Improved response rates for escalating issues

INITIAL COORDINATION

Participants outlined initial considerations for the structures and hierarchies that would be put in place to manage an extreme heat incident (set out in the Table 8 below).

Table 8: Considerations relating to the initial coordination of the response to extreme heat.

Considerations for coordination	
Triggers: - Identify triggers for activating the different level of command structure for the incident. - Identify when activities need to be coordinated more strategically.	Objectives and priorities - Confirm multi-agency strategic objectives - Confirm organisations' objectives and priorities
Meeting rhythm requirements - Establish frequency and required attendance at coordination meetings (internally /externally) - Agree information sharing arrangements from/to/between coordination meetings - Ensure effective use of meeting time - Determine reporting requirement	Action requirements - Confirm organisational plans in place - Agree key actions and priorities - Review business continuity plans and arrangements, working through checklists. - Change / divert service demand
Situational awareness - Regular reviews of current and future risks and action required to address them. - Impact of incident on other organisations' normal service provision. - Monitoring critical functions/locations and indicators which may trigger additional action or a change of approach.	Structures and locations - Confirm command structure in place - Confirm control centres/functions are ready / in place. Identify and prioritise critical assets and functions - Confirm strategic objectives (in coordination with other partners) and priorities - Amend organisational hierarchy and decision making as needed

STRATEGIC RESPONSE TRIGGERS

The scenario presented an ongoing response over several days with multiple observed incidents across the capital. The Extreme Weather and Natural Hazards Framework includes triggers for a pan-London response based on alerts which are impact-based. However, organisations may find themselves responding to additional localised impacts which are not considered in alert messages.

The overall impact of multiple smaller incidents on individual response agencies may still be overwhelming due to the scale of the response, geographic coverage and resource demands on limited capacity. Response agencies reported that the sooner the incident is managed at a pan-London strategic level, the better to have a coordinated response. In addition to the triggers already included in the Framework, Table 9 provides some additional considerations for triggering a strategic response.

The exercise highlighted that some organisations might be better placed to see patterns and trends if they have a London-wide perspective. For example, LCEP may be able to flag when voluntary sector organisations are being asked to respond in multiple locations, as this is an indicator of the strain on statutory responders.

Table 9: Additional considerations for triggering a strategic response

Triggering a Pan-London response may need to consider:

- The collective scale and scope of individual incidents, which not be apparent from the perspective of any single organisation operating in a single sector or a single part of London.
 - The interdependencies between organisations – how the response activities of one organisation can impact on partner organisations.
 - The common paths for direct and indirect consequences and cascading effects – if X is happening now, Y is going to happen soon afterwards.
 - The individual need for any SCG sub-groups or cells to be stood up e.g. Tactical Coordinating Group (TCG), Humanitarian Assistance, Recovery, Scientific and Technical Advice Cell (STAC), and in particular the London Resilience Communication Group (LRCG).
 - The need for a collective response that is working towards (and seen to be working towards) the same strategic objectives in a coordinated manner and in consideration of the limited collective resources available.
-

LEADING A STRATEGIC RESPONSE

When asked which agency would be most appropriate to chair Strategic Coordination Group (SCG) the emergency services suggested that for a multi-agency, multi-sited incident, the London SCG chair would be from a 'lead agency¹⁶' at the main incident site (e.g. fire service if dealing with a wildfire). It was, however, recognised that this may not be best given the prolonged and wide-ranging impacts of heat involving many different organisations. Longer-term recovery aspects are also likely to be complex in terms of determining the most appropriate lead.

¹⁶ Although there is clarity in the Strategic Coordination Protocol on the role of 'SCG chair' (which is to convene the lead agencies and facilitate joint strategy, situational awareness, oversee sub-groups, etc.), there is no similar guidance on the 'lead agency'.



Figure 4: Participants stand to 'vote' which organisation should chair the SCG

MPS is the default Chair of London SCGs because of their experience and knowledge of interoperability. Most responder agencies reflected that MPS would be the natural choice to chair initial SCG meetings. It was also noted that MPS may experience comparatively less impacts to their services, leaving them with greater capacity to fulfil the chair role.

Although UKHSA have an organisational focus on health, it was generally felt that their national role would mean insufficient capacity and not enough local knowledge of communities. The London Local Authority Gold¹⁷ or a representative from the Greater London Authority could take on this role, given the breadth of their organisational responsibilities. Some suggested the SCG lead could be identified at the time, from the most appropriate organisations dependant on the nature of the impact on London.

It was clear that the existing arrangements for determining an SCG chair require further consideration to address how leadership of an extended extreme heat event would work.

Table 10: Discussions on strategic heat leadership

Agency	Relevant points raised regarding leadership potential
Metropolitan Police Service (MPS)	MPS are the default chair of any Strategic Coordinating Group (SCG), but crime and public order are unlikely to be a strong focus in an extreme heat event.
Greater London Authority (GLA)	It may be helpful, given the wide range of impacts, to have a lead organisation that can bridge all of them. The GLA seemed to be the overall preferred option, given their overarching perspective, broad London focus (multi-sector but just London geographically) and local leadership through the Mayor of London.
London Local Authority Gold (LLAG)	As the incident would have a broad range of impacts on the community as a whole, it was felt that particularly in the longer term LLAG may be an effective route for leadership in recovery.
London Fire Brigade (LFB)	Although LFB would require strong leadership in order to manage their response to the fire and safety aspects of the incident, it was felt that they need capacity to focus on their own incident response without leading the response for London as a whole.
Environment Agency / Met Office	Although EA has specialist knowledge about heat and the environment, its position as a national organisation with national priorities makes it less appropriate to lead a London-level response

¹⁷ A London Local Authority Chief Executive is pre-nominated as LAG. LLAG is empowered to represent and give undertaking(s) on behalf of London's 32 Boroughs and the City of London Corporation.

STRATEGIC PRIORITIES

When asked what the collective priority for London's multi-agency response to the heatwave should be, participants almost universally highlighted the importance of establishing and maintaining situational awareness and then building a strategic and joined-up response to the impacts.

Most tables flagged protecting and preserving human health as a key priority – however determining what priority actions are needed to do that (and what other actions cannot be fulfilled given limited resources) may not be easy. Human health is enabled by the provision of a safe habitable environment which normally requires electricity, water, mobility etc. Some tables therefore highlighted the need to protect assets and critical infrastructure (e.g. water, electricity, hospitals) – because of the importance of these not only directly on individual human lives, but on the ongoing ability of emergency responders to respond to incidents.

Further work is needed to understand the circumstances by which there may be tensions between how agency priorities may conflict with collective objectives.

Other strategic priorities included protecting the environment (as heatwaves can potentially cause immediate and long-term harms to the environment) and getting communications right (ensuring the right information is getting to the right people internally, between organisations and to the public) For more on this aspect see the [Communication](#) section.



Figure 5: Tables working on understanding cascading and indirect risks of extreme heat.

CASCADING EFFECTS

Participants explored the direct effects of extreme heat on human health, buildings and the environment and the cascading secondary and tertiary effects. These effects can be because of the initiating incident, secondary incidents or how people and organisations manage those impacts. The actions of one agency in addressing the heatwave could potentially affect other organisations, communities, and individuals in the long run.

Using London Resilience's Anytown methodology, Figure 6 provides a visualisation of these consequences based on exercise discussions. Elements near the centre of the diagram are more directly and quickly related to increased temperatures. Those in outer sections are more indirect; they either need something else to happen first or they take time to emerge.

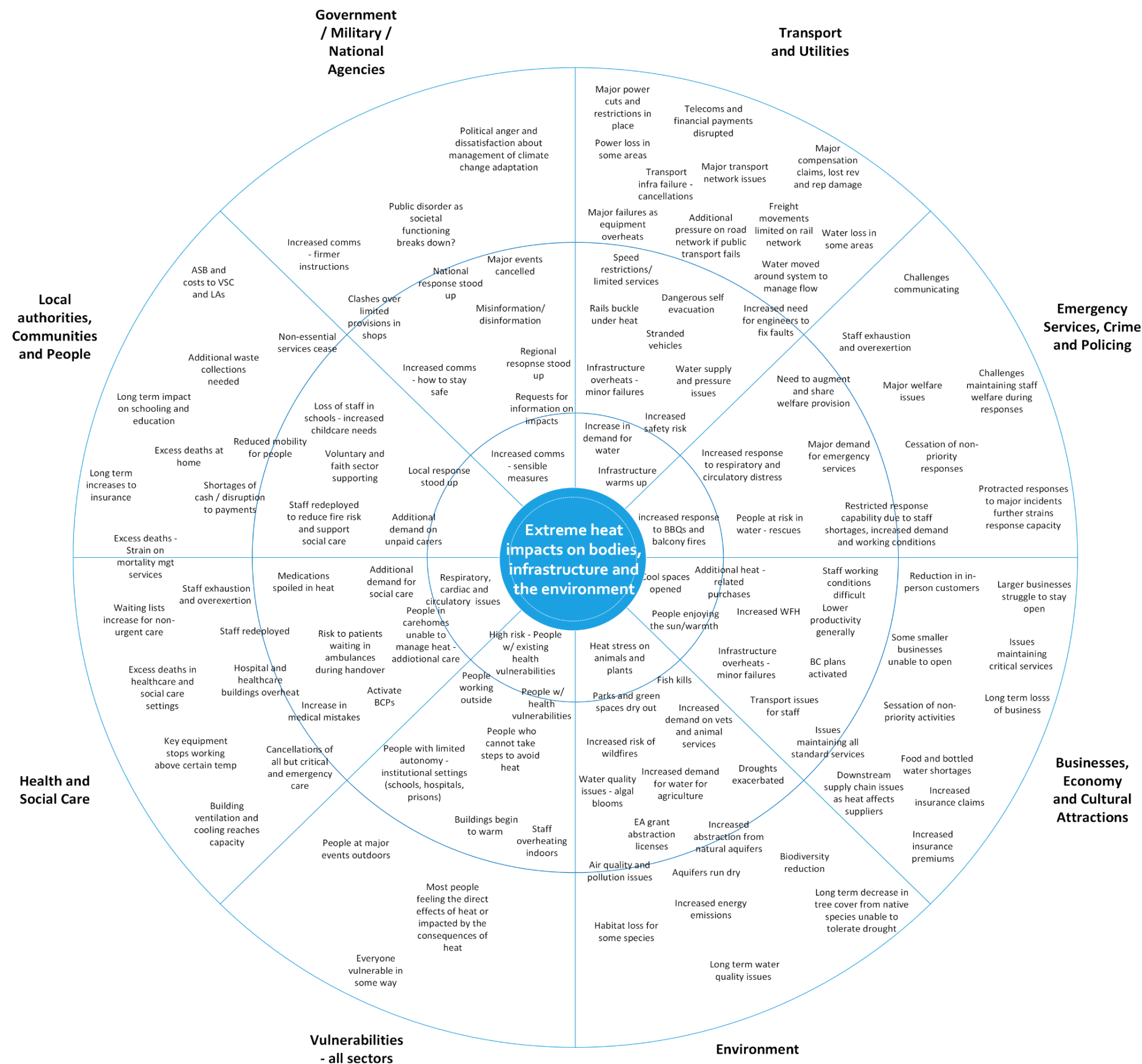
This overview offers an initial perspective of the effects of extreme heat from a multi-sector perspective. Figure 6 is not exhaustive and it is impossible to provide every potential impact on one diagram. Plotting out further iterations of the combined effect of heat on the capital will enable effective decision-making around appropriate adaptation and risk mitigation interventions.

This activity, and the exercise overall, highlighted the need for London to implement pre-emptive adaptation strategies to lessen the cascading effects of heat-related risks before they occur, rather than solely relying on emergency response. For many participants, this exercise marked their first encounter with some of the information discussed, highlighting the significant learning curve involved.

Plotting out the impacts in this manner has started to tease out the following points:

- There are common mechanisms used by various parties to address the effects of heat (see Table 7 for anticipated heat impacts and general risk management strategies). However, these approaches may not be universally applicable due to location constraints or unsuitability for certain individuals or tasks.
- When an organisation takes steps to address heat-related risks or consequences, it may inadvertently create unforeseen problems for other stakeholders. It is crucial to examine these relationships and discuss preferred solutions collectively before a heat event occurs to avoid the response worsening existing impacts. Examples of this could include:
 - shutting down a school to protect staff and students could lead to childcare challenges for parents,
 - modifying rail network operations to prevent passengers from being stranded on trains might result in overcrowding at stations.
 - efforts to cool off in outdoor water bodies could increase the need for rescue operations.
 - artificial cooling (air conditioning) might overburden the energy grid.
 - installing green walls to provide shading and air quality benefits may lead to increased fire loading if not properly maintained.
- Some consequences are not immediately felt and may not always occur but would impact significantly on all emergency services and their ability to respond, by reducing the resources available whilst at the same time contributing to the response required (e.g., disruptions in power, water, or communication systems). Understanding critical pathways is crucial in supporting decision making during extreme heat events.

Figure 6:
Anticipated
cascading
consequences of
an extreme heat
event in London



IN/EQUALITIES AND INCLUSION

The effects of climate change, including increased heat risk, are not felt equally among the population. They also exacerbate existing inequalities and disparities. Better understanding the risk requires greater consideration of these inequalities.

Participants noted the importance of having a good understanding of vulnerability and existing inequalities within communities. Engaging equalities organisations and community representatives must happen at the planning and preparation stages – not just during response.

Action around this is already underway and includes the new SCG framework (which has an agenda item to prompt consideration of those disproportionately affected) and the establishment of the London Communities Emergencies Partnership (LCEP) (which aims to coordinate and mobilise voluntary community and faith sector organisations and groups before and during an emergency). Additionally, the LCEP have been incorporated as a standing member to be invited to any SCG meeting to ensure voluntary and community sector partners are engaged at an early stage of incident response.

Despite this progress, findings from the exercise underscore the need for advance consideration of inclusion and inequalities, this includes the need for communications about extreme heat-related events to be accessible.

‘VULNERABILITY’ IN A HEATWAVE

Vulnerability was discussed at length in the exercise and work is required to specifically consider who might be or become vulnerable to the direct and cascading consequences of extreme heat.

Many organisations hold lists of individuals who are known by them to be ‘vulnerable’ in some way. These may be self-referral registers or be related to the provision of business-as-usual services. Pre-existing lists of individuals known by those providing care to be highly at risk in a heatwave are of course a good place to start. However, such lists may become out of date very quickly and may not reflect all kinds of ways in which people become vulnerable during a heatwave who were not at additional risk previously. It is apparent that many emergency response organisations take a case-by-case approach at the time of the response.

Many participants had considered vulnerability, but it was clear that for the extent to which people can become vulnerable required further consideration. Table 11 illustrates some of the ways people can be/become vulnerable in a heatwave, but eventually in an extreme heat event there is potential for the heat to impact everybody.

It was suggested that the word vulnerability might be framing the issue in a way which ultimately is not helpful, because the way it is used suggests a fixed characteristic. Participants recognised that many people are likely to fall through the cracks with existing arrangements, because their vulnerabilities may not be recognised (not just by organisations – they themselves may not identify as being vulnerable) or because information that could support them reduce their vulnerability is not getting to them effectively.

There will never be a single ‘vulnerable persons register’ that attends to all individuals who might be vulnerable. A new approach is needed to identify who might become susceptible at various stages of a heat event, how to communicate risks effectively, and when to do so. The term “impacted by heat” may be more appropriate than “vulnerable,” as people often disregard advice if they don’t perceive themselves as at-risk. This broader terminology also encompasses those indirectly affected by heat’s consequences on structures, the environment, and infrastructure. A more effective strategy might involve analysing who is affected by heat, in what ways, at what times, and for what reasons, then tailoring communications accordingly.

Table 11: Sets out the factors that participants identified as contributing to heat-risk vulnerability.

Broad category	Examples
People with heat-induced or pre-existing health conditions	• People with existing sensory impairments – may not be able to sense they are hot • People with mental health issues • People who are neurodivergent • People with other clinical presentations which would make them susceptible to the heat (general poor health or chronic health conditions e.g. Parkinson's, respiratory or heart problems, on particular medication). • Particular demographics (e.g. pregnant people, the elderly and children)
People with limited ability or autonomy to move somewhere cooler /to cool their environment (cool spaces, shade, artificial cooling or ventilation)	• People with mobility impairments (the elderly, people recovering from injury) • People trapped on any kind of transport - in particular rail or underground. • Groups in specific types of accommodation (e.g. high rise, rural/city boundary). • People in public event spaces, mass gatherings. • People who work in hot offices/vehicles, not just those who work outside. • People working outside normal settings or arrangements to respond to heat, or unfamiliar places / PPE (e.g. engineers, repair workers, redeployed staff) • People who work underground or in other enclosed spaces. • Emergency service workers responding to heat impacts (e.g. firefighters responding to wildfires) • People who are in poor quality housing which overheats more easily and without access to alternative housing or means to cool it (asylum seekers in hotels / refugees, socioeconomically disadvantaged, those in temporary housing, transient populations) • People in institutional settings with limited ability to leave or control their environment (some individuals in schools, custody suites, prisons, hospitals, social care settings)
People who take additional risks or are subjected to additional risks because of the hot weather	• People under the influence of alcohol and or drugs • People going into bodies of water to cool off (risk of getting into difficulty in water) • People who leave doors and windows open to cool off (additional security risk) • People at major events (sports, music or cultural) outside in direct heat (additional heat risk, limited shade, potentially limited access to hydration).
People who may not know what to do	• People who do not have English as first language and who may not receive or understand comms messages • People who are new to London and don't know their way around / where support facilities are, with potential communications issues (tourists, visitors). • People who have trouble understanding the messaging that is being put out and how to respond to it.
People affected by a loss of support or services cause by heat	• People affected by disruption to infrastructure, including critical national infrastructure (CNI) – those relying on power for medical devices, loss of emergency call functions etc. • People who do not have access to support they need (e.g. those who rely on informal carers or care workers who are overstretched or delayed because of heat)

IMPROVING THE RESPONSE

PRINCIPLES AND THEMES

A recent UN (2024)¹⁸ report on extreme heat and the London Climate Resilience Review (2024) both identify that more needs to be done to prepare and protect our communities and infrastructures, to reduce the overall impact of heat on our communities and emergency response.

Emerging from multi-agency discussion during the exercise, London's preparation for and response to extreme heat must be informed by four overarching principles outlined below.

- **London's response to extreme heat must involve more cross-sector collaboration both in the planning and response stages.** This means involving all relevant stakeholders in the right conversations (e.g., resilience teams working with climate adaptation teams, increased engagement with the voluntary and community sector, improved information for housing organisations, leisure organisations, event organisers, and businesses).
- **London must take action to bridge knowledge gaps.** This means reducing the gaps between where knowledge resides and who knows what: reducing knowledge inequalities between different sectors is critical to enhancing resilience across society.
- **London must improve communications strategies and information flows when responding to extreme heat.** This means that everyone should have access to quality authoritative information about what is happening and what they need to do.
- **London needs to address inequality within planning and response to extreme heat events.** Plans and preparations must better acknowledge that extreme heat exacerbates existing inequalities and provide equitable response solutions.

This report discusses the findings of Helios and makes 15 recommendations grouped into five themes, that if implemented should improve the resilience of London to extreme heat.

- Theme 1: A strategic approach to extreme heat risk
- Theme 2: Learning and Evidence
- Theme 3: Regional and local planning for heatwave response
- Theme 4: Strategic communication
- Theme 5: Addressing inequity in heat risk and risk management

¹⁸ https://www.un.org/sites/un2.un.org/files/unsg_call_to_action_on_extreme_heat_for_release.pdf

RECOMMENDATIONS

Theme 1: A strategic approach to extreme heat risk

Given the dispersed nature of the hazard, efforts to respond and manage the risk will require coordinated action across sectors. This applies to both the emergency response and the effort to adapt in the longer-term.

There is no single organisation or governing body responsible for leading or coordinating the required multi-agency response to climate adaptation or to extreme heat events, nationally, regionally or locally. However, London has developed a strategic approach to another risk that, similarly, requires cross-sector action and has no clear owner: surface water flood risk. The London Surface Water Strategy Group¹⁹ brings together key partners to develop a strategic ambition and identify specific outcomes to manage the risk from flash flooding. A similar approach could be explored with heat risk.

During the exercise, participants felt comfortable with the robustness of London's response arrangements but organisations outside the official Category 1 and 2 responders have less knowledge about the plans, less involvement with response structures, and less confidence that their sectors' concerns would be addressed. They felt that a more inclusive approach to planning and response is needed, bringing in voluntary, faith, community groups, housing associations, social care providers, businesses, and leisure and culture sectors.

We therefore support the findings of the London Climate Resilience Review and encourage, in addition to a review of the London Severe Weather and Natural Hazards Framework, an integrated approach to strategic heat planning is taken which addresses London's overall resilience to heat. This should take into account the emergency response, the longer-term infrastructure planning and the societal aspects of strategic heat management.

Recommendation 1: The GLA should produce a London-wide strategy for managing extreme heat which includes adaptation, risk mitigation response and recovery with appropriate resourcing, cross-sector commitment, and well-defined roles and responsibilities.

Theme 2: Learning and Evidence

Strategic planning and response must be underpinned by robust data, evidence, and learning from past events in London and elsewhere (including outside the UK, where other communities are managing heat risks on a more frequent and regular basis). Some boroughs cited the GLA's climate risk mapping, which includes data on heat risk and social factors contributing to vulnerability. Several boroughs have used this information to target interventions, such as provision of water fountain and cool spaces²⁰, as well as longer-term adaptation interventions to avoid overheating and reduce the urban heat island effect.

Participants said that London's response structure and incident response framework are broadly suited to supporting a collective response to an extensive and protracted extreme heat event. This could also be improved with additional tools and resources specific to extreme heat and to particular settings or sectors. For instance, improved understanding of where heat will have the greatest impacts could help inform resource prioritisation decisions during response.

Recommendation 2: Extreme heat planning should be evidence-based, and evidence should be made widely available to enable all partners to take appropriate action.

¹⁹ <https://www.londoncouncils.gov.uk/news-and-press-releases/2024/london-surface-water-strategy>

²⁰ <https://apps.london.gov.uk/cool-spaces/>

There is a need to think at a systems-level to respond to the interdependencies between different organisations and sectors, and the potential for specific cascading consequences in relation to an extreme heat event. London Resilience has done work previously to help partners consider cascading impacts and concurrent events leading to disruption (e.g. in relation to wide-scale power loss), and the exercise produced an initial overview of heat-related cascading impacts across different sectors.

More work could be done to understand the pathways for cascading effects to develop ways to reduce their impact. Some in the exercise perceived that the processes for managing cascading impacts are not articulated sufficiently well in shared plans, and that it is not clear in practice what “good” management of interdependencies looks like.

Recommendation 3: The GLA should convene a working group of relevant stakeholders to establish and share more detailed understanding of the different heat-related risks and pathways of cascading impact. This information should be used to inform:

- The makeup of a strategic group to develop the Strategic Extreme Heat Plan (Rec: 1)
- The refining of individual organisation plans
- The production of sector-specific briefing and engagement materials and methods

Exercise participants noted that London may be able to learn from other cities and countries that experience extreme heat about their approaches to response.

Recommendation 4: The London Resilience Forum should undertake a review of heatwave response arrangements and learning from other cities with similar characteristics to London. This should include response to heatwaves and potential concurrent emergencies (such as wildfires, water scarcity and power cuts).

Theme 3: Regional and local planning for heatwave response

While a multi-organisation partnership response to a heatwave is needed, the exercise highlighted that it was not clear who should lead that response, or how it would be triggered. Pan-London emergency response plans and arrangements would likely be stretched in the case of multiple concurrent cascading events and impacts triggered by extreme heat. Multiple organisations would need to be brought together quickly, some of whom may not be part of the typical response to other kinds of major incidents. It was not clear to all participants who would lead the response and provide clear direction.

If a heat incident were protracted and an extended response activated, participants felt that a mechanism would be needed to inform the prioritisation of resources to enable activities and curtail others or action in one area over action in another area. This kind of decision-making has the potential for exacerbating inequality and unfairly impacting areas, communities and individuals who therefore do not receive the support they might need. Despite the clear articulation of generic strategic objectives and priorities for any major incident, it was not clear how urgency would be determined, and how decisions about prioritising and use of finite resources could be determined in a collaborative way and in a way which acknowledges the negative and positive impacts of any option considered.

This process would require comprehensive situational awareness across all sectors, including areas outside London, as well as understanding of the potential interdependent effects of any considered option.

Recommendation 5: The London Resilience Forum Severe Weather & Natural Hazards Working Group should review the arrangements for strategic coordination (and provision for transfers of lead as the situation develops), expand the set of triggers for taking action, and describe a process for cross-sector impact assessment and decision-making.

To ensure that a strategic heat risk plan is delivered in practice, the plan would have to be complemented by planning and activity at the local level.

It would be beneficial for resilience partners to have access to a suite of tools to support their heatwave planning. This could include introductory briefing and guidance materials (including the learning from Helios, other exercises, case studies), a template heatwave exercise, a generic heatwave plan, and further resources.

Recommendation 6: London Resilience Partnership organisations are encouraged to develop, or review and update, their local heatwave response plans and arrangements.

Recommendation 7: London Resilience Partnership organisations should make use of the available briefing, training, and exercising materials to support local heatwave planning.

All organisations will need to take some action in response to extreme heat. Organisations who are not statutory responders should be encouraged and supported to develop plans appropriate to their organisational purpose and legal obligations, so that they can respond to the challenges of a heatwave. Many organisations participating in the exercise did not have the required level of risk awareness and understanding of what needed to be included in their own plans and would benefit from additional support to do this.

Business and leisure sector representatives attending the exercise reflected that their knowledge of London's heat response plans, and actions they could take to support themselves in a heatwave, is limited. There is an opportunity for greater resilience community interaction with the business, leisure and culture sector through key business-facing support organisations and business leaders.

Like local (voluntary) responders, businesses asked for guidance to help them take action to prepare and respond. Material tailored to the needs of businesses could help them better understand the wider risks to their employees, operations, premises, and supply chains—and take action to manage these. Businesses could also play a role in supporting the wider societal resilience of their local communities.

Recommendation 8: The LRF Business Sector Panel, in collaboration with the GLA Climate Change Adaptation team should consider the provision of advice to support business resilience to heatwaves.

Other sector experts in attendance felt that further briefings and exercises for their sectors or geographic areas would be helpful in informing their heatwave response plans and arrangements and ensuring that they are fit for purpose. This would also raise awareness amongst smaller organisations who may not have a London-level presence. Briefing and training materials produced for local plans could also support wider sector heatwave planning.

Recommendation 9: London Borough Resilience Forums, and other sector-level groups (e.g. health and social care) should deliver local extreme heat briefings and exercises involving relevant stakeholders to raise awareness, disseminate learning and inform local and sectoral plans.

Theme 4: Strategic communication

Participants agreed that any heatwave response would have to be supported by a coordinated pan-London communication strategy developed collaboratively with input from multiple stakeholders. The effects of heat will be felt by all Londoners and in all organisations, and the communications strategy should ensure that communications methods and content are appropriate and adequate for different groups' needs. Key messages should acknowledge the multi-agency response, the challenging decisions that need to be taken to manage the incident with finite resources.

The London Resilience Communication Group (LRCG) should be at the forefront of this activity, supporting multi-agency public communications in extreme heat events that build on longer-term heat literacy

campaigns²¹ and provide cross-sector stakeholder-specific advice. Participants noted that communications teams must consider the number of messages people receive on a regular basis and be aware of “notification fatigue,” which could cause people to ignore key messages potentially critical to their safety.

A coherent and integrated strategy could help alleviate this problem. Key elements of effective heatwave public messaging identified in the exercise are set out in table 10. These are provided as an initial starting point for the Heatwave Communications Strategy and may be refined.

Table 12: Suggested ‘top-lines’ style content

Key elements of joint messages:
Safety messaging to Londoners: • What actions you may/should/must take (and strength of the instruction – e.g., stay hydrated, plan journeys or make shorter journeys where possible, consider the impact of drinking alcohol on your decision-making ability) • Strong messages about prevention of further impacts, e.g., fire safety messaging about use of barbecues on balconies and in open spaces, swimming safety advice • Check in on friends and neighbours, especially those who are vulnerable
What London is doing collectively to respond to the heat • What does that look like now • How is that likely to change in the coming days
What impact the heat is having on normal services (e.g. expect delays as there are high demands for 999 responses and reduced water/electricity)
General lines – messages each organisation should be amplifying (examples could include some of the following: • London is having a collective hard time. We’re all in it together. • London emergency responders are under pressure and working together to respond to the impact of heat. • You may notice a difference in the time it takes to respond and the ways in which we respond in comparison to normal. This is because of the number of incidents we’re responding to. • Keeping safe can help prevent extra pressure on emergency responders.

- Recommendation 10: As exists for flooding and drought, LRCG should develop a coherent and integrated public communication strategy for extreme heat.**
- Recommendation 11: London Resilience partners should review their own internal / external communications strategies for extreme heat against the LRCG strategy, ensuring they are fit for purpose.**

Participants noted that the different heat alerting systems from the Met Office and UK Health Security Agency (UKHSA) could cause confusion and potential “alert fatigue,” especially given climate change and the expected increase in the frequency of hot weather events.

One option for reducing the number of alerts would be for the content of the UKHSA Heat Health Alerts (which are heat health focused) to be folded into Met Office Severe Weather Warnings (which focus on weather as well as some of the impacts of that weather), so that any heat warning, also includes UKHSA details about expected heat health impacts and other non-health impacts (e.g. travel disruption).

²¹ E.g. wider public safety campaigns about living well in heat, rolled out over a longer period of time before a heatwave.

Recommendation 12: UKHSA and Met Office should review the feasibility of including Heat Health Alert content in National Severe Weather Warning Service alerts.

Currently, there is limited use of visual aids or maps of incidents to support the management of incident responses in London. Participants agreed that the type of map produced to facilitate the exercise would be beneficial for sharing real-time information and situational awareness to inform strategic and local response to a protracted range of concurrent responses within the context of a heatwave. Participants, including those who are not from traditional statutory sector organisations, also expressed a need for clear flows of information that are accessible to those most at risk, and to those working to reduce harm and inequality.

Recommendation 13: The London Resilience Partnership should examine the potential to develop a visual mapping tool to show live incident information. It should also take action to make this (and any other relevant) information available to all relevant partners during the response.

Theme 5: Addressing inequity in heat risk and risk management

Participants called for further work to enable organisations to support those most vulnerable to heat risk and promote equity in the extreme heat response mechanism. This could take the form of resources (e.g., a tool or guidance document) that helps decision-makers consider potential disproportionate risks to different communities (or individuals) as well as the potential distribution of benefits when planning for resilience. It could also raise awareness about the different ways that people could become vulnerable in an extreme heat event and what is needed to support them or to enable them to help themselves. Such a project would involve public health, equalities groups, community resilience, and other partners, and would learn from/build on existing international good practice.

Recommendation 14: The London Resilience Partnership to lead in developing a resource to help partners understand the concept of becoming vulnerable in extreme heat (and other emergencies), how heat risk might be disproportionately felt by different groups and individuals, and how to promote equity in resilience planning.

It is important that plans and measures to respond to extreme heat avoid transferring risk to other locations or groups without additional measures to support those affected. An Equality Impact Assessment process for heatwave planning could be an effective way to highlight any disproportionate negative impacts on individuals or groups. How this works in a multi-agency context needs further consideration to ensure that perspectives, local knowledge and lived experience can support will provide statutory responders with crucial understanding of their communities' needs.

Recommendation 15: The London Resilience Partnership should explore how the Equality Impact Assessment process could be used in development of plans for extreme heat (and other emergencies) .

CONCLUSION

Exercise Helios found that while a range of plans and practices exist to support to a relatively short-term heat wave, both at a London level and also within individual organisations (statutory responders and other organisations operating in the capital), these plans:

- Need to be developed/reviewed based on:
 - The anticipated cross-sector impacts and interdependencies,
 - The disproportionate impact of heat and heat response on different organisations, communities and individuals.
 - The critical pathways between risk, hazards and mitigating actions being taken.
 - The temporal (time, timings, and chronological ordering) aspects of protracted heat response
- Need to adequately describe the priorities and processes for decision-making and coordination.
- Should recognise that heat-vulnerability is not a static characteristic and changes with time and circumstance.
- Need to be developed and shared with the involvement of a broader set of stakeholders other than statutory response organisations.
- Must be supported with a strategic and coordinated communications approach.

The 15 recommendations provided in this report are intended to address these challenges. The next step is for London's resilience community to start to address the recommendations to close the gaps identified.

Some of this work will need to be done at an individual level, whilst other recommendations clearly call for more collaborative and systems thinking approach. There are already further sector-based workshops planned to continue to explore and act in response to some of the themes, questions and challenges raised by Exercise Helios. London Resilience Unit will be available to support and signpost organisations to the nearest opportunity to take action.

APPENDICES

APPENDIX A: SUMMARY OF SECTOR ACTIVITIES, PRIORITIES AND RISKS

The following table summarises the position by sector of the response to a heatwave, based on the responses provided in the exercise. It outlines the primary risks the sector or organisation focuses on, what preparatory activity might take place, how that would ramp up in the event of an amber alert, and what a protracted heatwave involving a red alert might involve. This table in combination with the overview of direct and indirect cascading effects will need further review and only contains a certain level of detail. It does however, present an initial picture of the current anticipated response to an extreme heatwave event in London.

Sector	Immediate risks, consequences and concerns	Immediate actions – yellow alert/preparation	What would an additional increase in temp mean?	What would a protracted incident mean?
Health and social care	NHS – an increase in the number of people attending hospitals due to the impacts of heat related health, pressure on the whole system. NHS – Risk of health of vulnerable patients being exacerbated by being in the back of an ambulances for extended periods due to hospital handover delays NHS – Concerned about maintaining the health and safety of responders NHS - Heatwaves can also disrupt the provision of health and care services, for example, failure of medical devices such as MRI scanners, failure of cold chain for vaccine supply.	UKHSA considering opening cool spaces which complement the guidance in the Adverse Weather and Health Plan. They are local venues that offer a chance to rest and recover, a place to cool down, sit down and get fresh drinking water. NHS – Contact with ICBs/trusts to ensure they are looking at contingency measures. NHS – speak to hospitals and ambulance about reducing ambulance handover times, so that people are not stuck in the back of ambulance in the heat exacerbating conditions. UKHSA – Sharing alerts, ensuring that partners are aware of the impacts.	All - The whole population would be involved rather than just those initially identified as ‘vulnerable’. All - The impacts on organisational service delivery would be starting to kick in. UKHSA – More coordination of information sharing to look at the wider impacts. UKHSA - Liaising with orgs (e.g. Met Office, LFB), on risks and impacts to be communicated to the partnership. UKHSA - would be liaising more closely with the extreme Events team to review the impacts. UKHSA - cross-cutting risks/ impacts and share situational awareness via weekly London Resilience Partnership call. NHS – Ensuring that BCP are enacted and that internal on call Golds /Silvers are aware of the alerts.	NHS - Likely to see an influx of heat health related patients putting the system under greater pressure when it is very warm. NHS - There may be a need to cut down on some services to focus on critical activity during this heat period.
Emergency services	LAS – concern about vulnerable people, in particular those with respiratory issues LAS - increase in demand incl. elderly and very young / vulnerable people. All treatable but increased demand. LAS - Risk information shared via partnership calls or bilateral, and via ICBs and NHS England reporting routes. Maintaining service delivery and resourcing. LFB - impact on resourcing / operational response for increased wildfires / number of calls – risk of overwhelm. Risk on business-as-usual activity maintaining ability to respond to normal emergency calls and extreme demand. MPS/CoLP – would be focusing on saving life, maintaining staff welfare, maintaining staff resourcing, risk of increased public disorder, medical interventions and transport disruption MPS/CoLP – Risk of impact on other emergency services leading to impact on policing services in support. Increase in public disorder potential in hotter weather.	All – Importance of early partnership coordination/info sharing (particularly on risks) /discussions, and participating in those calls. All - Reliant on LR strategic coordination arrangements / information sharing, and early convening of Golds for a period of days in advance of amber/red warning - need to be sufficiently sophisticated about nature and detail of situation and forecast. All agencies – arranging for staff welfare provision for support across multiple large incidents - potential for aid across emergency services (e.g. MoU for driving LFB to incident scenes). LAS - Briefing out to command structures. LAS welfare vehicles. LAS - Notifying public events and planning for those. Briefing and comms to frontline officers (sharing UKHSA advice), support services, catering, buildings, power, vehicles - sufficiently supported/maintained. BTP - BAU for BTP, but be internal comms going out.	All - Emergency services’ priorities unlikely to change significantly, as they would have prepared for amber during yellow period. All – They would now be fully implementing prepared actions (comms, engagement, staff welfare, resourcing posture etc), and would stand up strategic response arrangements (internal / partnership), with meetings on a daily basis. MPS/CoLP: more internal briefing and messaging but balanced – risk of message fatigue. BTP - would distribute information with key contact details. A full force planning unit would be in place in case trains are cancelled or stranded. BTP - Continued focus on staff wellbeing and comms. BTP - Non-urgent training would be cancelled, and staff deployed to stations. BTP - Drone team would be supporting Network Rail, looking at highly vulnerable groups and hot spots. LAS - Liaising with NHS Trust Golds, expecting further increased call volumes, which could lead to activating the Critical Safety Plan. LFB - Strategic daily briefings, duty officers would be brought up to speed, Brigade coordination centre would be activated and a decision-making matrix used.	All - In rhythm of pan-London partnership calls. Partnership/SCG calls/meetings depending on incident. All - Localised losses of critical services/functions (power, water etc). Enacting BC plans / strategic coordination arrangements as needed. Assuming services are stretched and limiting response to incidents / prioritising calls, would be a need to share this information with partners. LFB - Increase in balcony/park fires - would ramp up comms to communities and via partners including local authorities, housing associations etc. Challenge of balance between risk and putting people off calling the LFB / emergency services. LAS - May reach triggers for advising organisers to cancel major events (e.g. sports, music) unless event safety can be guaranteed by organisers. Advisory only - decision is the event organiser / potential local authority powers. LAS - maximising staffing, internal strategic coordinating meetings, authorize overtime incentives LAS - Increased cumulative impact on resourcing, welfare and capability – managing these will be a challenge and require planning / coordination. Planning ahead for specialist assets and staffing, incl. equipment and command support vehicles. LFB - Brigade coordination centre running, making decisions about not attending fires/prioritizing types of calls. Do so early to preserve crews and response. Consider day vs night shifts. CoLP - staff welfare, no big change to BAU plans, more consideration for WFH. MPS - track staff absence, pan London meetings rhythm, Partnership calls, BC plans activated for power outages
Communities and people	LA - Anticipating business continuity issues and needing to maintain welfare of frontline staff LA - Practical deployment of measures - how can you get things in place at this stage (before the incident), so that if goes to Amber everyone is ready. LA - Social media, intranet site for staff, community information screens. It is about signposting to where there is accurate information - UKHSA info.	LA – Working with commissioned services to make sure they know what to do and have the right information LA – Disseminating heat health alerts and information to residents and key partners. LA - Communicate to most vulnerable. Thinking outside the box of how we can get that information out to the most vulnerable. LA - Social workers talking to most vulnerable / care workers who are going into homes	All - Identify and support any additional at risk / vulnerable individuals / groups and review actions on UKHSA cards All - Delays on transport networks affect staff travel in/to/from work. LA - Increasing the level of comms - additionally through schools as this might attenuate/avoid language barriers. LA - Activating BC plans (depending on loss of utilities, staff etc). Staff welfare for inside buildings as well as outdoors. LA – Incident command structures - establishing LA Gold. Alerting BRF Chair in case emergency BRF meetings with partners required.	All – Communicating widely that risks remain in place and actions to take – increased risk as it continues – stronger tone to any messages (e.g. Only travel when necessary). All - Considering resource availability over low staffing times such as evenings and weekend. LA – Set up strategic command and BRF - depending on any live significant incidents locally potentially opening the Borough Emergency Control Centre (BECC) - ensuring continuity of Council services (BC plans), maintaining Situational Awareness over weekends. LA - Standing up the impact assessment mechanism.

	LA - Home visits to clients who would be visiting anyway. Issue with using only electronic ways of comms. LA – Overheating in education and healthcare facilities (places where people have restricted mobility/control over their movements) LA - Key risk is Alert Fatigue: having so many alerts can cause this – some boroughs only send out amber alerts. Vol sector / Faith - Cascading information through faith community Vol sector / Faith - Getting people to check on neighbours.	LA – Remind key partners (incl. vol sector) of the plan LA - Encouraging those who are known to be vulnerable to sign up to getting alerts directly. LA - Contacting local event organisers with events during the alert timeframe to make aware and to take measures. GLA - Funding, public awareness issues with response. GLA - Activation of cool centres in summer season. GLA - Activation of rough sleepers' centres and review SWEP arrangements. Housing – Look at potential messaging to customers to advise them of the yellow alert, warning of the impacts of health in the heat and ways to reduce vulnerabilities, i.e. stay in the cool. LCEP - Cascade alerts to voluntary organisations	LA - Review staffing supply and demand in order to coordinate with the voluntary sector. Potential issues with education and social care. GLA/LA - Would want Gold and Silver command across local authorities in order to make big decisions. There needs to be coordination of activities and decisions. GLA/LA - Review major events and potential impacts on safety. Probably still going ahead but thinking carefully about things (see emergency services). Considering messaging about water safety. GLA – Implement Severe Weather Emergency Protocol (SWEP) from morning the alert (red/amber) is valid: activate controls, staffing and setting up appropriate coordination structures. GLA – Establish London Resilience Communication Group (LRCG) to coordinate public communications activity. LCEP - Engaging with partners standing up volunteers (e.g. BRC). Prioritisation borough resourcing requests. LCEP - Organisations communicating /coordinating actions on various comms routes - Slack, emails, WhatsApp and online meetings. BRC - Gearing up volunteers to increase their participation - likely to receive additional requests for support.	LA - Redeploying enforcement teams to look at parks – discouraging BBQs, managing waste, impact on general services. BRC - Active at this point, supporting the LAs with any evacuations, supporting water supply issues, limit to how much they could offer across all of London - would have to work with partners about where to prioritise services. LCEP: BRC, Salvation army, St John's ambulance will be fine with time going into weekend as 24/7.
Transport and utilities	NR - internal comms, external engagement with industry partners Train Operating Companies (TOCs), Freight Operating Companies (FOCs) to look at risks. Rail – Risks particularly around stranded trains and passengers, speed restrictions and needing to limit services. Risks to passenger health and also that people would be stranded (particularly tourists and those attending events?). Rail – risks to staff undertaking engineering works and delays to major engineering projects. TfL UG - risk programme based on the weather predicted especially after 30deg. TFL UG – welfare of people on infrastructure and all actions in the process aim to address that. TW: looking at demand/supply. Sites into supply that aren't normally running as part of the flushing programme. UKPN: 3days out standard procedure to staff. Hydration to staff. National Grid: No risks were highlighted.	TfL: horizon scanning looking at what events are happening in the coming days alongside the weather assessment -UG flows based on the movement of people. Looking external factors. TfL- Activity not necessarily related to yellow UKHSA. TfL - TfL action not related to the UKHSA assessment. Using own assessment and checklist and looking at public communication on the network. TfL - Managing assets on the footprint that is what TfL working towards at this point to control the environment. Rail – comms around carrying water and planning journeys. Considering comms for any major events and people with booked tickets. Rail – reviewing rail risks collectively – identifying any key industry hotspots and major events affecting rail traffic. National Grid - No specific action – would be BAU.	All - establish and maintain relevant command and control structure and identify appropriate reps for any SCGs. Expecting emergency services would be stretched/longer response time. Managing staff welfare issues if outside. Transport – amend comms strategy to match what is required of passengers, using pre-scripted comms message to public. TfL UG - Amber alert would not trigger anything specifically. A full command and control structure would already be in place (incl. directors and extreme weather group), monitoring faults and major incidents and preparing for it. TfL and Rail – Get engineers to fix outstanding asset faults. Some older locations may not provide good working conditions for staff welfare. TfL and Rail - An increased risk of vegetation fire risk to monitor. Signalling runs on a different power network and failure would have a national impact (stranded trains and passengers). TfL and Rail – potentially re-allocating staff from non-critical services to those which need bolstering. NG – System prepared for responding to an emergency - tactical level response to outages. Ready to react responsively to failures NG: Reviewing the power outage plan and whether any pre-emptive actions are needed e.g. look at particular overhead lines that may be affected by potential wild fire. TW - Feeding info into modelling about output, reserve levels, historic data, iconic historic locations etc.	NR - Infrastructure will buckle as rails expand. Critical temp failure due to consistent high temperature. Knock on health impact on passengers’ health (aircon on trains up to mid 30s). Infrastructure failure a major risk - stopped trains = high risk people self-evacuating onto live rails. Rail - Real concerns the temp impact on materials for rail, bridges etc. There may need to be changes to scheduled engineering works (either due to impact on staff welfare or the materials being used in high temps), which would have a knock-on effect long-term projects. Rail – NR expecting govt direction. Concerns is the wider national service. Limiting passenger service as part of prioritisation. Sparks from rail lines could ignite wild fire in the surrounding areas. Tolerance of the building and the electrical infrastructure will be highly impacted. Massive spike on people going to beaches. Rail – limited resilience on telecoms and major impacts on the rail network if there is a wide scale power outage. TFL: Buses overheating in this temperature. TW - Joint message on water sector on using water wisely. Impact on water quality in reservoirs. Lower quality water goes into the treatment plan and need more chemical to clean. Waste treatment will fall over. Rail and TW – resilient comms issues. NG and UKPN have resilient comms in place.
Business, culture and visitor attractions	Business - Concerns about staff welfare for commuting to the office, staff whose home working conditions would be more detrimental to their health than the office, consideration for the working day hours. Business - There are no maximum temperatures for workplaces making it more difficult to determine how businesses can and will adapt to these periods of warmer weather. Business – concerns around childcare issues where nursery buildings e.g. would be closed (building overheating or understaffed) - staff with caring responsibilities may need to look after dependents. Additional AL requests. Visitor attractions - Volunteer staff working at attractions might be an older demographic and so could be more prone to health-related impacts. Visitor attractions – risk of visitors getting stranded in London. What joint comms is needed?	All - In Yellow warning periods staff and business considerations are more likely to be for the impacts on the team All – Reviewing and or taking actions for staff welfare if staff must be in workplaces that are hot – limiting cooling to key spaces. Business – yellow alert likely be heard as a warning so consideration rather than clear actions taken until the weather warning develops further Business – reviewing checklists relating to BC actions for loss of staff or loss of building (overheating / unsafe inhospitable conditions) Visitor attractions - Theatres for example may have to consider cancellations of shows if the weather increases given impacts of heat on both performers and audiences.	All - In amber/red alerts the response might be more personalised considerations i.e. who might not be working instead of the team might be less productive. All - Everyone suffering because the impacts are more acute for everyone. All - Delays on transport networks may affect staff travel in and to/from work. All - Some building infrastructure would be starting to fail based on the heat. Designed to withstand 30/31 degrees 70 years ago, they now can't withstand 25 degrees. All - Maintenance regimes are going to be critical (arguably before Amber). Look at clean filters, ensure everything is running efficiently to reduce risk of failure. All - Some larger organisations have contingency plans in place for staff, but smaller/medium sized firms are less able to do so where they have smaller pools of staff. This means the business might not be able to function if not able to fill critical roles and this creates the conflict of demands for business owners.	All – Taking serious look at critical functions and looking at what services can continue or must continue. Establishing incident management arrangements - look at stopping some non-critical business services All - Employees may be considering self-preservation and may not want to come to work. Impacts on resourcing and BC actions, e.g. split shifts or earlier hours or reducing from 3 to 2 staff but swap out earlier. Visitor attractions – Organisations like V&A unlikely to close. Some premises would be cool space so offer refuge for members of the public that might not otherwise be visiting, particular if local. All – Impact of maintaining services over weekend / protracted incident. May need to have emergency meetings to project forwards into next week. May need to take brave decisions in advance of any extensions or escalations of the heatwave. All - Element of reputation management - how to approach coming week (making staff come into a heightened risk environment vs tell staff to stay away but no heat escalation means staff lose confidence in information provided). All - Potential disparity between larger businesses with the capacity to support staff and pause elements of work vs smaller businesses who cannot operate with reduced staff.

National agencies	Mil – No major concerns – risks relating to movements outdoors - physically training / exercising / duties / parades EA – Risks are predominantly around increased risk of wildfires (dry vegetation/heathland catching fire), fish death, water quality issues, pollution, waste fires. EA – Additional risk to people using water courses, related danger/misdemeanours – in relation to other water quality issues and effluent. MoJ – Risk of overheating in prisons – risk to prisoners and staff welfare from directly from overheating and also from potential for unrest. Risk of overheating in custody suites and detention centres. Risks to the stability of sites.	All - the main focus at this point is around internal communication. All - Horizon scanning and considering the coming impacts and what ifs. All – Some organisations may start partnership dialogue in specific areas affected by the heat – but may also be responding outside London. All – Considering management of concurrent issues.	All - Delays on transport networks may affect staff travel in and to/from work. EA – Focus on operational delivery and management of waste fires. EA – Focus on staff welfare issues - consider health safety and wellbeing (particularly those working outdoors, may adjust the working day so early start/early finish). EA - Telemetry and other equipment that might be affected – so they would be checking it equipment functionality. Heat also might also affect navigation and the use of water ways. MoJ - Main focus is preservation of life, disruption to travel, making alternative plans, letting people know what is coming, symptoms for heat stroke, keeping hydrated. Mil - There will be a new plan for extreme heat for public/routine duties. - curtailing the time of duties at palaces etc. Other plans well in place for example for parades. Mil - May adjust physical activity according to the nature of the activity, e.g. sessions earlier in day, and advice on safe levels of exertion. Mil - Safety consideration of systems e.g. certain firing systems might not be used. Mil - MACA (Military Aid to Civil Authorities) arrangements in place - deployment may involve monitoring wet bulb measurements. DLUHC: The response would step up - consideration of cross-Whitehall response, if so a lead government department (likely DHSC). Potentially moving up to level 3. Manager and team in place maintaining situational awareness in DLUHC.	Mil - Major actions in place already. Red alert would then potentially cancel big events, e.g. Trooping the Colour. DLUHC – Main concerns about water pressure, supply chain, and power. Would want to know what are the implications currently, over-run? How bad can this be? What are the concurrent/cascading risks? EA - wider agency response leading in to DEFRA, particularly drought. Starting to ramp up communication with partners and providing reassurance back to DEFRA. Coordination between three areas to manage briefings. Focus on dry weather (before we got to heat). Temporary use bans. MoJ - Every additional day would escalate the problems. Potential for instability at facilities e.g. prisons and custody suites, losing cells. Mutual Aid would become difficult as a heatwave is likely to affect all adjacent areas.
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APPENDIX B: LRCG - TOP LINES BY ALERT

The following comms lines were produced by the LRCG in response to the exercise scenario. NB not all organisations' comms teams were present at the exercise so only some are represented here.

Org	Yellow Alert Content
UKHSA	The UK Health Security Agency (UKHSA) and the Met Office have issued a yellow heat-health alert (HHA) for London. The alert is currently in place from date to date. The Met Office has forecast temperatures of X. A yellow alert means that any impacts likely include the increased use of health care services by vulnerable populations and an increase in risk to health for individuals aged over 65 years or those with pre-existing health conditions, e.g. respiratory and cardiovascular diseases. <u>Public health messages:</u> • While many people enjoy warmer summer weather, hot weather can cause some people to become unwell through overheating, dehydration, heat exhaustion and heatstroke. • It's important that everyone takes sensible precautions while enjoying the sun. • Keep out of the sun at the hottest time of the day, between 11am and 3pm • If you are going to do a physical activity (for example exercise or walking the dog), plan to do these during times of the day when it is cooler such as the morning or evening • Keep your home cool by closing windows and curtains in rooms that face the sun • If you do go outside, cover up with suitable clothing such as an appropriate hat and sunglasses, seek shade and apply sunscreen • Drink plenty of fluids and limit your alcohol intake • Check on family, friends and neighbours who may be at higher risk of becoming unwell, and if you are at higher risk, ask them to do the same for you • Know the symptoms of heat exhaustion and heatstroke and what to do if you or someone else has them.
LFB	• Firefighters are asking that Londoners follow crucial safety advice that will help protect themselves, others, the environment, and even their property. • If you are visiting an open park or space, please do not take a disposable barbecue with you- in fact disposable BBQs are banned in many of London's parks and you can be fined if you are caught ignoring this ban. • Discarded smoking materials and leftover rubbish also pose a huge fire risk. People are asked to ensure their rubbish is placed securely inside a bin or to take it home with them. If you have had a cigarette, please make sure that it is completely out. • Grass fires can spread extremely fast so if you see dry grass smouldering, please call 999 and report it immediately so that firefighters can deal with it and stop it from spreading. • During this heat wave, many people will be tempted to enjoy London's waterways by going for a swim. If someone is in trouble in the water, don't go in after them. Instead call 999 and tell them to float on their back. Look for nearby public rescue equipment. If not available, throw something that floats. • Never drink alcohol and then go for a swim or attempt to jump into water, and avoid walking/running very close to water on your own or late at night - it's easier than you think to slip and fall in.
LAS	• Our services are currently very busy, so we would urge everyone to take a little extra care during these soaring temperatures. • The hot weather and high pollen count can have a significant impact on people's health, and we expect an increase in calls relating to difficulty in breathing, dizziness and fainting, as well as more calls relating to chest pains and heart problems. • Our teams are always here to help if you need us, but we would ask that people follow advice, use our service wisely and contact your GP, pharmacy or <u>NHS 111</u> where possible. • With high temperatures continuing for the next few days, we will ensure we have as many people as possible on the road and in our control rooms ready to care for Londoners.
TfL	• With continuous hot weather forecast over the coming days, we are encouraging customers to carry water with them when they travel • We have a comprehensive hot weather plan in place to protect the network's infrastructure with resources on standby to help respond to the impact and keep services running • For the latest information on TfL services use TfL travel tools, journey planner and TfL GO

Org	Amber Alert Content
UKHSA	The UK Health Security Agency (UKHSA) and the Met Office have issued an amber heat-health alert (HHA) for London. The alert is currently in place from date to date. The Met Office has forecast temperatures of X. An amber alert means that weather impacts are likely to be felt across the whole health service. At this level, we may begin to see some health impacts across the wider population, and an increase in risk to health for individuals aged over 65 years or those with pre-existing health conditions, including respiratory and cardiovascular diseases. <u>Public health messages:</u> • While many people enjoy warmer summer weather, hot weather can cause some people to become unwell through overheating, dehydration, heat exhaustion and heatstroke. • It's important that everyone takes sensible precautions while enjoying the sun. • Keep out of the sun at the hottest time of the day, between 11am and 3pm • If you are going to do a physical activity (for example exercise or walking the dog), plan to do these during times of the day when it is cooler such as the morning or evening • Keep your home cool by closing windows and curtains in rooms that face the sun • If you do go outside, cover up with suitable clothing such as an appropriate hat and sunglasses, seek shade and apply sunscreen • Drink plenty of fluids and limit your alcohol intake • Check on family, friends and neighbours who may be at higher risk of becoming unwell, and if you are at higher risk, ask them to do the same for you • Know heat exhaustion and heatstroke symptoms and what to do if you/someone else has them.
LFB	• Firefighters are reminding Londoners to act safely and responsibly during this week's heat wave, as London is issued an amber warning. • As temperatures rise, there becomes a very real risk of grass fires. If you are visiting an open park or space, please do not take a disposable barbecue with you- in fact disposable BBQs are banned in many of London's parks and you can be fined if you are caught ignoring this ban. • Common causes of grass blazes include carelessly discarded cigarettes or matches as well as rubbish left lying around such as glass bottles, which can start fires by magnifying the sun's rays. To reduce the risk of fire and keep our communities clean, make sure your rubbish is safely thrown away and your cigarettes are always properly disposed of. • Grass fires can spread extremely fast so if you see dry grass smouldering, please call 999 and report it immediately so that firefighters can deal with it and stop it from spreading. • Firefighters are also warning residents not to risk their safety for a cooling swim. • The water might look tempting, but even in the summer there is a risk of cold-water shock, which can cause your body to go into shock and cause panic, anxiety, disorientation and loss of muscular control which makes you gasp for air and inhale water. • If someone is in trouble in the water, don't go in after them. Instead call 999 and tell them to float on their back. • LFB's advice follows data from the National Water Safety Forum, which shows that 60 percent of accidental drownings in the UK occur inland on waterways such as rivers, canals, lakes, reservoirs and quarries.
LAS	• We have had some of the busiest days of the year over the last several days and we expect to stay busy this week as the hot weather continues. • Sometimes people start to feel ill a few days after the hot weather so do continue to look after yourself and others. • We are seeing more calls for people with breathing difficulties or feeling faint and dizzy. There has also been an increase in the number of people calling for chest pains. • We have more people in our control rooms and out on the road to help care for Londoners during the hot weather. • We would ask that people follow advice, use 999 wisely and contact your GP, pharmacy or NHS 111 where possible.
TfL	• With continuous hot weather forecast over the coming days, we are encouraging customers to carry water with them • TfL might need to introduce temporary speed restrictions on some services as a precaution, which may mean journeys take longer than usual. • Customers should get off at the next stop if they are feeling unwell • For the latest information on TfL services use TfL travel tools, journey planner and TfL GO

Org	Red Alert Content
UKHSA	UKHSA and the Met Office have issued a red heat-health alert (HHA) for London. The alert is currently in place from date to date. The Met Office has forecast temperatures of X. A red alert means that there is a significant risk to life for even the healthy population. At this level, the severe heat could have impacts beyond health and social care with potential effects on transport systems, food, water, energy supplies and businesses. UKHSA will continue to monitor any heat-related illness and work closely with Met Office, NHS and other government departments to assess impacts of hot weather. <u>Public health messages:</u> • While many people enjoy warmer summer weather, hot weather can cause some people to become unwell through overheating, dehydration, heat exhaustion and heatstroke. • It's important that everyone takes sensible precautions while enjoying the sun. • Keep out of the sun at the hottest time of the day, between 11am and 3pm • If you are going to do a physical activity (for example exercise or walking the dog), plan to do these during times of the day when it is cooler such as the morning or evening • Keep your home cool by closing windows and curtains in rooms that face the sun • If you do go outside, cover up with suitable clothing such as an appropriate hat and sunglasses, seek shade and apply sunscreen • Drink plenty of fluids and limit your alcohol intake • Check on family, friends and neighbours who may be at higher risk of becoming unwell, and if you are at higher risk, ask them to do the same for you • Know the symptoms of heat exhaustion and heatstroke and what to do if you or someone else has them.
LFB	• London Fire Brigade has issued further safety advice today after the Met Office issued a red warning for extreme heat this week. • Firefighters are currently responding to a large volume of incidents and are urging people to continue to take extra care and help us prevent fires on open land. • As temperatures rise, there becomes a very real risk of grass fires. The Brigade has already attended more than X grass and open land fires across the city this year. Around X of these were in domestic gardens and with prolonged periods of hot weather, there is a concern these numbers will rise. • Make sure rubbish, especially glass, is safely thrown away and cigarettes are always properly disposed of. Grass will be tinder dry after such hot weather, so please don't have barbecues in parks and public spaces. • If you are visiting an open park or space, please do not take a disposable barbecue with you- in fact disposable BBQs are banned in many of London's parks and you can be fined if you are caught ignoring this ban. • Grass fires can spread extremely fast so if you see dry grass smouldering, please call 999 and report it immediately so that firefighters can deal with it and stop it from spreading. • The Brigade is also asking Londoners not to barbecue on balconies. It's easier than you might think for a balcony fire to spread to others, which could not only leave you homeless but displace hundreds of your neighbours too. • London Fire Brigade has already attended more than 30 incidents involving people in the water in 2024, with concerns this number could spike over the course of the week due to the warmer weather. • People will want to cool down but don't dive into open water as it's colder than it looks. There is the risk of cold-water shock, which can cause your body to go into shock no matter how fit you are. It causes panic, anxiety, disorientation and loss of muscular control, which cause you to gasp for air and as a result, inhale water. Rather than struggling, follow the RNLI advice and 'float to live'.
LAS	• London Ambulance Service (LAS) has called on people to call 999 only in life-threatening emergencies as calls reach levels last seen during the height of the pandemic. • A combination of warm weather, thunderstorms, high pollen count and other air pollution has seen growing numbers of people fainting or suffering with breathing difficulties and dehydration. • Yesterday we received 7,751 999 calls – the highest number since the Christmas peak of the pandemic. The number of patients with difficulty breathing more than doubled compared to the same time the previous week. • We are doing everything we can to reach people who need us as quickly as we can but are very sorry that some people are waiting longer for our help. • With weather conditions set to continue for several days, we moved to our highest level of response and are maximising the numbers of staff on the road and in our control rooms. We are working with NHS partners and hospitals to ensure ambulances are released quickly from hospitals to reach more people in the community. • Londoners can help us by only calling 999 in a life-threatening emergency and consider using their GP and NHS 111 or NHS 111 online,

TfL

- We are advising customers to carry water with them at all times
 - Customers shouldn't board a bus or a train if they feel unwell or get off at the next stop if they feel unwell
 - Speed restrictions are in place across the network meaning journeys will take longer than usual. There could also be unplanned closures at some stations
 - Where possible, customers should consider retiming journeys to less busy times and if their journey is necessary
 - For the latest information on TfL services use TfL travel tools, journey planner and TfL GO
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The London Resilience Unit is part of the Greater London Authority.
We deliver and coordinate resilience services on behalf of the London
Resilience Partnership and London Local Authorities.

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