

Severe Weather and Natural Hazards Framework

Version 2.3

July 2022

London Resilience Partnership Severe Weather and Natural Hazards Framework

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LONDON RESILIENCE GROUP

The London Resilience Group is jointly funded and governed by the Greater London Authority, London Local Authorities and the London Fire Commissioner. We are hosted by the London Fire Brigade. Our work, and that of the London Resilience Partnership, is overseen by the London Resilience Forum.

Version Control		
Version	Date	Change (owner)
1.0	June 2017	Full review
2.0	April 2022	Full review
2.1	June 2022	Amendment to Default Partnership Call Chair for Flooding and Drought (pages 29 and 43). Addition to Activation wording (page 16) Amendments to public communications sections (pages 11, 13, 15).
2.2	June 2022	Amendment to SCG / TCG / Partnership Call Chair information (page 19). Removal of Default Partnership Call Chair references for all weather types (Part 2).
2.3	July 2022	Amendment to colours for Heat Health and Cold Weather Alert triggers to reflect the updated Heatwave Plan for England and Cold Weather Plan for England (sections 3.3-3.5) and change of Heat Health and Cold Weather Alert tables (page 55)

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Part 1 – Capability Framework

This document highlights the key information from the Severe Weather and Natural Hazards Capability. For further guidance please refer to [Part 2](#).

1. Definition

Definition / Purpose

This Framework describes the response and associated actions to a range of severe weather and natural hazard incidents. This document is for use by the London Resilience Partnership. It can be used to assess the need to instigate a partnership response and details the actions to take if such a response is required. Further guidance on different weather events and natural hazards that can occur, as well as potential implications, is provided in [Section 2](#).

This framework refers to severe weather and natural hazards. Other responders, the media and public may use the terms Extreme Weather or Adverse Weather to refer to the type of scenarios covered in this framework.

This framework encompasses the following hazards:

Weather	Natural Hazard
Rain	Flooding
Wind	Drought
Snow	Air Quality
Ice	Volcanic Hazards
Thunderstorms	Space Weather
Lightning	
Fog	
Extreme Heat	
Cold	

Links to Other Plans

This Framework should be read alongside the [Strategic Coordination Protocol \(SCP\)](#), the [London Emergency Services Liaison Panel \(LESLP\) Major Incident Principles](#), and other, hazard specific plans including the [Strategic Flood Response Framework](#) and the [Drought Response Framework](#).

Dependent on the impacts of a severe weather incident, there may be a requirement to activate additional consequence specific Frameworks. The full suite of London Resilience Partnership Frameworks is available on [ResilienceDirect](#).

All organisations should also consider the activation of internal major incident protocols and business continuity arrangements as appropriate.

Planning Assumptions

- All agencies maintain their own emergency and business continuity plans, which reflect the triggers and actions within this framework.
- This Framework focuses on the initial response and coordination to a severe weather or natural hazards incident. The response and coordination to the resultant impacts will be covered by other response arrangements (as detailed in the relevant plans) and it is assumed that these arrangements will eventually supersede the initial response arrangements.

- Weather events experienced by London may impact on neighbouring Local Resilience Forum (LRF) areas and vice versa.
- This Framework focuses on immediate risks and hazards, longer term climate change is outside of scope. Further information on climate change can be found via the [London Climate Change Partnership](#). Further information regarding Climate Resilience is available via the [Met Office](#).

2. Action Checklist

Complete	Action	Section
	Upon receipt of a weather warning, assess whether any partnership action / activation of this plan is required	Section 3 – Triggers
	Activate the plan	Section 3 – Activation Process
	Determine the structure of the response and which sub groups will be required.	Section 4 – Structure and sub groups
	Assess the immediate / short term implications	Section 5 – Short, Medium and Longer Term considerations
	Assess the medium term considerations	Section 5 – Short, Medium and Longer Term considerations
	Consider the longer term implications	Section 5 – Short, Medium and Longer Term considerations
	Determine the resources and support available	Section 6 – Resources and Support Available
	Set strategy	Section 7 – Draft Strategy
	Refer to the Hazard Specific Information to identify any specific considerations to inform response	Part 2 – Hazard Specific Information
	Refer to the guidance document for further information	Part 3 – Capability Guidance

3. Triggers

3.1 Level 0 – Long Term Planning and Adaptation

TRIGGERS

None.

All organisations will be working to identify the impacts of severe weather and natural hazards to their business and on the community. This can include:

Embedding climate risk management in relevant areas of organisational activity in line with the National Adaptation Programme.

Working with partners, stakeholders and the community to raise awareness of the potential impacts of weather hazards and the risk reduction activities. Addressing risks from a changing climate on areas such as housing, spatial planning and infrastructure.

Ensuring organisations can identify and support the most vulnerable.

ACTIONS

Preparedness

	Ensure staff and relevant external stakeholders (including communities as relevant) are in receipt of relevant warnings and are aware of actions required	All
	Support long term public health messaging in regards to high-impact weather events	All
	Consider testing emergency plans to ensure roles, responsibilities and actions are clear	All
	Identify learning from previous incidents / exercises and update plans and procedures where appropriate	
	Consider the need to work differently during emergency events (e.g. shared transport, remote working, combined cover for vulnerable people etc.)	All

Community Resilience

As appropriate the Partnership should promote the following messages and practical steps to individuals, local communities and businesses:

Check the Met Office, Environment Agency, UK Health Security Agency and London Prepared websites for useful information.

There are a number of practical steps you can take to support your community to prepare for severe weather (including flooding, cold and hot weather, storms, strong winds, snow and ice)

Find out what your local authority is doing to support Community Resilience by checking their website.


Download the free Emergency App from the British Red Cross.

3.2 Level 1 – Horizon Scan / No Severe Weather

TRIGGERS		
None.		
Ongoing risk assessment and horizon scanning is integrated into category 1 and 2 responder normal arrangements.		
ACTIONS		
At the start of appropriate severe weather season:		
	Review plans, contingency arrangements and responsibilities to severe weather (some risks are seasonal e.g. hot and cold and others are not e.g. flooding)	All
	Confirm individual agency contingency and business continuity plans	All
	Category 1 and 2 agencies to liaise on joint preparedness arrangements	All
	Review pre-prepared general information and guidance Promote severe weather risk and advice to the public	All
	Test and exercise plans and procedures	All
	Pre-emptively clear and protect relevant asset and systems e.g. watercourse, drainage systems as part of ongoing maintenance	Local Authorities / Environment Agency / Utilities / Transport Sector

3.3 Level 2 – Lower impact forecast / events

Level 2 – Lower impact forecast / events


TRIGGERS																														
Warning type	Level	Weather type	From																											
National Severe Weather Warning Service (NSWWS)	<table border="1"> <tr> <td rowspan="4">Likelihood</td> <td>High</td> <td></td> <td>✓</td> <td></td> <td></td> </tr> <tr> <td>Medium</td> <td></td> <td>✓</td> <td></td> <td></td> </tr> <tr> <td>Low</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Very Low</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td>Very Low</td> <td>Low</td> <td>Medium</td> <td>High</td> </tr> </table> <p>Potential Impacts</p>	Likelihood	High		✓			Medium		✓			Low					Very Low							Very Low	Low	Medium	High	<ul style="list-style-type: none"> Rain Thunderstorm Wind Snow Lightning Ice Extreme Heat¹ Fog 	Met Office
Likelihood	High			✓																										
	Medium			✓																										
	Low																													
	Very Low																													
		Very Low	Low	Medium	High																									
Cold Weather Alert	Level 2	Low Temperatures or Heavy Snow / Widespread Ice	Met Office																											
Heat Health Alert	Level 2	Extreme Heat	Met Office																											
Flood warning	Flood Alert 	Flooding	Environment Agency																											
Flood Guidance Statement	<table border="1"> <tr> <td rowspan="4">Likelihood</td> <td>High</td> <td></td> <td>✓</td> <td></td> <td></td> </tr> <tr> <td>Medium</td> <td></td> <td>✓</td> <td></td> <td></td> </tr> <tr> <td>Low</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Very Low</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td>Minimal</td> <td>Minor</td> <td>Significant</td> <td>Severe</td> </tr> </table> <p>Potential Impacts</p>	Likelihood	High		✓			Medium		✓			Low					Very Low							Minimal	Minor	Significant	Severe	Flooding	Flood Forecast Centre
Likelihood	High			✓																										
	Medium			✓																										
	Low																													
	Very Low																													
		Minimal	Minor	Significant	Severe																									
Water Resource Situation	Prolonged Dry Weather	Drought	Environment Agency																											
Air Quality	Moderate (4-6)	Air Quality	Mayors Air Quality Alert System																											
Daily Hazard Assessment	Yellow	Space Weather, Volcanic Ash	Natural Hazards Partnership																											
ACTIONS																														
	Raise to the London Resilience Duty Manager if necessary (if escalation is expected or further action is anticipated.)		Met Office / EA / UKHSA																											
	Refer to London Strategic Flood Response Framework or other partnership plans as required.		All																											

¹ Extreme Heat Warnings were introduced in 2021 but only Amber and Red warnings were issued. Yellow warnings were not issued but this will be kept under review for future years.

	Consider the potential impact on services and organisational preparedness.	All
	Report any impacts to the London Resilience Group, using the London Situational Awareness System (LSAS) or via email as appropriate.	All
	Identify and support at risk / vulnerable individuals / groups.	Local Authorities / Health Sector
	Identify public events which could potentially be affected.	Local Authorities / GLA / Safety Advisory Groups
	Lead on coordination of public information, advice and guidance as per business-as-usual arrangements. Consider the need to share information via the London Resilience Communication Group (LRCG) to support multi-agency public communications activity.	Lead responder
	Share information with the public as required via usual means.	All
	Pre-emptively clear and protect relevant asset and systems e.g. watercourse, drainage systems as part of ongoing maintenance.	Local Authorities / Environment Agency / Utilities / Transport Sector

3.4 Level 3 – Medium* impact forecast / events

Level 3 – Medium impact forecast / events


TRIGGERS																														
Warning type	Level	Weather type	From																											
National Severe Weather Warning Service (NSWWS)	<table border="1"> <tr> <td rowspan="4">Likelihood</td> <td>High</td> <td></td> <td></td> <td>✓</td> <td></td> </tr> <tr> <td>Medium</td> <td></td> <td></td> <td>✓</td> <td></td> </tr> <tr> <td>Low</td> <td></td> <td></td> <td>✓</td> <td></td> </tr> <tr> <td>Very Low</td> <td></td> <td></td> <td>✓</td> <td></td> </tr> <tr> <td></td> <td></td> <td>Very Low</td> <td>Low</td> <td>Medium</td> <td>High</td> </tr> </table> <p>Potential Impacts</p>	Likelihood	High			✓		Medium			✓		Low			✓		Very Low			✓				Very Low	Low	Medium	High	<ul style="list-style-type: none"> Rain Thunderstorm Wind Snow Lightning Ice Extreme Heat Fog 	Met Office
Likelihood	High				✓																									
	Medium				✓																									
	Low				✓																									
	Very Low			✓																										
		Very Low	Low	Medium	High																									
Cold Weather Alert	Level 3	Low Temperatures or Heavy Snow / Widespread Ice	Met Office																											
Heat Health Alert	Level 3	Extreme heat	Met Office																											
Flood warning	Flood Warning 	Flooding	Environment Agency																											
Flood Guidance Statement	<table border="1"> <tr> <td rowspan="4">Likelihood</td> <td>High</td> <td></td> <td></td> <td>✓</td> <td></td> </tr> <tr> <td>Medium</td> <td></td> <td></td> <td>✓</td> <td></td> </tr> <tr> <td>Low</td> <td></td> <td></td> <td>✓</td> <td></td> </tr> <tr> <td>Very Low</td> <td></td> <td></td> <td>✓</td> <td></td> </tr> <tr> <td></td> <td></td> <td>Minimal</td> <td>Minor</td> <td>Significant</td> <td>Severe</td> </tr> </table> <p>Potential Impacts</p>	Likelihood	High			✓		Medium			✓		Low			✓		Very Low			✓				Minimal	Minor	Significant	Severe	Flooding	Flood Forecast Centre
Likelihood	High				✓																									
	Medium				✓																									
	Low				✓																									
	Very Low			✓																										
		Minimal	Minor	Significant	Severe																									
Water Resource Situation	Drought	Drought	Environment Agency																											
Air Quality	High (7-9)	Air Quality	Mayors Air Quality Alert System																											
Daily Hazard Assessment	Amber	Space Weather, Volcanic Ash	Natural Hazards Partnership																											
ACTIONS																														
	Call the London Resilience Duty Manager to inform them of the / likelihood for the issuing of alert / warning.		Met Office / EA / UKHSA																											
	If the NSWWS and / or FGS is yellow or another Level 3 alert has been issued (as detailed above), hold a tri-partite call to discuss the need to convene a London Resilience Partnership Teleconference.		Met Office / EA / UKHSA / LRG / MPS																											
	If the NSWWS and / or FGS is Amber, convene a London Resilience Partnership Teleconference to discuss impacts and potential mitigation.		Met Office / EA / UKHSA / LRG																											

	Refer to London Strategic Flood Response Framework or other partnership plans as required.	All
	Report any impacts associated with Severe Weather to the London Resilience Group, using the London Situational Awareness System (LSAS) or via email as appropriate.	All
	Implement response plan activities including activation of controls, putting in place relevant staffing and setting up appropriate coordination structures.	All
	Provide assurance to partners regarding the continuation of essential services	All
	Pre-emptively clear and protect relevant asset and systems e.g. watercourse, drainage systems	Local Authorities / Environment Agency / Utilities / Transport Sector
	Identify and support at risk / vulnerable individuals / groups	Local Authorities / Health Sector
	Review safety of public events	Local Authorities / GLA / Safety Advisory Groups
	Activate the London Resilience Communication Group (LRCG) to coordinate public communications activity.	Lead responder
	Ascertain the appropriate level of communications response and coordinate public communications activity (the provision of information and advice to the public), including specific advice to at risk groups. If flooding related, activate the LRCG Severe flooding incident communications plan.	London Resilience Communication Group
	Proactively issue public communications via all available means	All
	Monitor for health, community and business impacts	Local Authorities / Health Sector / Business Sector
	Join Partnership calls to share and aid situational awareness.	All

**includes high level Air Quality event*

3.5 Level 4 – Higher impact forecast / events

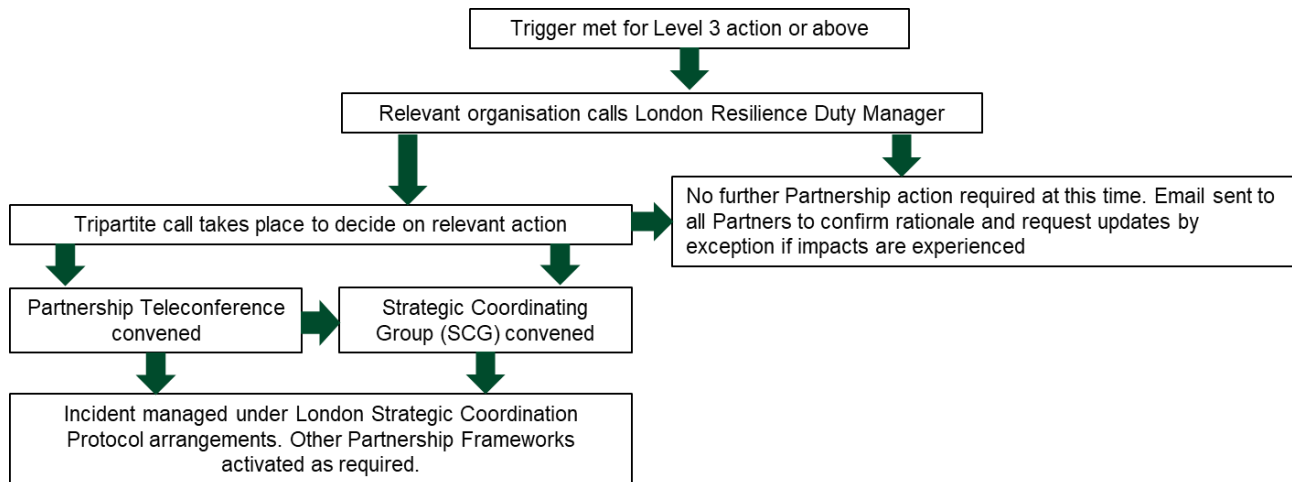
Level 4 – Higher impact forecast / events

TRIGGERS																																				
Warning type	Level	Weather type	From																																	
National Severe Weather Warning Service (NSWWS)	<table border="1"> <tr> <td rowspan="4">Likelihood</td> <td>High</td> <td></td> <td></td> <td></td> <td>✓</td> </tr> <tr> <td>Medium</td> <td></td> <td></td> <td></td> <td>✓</td> </tr> <tr> <td>Low</td> <td></td> <td></td> <td></td> <td>✓</td> </tr> <tr> <td>Very Low</td> <td></td> <td></td> <td></td> <td>✓</td> </tr> <tr> <td colspan="2"></td> <td>Very Low</td> <td>Low</td> <td>Medium</td> <td>High</td> </tr> <tr> <td colspan="6">Potential Impacts</td> </tr> </table>	Likelihood	High				✓	Medium				✓	Low				✓	Very Low				✓			Very Low	Low	Medium	High	Potential Impacts						<ul style="list-style-type: none"> Rain Thunderstorm Wind Snow Lightning Ice Extreme Heat 	Met Office
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	Medium					✓																														
	Low					✓																														
	Very Low				✓																															
		Very Low	Low	Medium	High																															
Potential Impacts																																				
Cold Weather Alert	Level 4	Low Temperatures or Heavy snow / Widespread Ice	Met Office																																	
Heat Health Alert	Level 4	Extreme heat	Met Office																																	
Flood warning	Severe Flood Warning 	Flooding	Environment Agency																																	
Flood Guidance Statement	<table border="1"> <tr> <td rowspan="4">Likelihood</td> <td>High</td> <td></td> <td></td> <td></td> <td>✓</td> </tr> <tr> <td>Medium</td> <td></td> <td></td> <td></td> <td>✓</td> </tr> <tr> <td>Low</td> <td></td> <td></td> <td></td> <td>✓</td> </tr> <tr> <td>Very Low</td> <td></td> <td></td> <td></td> <td>✓</td> </tr> <tr> <td colspan="2"></td> <td>Minimal</td> <td>Minor</td> <td>Significant</td> <td>Severe</td> </tr> <tr> <td colspan="6">Potential Impacts</td> </tr> </table>	Likelihood	High				✓	Medium				✓	Low				✓	Very Low				✓			Minimal	Minor	Significant	Severe	Potential Impacts						Flooding	Flood Forecast Centre
Likelihood	High					✓																														
	Medium					✓																														
	Low					✓																														
	Very Low				✓																															
		Minimal	Minor	Significant	Severe																															
Potential Impacts																																				
Water Resource Situation	Severe Drought	Drought	Environment Agency																																	
Air Quality	Very High (10)	Air Quality	Mayors Air Quality Alert System																																	
Daily Hazard Assessment	Red	Space Weather, Volcanic Ash	Natural Hazards Partnership																																	
ACTIONS																																				
	Call the London Resilience Duty Manager to inform them of the / likelihood for the issuing of alert / warning.		Met Office / EA / UKHSA																																	
	If the NSWWS and / or FGS is Yellow, hold a tripartite call to discuss the need to convene a London Resilience Partnership Teleconference		Met Office / EA / UKHSA / LRG																																	
	If the NSWWS and / or FGS is Amber or Red, or another Level 4 alert has been issued (as detailed above), convene Strategic Coordinating Group following a tripartite call with relevant Partners.		Met Office / EA / UKHSA / LRG / MPS																																	
	Refer to London Strategic Flood Response Framework or other partnership plans as required.		All																																	

	Activate other partnership capabilities as required (e.g. Humanitarian Assistance Steering Group, Recovery Coordinating Group)	Relevant lead organisations
	Report any impacts associated with Severe Weather to the London Resilience Group, using the London Situational Awareness System (LSAS) or via email as appropriate.	All organisations
	Implement response plan activities including activation of controls, putting in place relevant staffing and setting up appropriate coordination structures.	All
	Provide assurance to partners regarding the continuation of essential services	All
	Pre-emptively clear and protect relevant asset and systems e.g. watercourse, drainage systems	Local Authorities / Environment Agency / Utilities / Transport Sector
	Identify and support at risk / vulnerable individuals / groups	Local Authorities / Health Sector
	Review safety of public events	Local Authorities / GLA / Safety Advisory Groups
	Activate the London Resilience Communication Group (LRCG) to coordinate public communications activity.	Lead responder
	Ascertain the appropriate level of communications response and coordinate public communications activity (the provision of information and advice to the public), including specific advice to at risk groups. If flooding related, activate the LRCG Severe flooding incident communications plan.	London Resilience Communication Group
	Proactively issue public communications via all available means	All
	Monitor for health, community and business impacts	Local Authorities / Health Sector / Business Sector
	Join Partnership calls to share and aid situational awareness.	All
	Ensure appropriate representation on SCGs as required	All

4. Activation Process

4.1 Activation



Upon the issuing of a warning / alert which meets Level 3 or above as detailed in Section 3, the duty officer for the lead organisation (as detailed in the triggers tables) should call the London Resilience Duty Manager to discuss the content of that warning and decide whether any Partnership action is required.

If it is decided that no Partnership action is required, an update should be sent to the Partnership to confirm the rationale for this. Partners should also be asked to report any impacts by exception if required. These updates should also draw attention to the relevant actions (dependent on warning level) as set out in this framework (Section 3) as well as actions set out in other associated frameworks where applicable (e.g. Strategic Flood Response Framework, Drought Framework).

If there is a potential need for Partnership action, this action should be agreed via a tri-partite call involving London Resilience Group, the Metropolitan Police Service and the relevant Partners e.g. Met Office and the Environment Agency. The decision may then be taken that no further action is required, therefore an update should be sent to the Partnership, or that Partners should be convened. Partners may be convened by either a Partnership Teleconference or a SCG – this will be managed under existing Strategic Coordination arrangements (as detailed in the Strategic Coordination Protocol). In some instances, the decision to convene a SCG may be taken during a Partnership Teleconference.

If there is any uncertainty as to whether a Partnership Teleconference should be convened, the default will be to hold one.

If a trigger is met for action lower than Level 3, relevant action should still be taken as detailed in Section 3.1-3.3.

Where a level 3 / 4 trigger warning is received a number of days ahead of a forecast event, the level of Partnership activity should be reconsidered (with relevant discussions taking place via a tri-partite call) each subsequent day prior to the forecast event.

4.2 Coordination Levels

The potential impact from a severe weather or natural hazard incident is dependent on a variety of factors, not just the scale and type of the weather event / warning. Therefore, the decision on the required coordination level should be taken at the time via the process outlined in Section 4.1, taking into account all available information.

Factors to consider include time of day, time of year, current environmental conditions and large-scale events. Specific locations may also give rise to potential impacts due to a higher concentration of vulnerable people or an increased susceptibility to specific conditions e.g. south facing flats during hot weather. Consideration should not only be given to the impact on the community but also the potential impact on partner organisations being able to continue to deliver their necessary functions.

All organisations can support this decision making process by ensuring they share relevant impacts with the London Resilience Group by exception either via the London Resilience Duty Manager or the [London Situational Awareness System](#) if this has been set up for the incident.

A guide for coordination levels is provided in the following table.

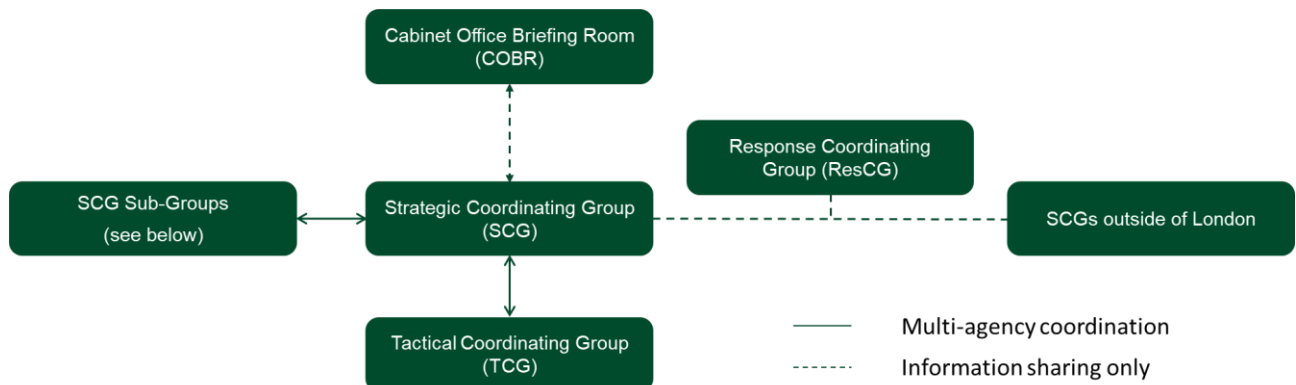
Coordination Trigger	Normal Operational Response	Partnership Teleconference	Strategic Coordinating Group	Lead for Activation
Flood Guidance Statement	Green bar			EA / Met Office
	Yellow bar		Orange bar	
			Red bar	
Flood Warning Service	Flood Alert			EA
		Flood Warning		
			Severe Warning	
NSWWS	Green bar			Met Office
	Yellow bar		Orange bar	
			Red bar	
Drought	No Drought			EA
		Developing Drought		
			Drought	
			Severe Drought	
Air Quality	Low			Defra / AirText / Mayor's Air Quality Alerts
	Moderate			
	High			
	Very High			
Daily Hazards Assessment (Space Weather/Volcanic Ash)	Green bar			Met Office
	Yellow bar		Orange bar	
			Red bar	
Heat Health / Cold Weather	Level 1			Met Office/UKHSA
	Level 2			
		Level 3		
			Level 4	

5. Structure and Sub-Groups

Structure of the response

The structure of the response will be dependent upon the type of weather event and it's location. Dependent on the impacts, the response may consist solely of coordination through the Strategic Coordinating Group (SCG) or may be supported by a number of sub-groups.

It should also be noted that by their nature, weather events do not fit neatly into specified boundaries therefore liaison with SCGs outside of London may be required and the Department for Levelling Up, Housing and Communities (DLUHC) may set up a Response Coordinating Group (ResCG).



Sub-groups to be considered

Further detail on the below sub-groups can be found in the [Strategic Coordination Protocol](#)

Sub-Group	Purpose	Lead
London Resilience Communication Group (LRCG)	Ensure appropriate and consistent communications	Metropolitan Police Service
Recovery Coordinating Group (RCG)	Plan for and influence wider longer-term outcomes	Local Authorities
Scientific and Technical Advice Cell (STAC)	Provide relevant subject matter expertise	UK Health Security Agency (UK HSA)
Air Quality Cell (AQC)	Provide relevant subject matter expertise	Environment Agency
Transport Sector Cell	The Transport Cell enables shared situational awareness and interoperability in the sector	Transport for London
Evacuation and Shelter Coordinating Group (ESCG)	Provides central, multi-agency coordination to a large scale / mass evacuation and to meeting shelter requirements.	Police
Excess Deaths Management Group (EDMG)	Coordinates the management of excess deaths at the regional level	Local Authorities
Response Coordinating Group (ResCG)	Various, including supporting shared situational awareness during a multi-region incident, facilitating effective and coordinated cross-border working, identifying issues requiring national support.	DLUHC <i>(Note: any region may choose to undertake a ResCG however this should be in consultation with DLUHC)</i>

SCG / TCG / Partnership teleconference Chair

London Resilience Group (LRG) will chair and facilitate Partnership teleconferences as required for the purpose of briefing and information sharing between partnership organisations only. If it is determined that partnership coordination is required, a Tactical Coordinating Group (TCG) and / or Strategic Coordinating Group (SCG) should be convened. This decision should be made as part through a tri-partite call (see [Strategic Coordination Protocol](#) for details of these arrangements).

Partnership Teleconferences will be chaired by the London Resilience Group by default. Where there is a lead response organisation better suited to chairing the meeting this will be arranged between that organisation and LRG.

The decision on which agency will chair an SCG will be made in consultation between the MPS and the lead agency through a tri-partite call, or through the Partnership Teleconference if one has already been held for the incident. If it is unclear which agency would be most appropriate to chair an SCG the MPS will be the default Chair as set out in the Strategic Coordination Protocol.

The TCG will be chaired by the lead response organisation (i.e. the same organisation as chair of the SCG), or by another organisation in agreement with the lead response organisation.

6. Key Considerations

6.1 SCG Considerations

Issues	Considerations
<p><u>Community</u></p> <p>Vulnerable people may be less able to help themselves in an emergency than others. Vulnerability will vary depending on the nature of the incident and other factors, such as:</p> <ol style="list-style-type: none"> 1. Social and welfare 2. Health <p>Potential vulnerabilities and support required during emergency situations is detailed in the London Resilience Partnership Document Identification of the Vulnerable: A Guidance Note for Local Implementation.</p> <p>Additionally, the Heatwave Plan for England also defines high risk groups as follows: <i>Community: Over 75, female, living on own and isolated, severe physical or mental illness; alcohol and/or drug dependency, homeless, babies and young children, on multiple medications and over exertion</i> <i>Care home or hospital: Over 75, female, frail, severe physical or mental illness, multiple medications, babies and young children</i></p>	<ul style="list-style-type: none"> • Health impacts <ul style="list-style-type: none"> ○ Direct – fatalities, injuries ○ Indirect – due to strain on health services • Vulnerabilities <ul style="list-style-type: none"> ○ Known vulnerable people and providing the necessary support ○ Those with temporary vulnerabilities unknown to the authorities, including rough sleepers ○ Vulnerable areas / communities / properties – schools, nursing/care homes, hospitals, prisons, basement dwellings (flooding), south facing flats (heat) • Humanitarian assistance <ul style="list-style-type: none"> ○ Evacuation and shelter ○ Contact with faith communities ○ Support available from the voluntary sector • Warning & informing <ul style="list-style-type: none"> ○ Informing the public on risks associated with severe weather ○ Advice / action required e.g. avoid non-essential travel • Community tension and public disorder <ul style="list-style-type: none"> ○ Perceived action / inaction by authorities ○ Communities disproportionately impacted • Disruption to essential services <ul style="list-style-type: none"> ○ Utilities ○ Transport <ul style="list-style-type: none"> ▪ Potential for communities to be cut off ▪ Potential for passengers to become stranded • Damage to areas of cultural or historical significance
<p><u>Infrastructure</u></p> <p><u>Critical National Infrastructure (CNI)</u></p>	<p>Identify if any Critical National Infrastructure has been impacted or is at risk and:</p> <ul style="list-style-type: none"> • Prioritise sites if / as required. • Consider the scale and duration of loss

Issues	Considerations
<p>Our CNI includes all the essential mechanisms which keep the country functioning, ranging from the core functions of government, through to ensuring the availability of food and water, fuel and reliable communications.</p> <p>Disruption to the wider infrastructure (e.g. transport services, utilities) can also cause a variety of secondary impacts.</p>	<ul style="list-style-type: none"> • Identify mitigation measures and alternative supplies • Consider the knock-on consequences and how these will be managed • Assess resource requirement and whether military aid is needed <p>Assess the direct and indirect impacts on:</p> <ul style="list-style-type: none"> • Energy • Food • Water • Waste • Transportation • Communications • Emergency Services • Health and Social Care • Financial service/Government • Education <p>Consideration should be given to cascade and knock-on impacts across the sectors – see Anytown models in the London Power Supply Disruption Framework, Disruption to Telecommunications Framework and the Water Supply Disruption Framework.</p> <p>There should be additional consideration given to the closure of schools and the indirect impacts on the continued running of infrastructure due to childcare considerations affecting staffing levels.</p>
<p><u>Environment</u></p> <p>Impacts on the environment can be immediate or longer term with the potential for knock on impacts to the community and health.</p>	<p>Consideration should be given to:</p> <ul style="list-style-type: none"> • Water <ul style="list-style-type: none"> ○ Polluted flood water entering watercourses ○ Impacts to groundwater • Pollution of land • Damage to plants or animals • Food – supply and safety • Air quality

Issues	Considerations
	<ul style="list-style-type: none"> • Potential increase in natural fires during hot weather • Waste disposal
<p><u>Economic</u></p> <p>Any disruption to businesses can have an economic impact. Business closures may be short term (i.e. due to power disruption) or longer term (i.e. damage caused by flooding or storms).</p>	<p>Consider impacts of business disruption from:</p> <ul style="list-style-type: none"> • Power / energy disruption • Telecomms disruption • IT failures • Transport issues affecting staff <p>Consider routes to provide guidance and advice as required e.g. through business sector reps, CSSC etc.</p>
<p><u>Recovery</u></p> <p>Recovery should be considered at the earliest opportunity with the aim of restoring normality as soon as possible.</p>	<p>Recovery considerations include:</p> <ul style="list-style-type: none"> • Housing <ul style="list-style-type: none"> ○ Provision of temporary / alternative accommodation ○ The needs of those affected where there is no insurance – the inclusion of insurance companies at an early stage is recommended • Health <ul style="list-style-type: none"> ○ Recovery of specific health services / companies which were directly impacted (primary care services may be particularly challenged due to being smaller businesses with less Business Continuity) ○ Impacts of large-scale relocations on demands for health services ○ Long term health recovery needs including surveillance, screening, and mental health well-being • Community Cohesion <ul style="list-style-type: none"> ○ Affects of relocating people away from their local areas ○ Perceived speed of recovery and support being provided by authorities • Finance <ul style="list-style-type: none"> ○ Support available to those affected ○ Recovering costs from the response • Economic <ul style="list-style-type: none"> ○ Impact of slow recovery of businesses on the local economy

6.2 Short, Medium and Long Term Considerations

Phase	Needs of people	Frontline operational responders	Tactical responders	Strategic responder
<p>Impact / immediate post impact: first few hours</p>	<ul style="list-style-type: none"> • Protection of life • Communications – access to the most up to date information • Emergency centres (Survivor Reception; Family & Friends Reception; Rest; and Humanitarian Assistance) • Access to support and services e.g. emergency services, utilities, transport services etc. 	<ul style="list-style-type: none"> • Health and Safety of those responding • Early information sharing (specifically risks/demands) • Rescue and recovery of public • Ability to get to work and function versus desire to be with their own relatives 	<ul style="list-style-type: none"> • Resilience, access to plans, intra-agency comms • Early information sharing (specifically risks/demands) • Warning and Informing • Public reassurance • Community impact assessments • Potential requirement for MACA request 	<ul style="list-style-type: none"> • Resilience, access to plans, intra-agency comms, access to co-location facilities • Level of co-ordination required • Requirement for SCG sub-groups • Establishment of Strategic co-ordination centre • Co-locating (particularly in cases of damage to telecoms networks) • Establishing a single version of the truth • Communications and press strategy • Critical National Infrastructure (including those with International consequences) • Financial responsibility
<p>Following hours / first few days</p>	<ul style="list-style-type: none"> • Logistics –the displacement of people, places, food, transport 	<ul style="list-style-type: none"> • Availability of staff (transport to and from work) • Ongoing welfare 	<ul style="list-style-type: none"> • Availability of staff 	<ul style="list-style-type: none"> • Availability of staff

Phase	Needs of people	Frontline operational responders	Tactical responders	Strategic responder
	<ul style="list-style-type: none"> • Care packages and access to the right medication • Access to information (including friends and family of those involved) • Access to bereavement services if required 			<ul style="list-style-type: none"> • Future forecasts – whether it is an isolated or ongoing situation • Concurrent risks
Medium term	<ul style="list-style-type: none"> • Signposting to relevant services 	<ul style="list-style-type: none"> • Fatigue • Post-Traumatic Stress Disorder 	<ul style="list-style-type: none"> • Identifying all those who have been impacted i.e. how do you identify all flooded properties 	<ul style="list-style-type: none"> • Economic impacts
Longer term	<ul style="list-style-type: none"> • Ongoing support including psychological • Consultation on ongoing recovery 	<ul style="list-style-type: none"> • Post-Traumatic Stress Disorder 		<ul style="list-style-type: none"> • Damage to infrastructure (buildings, transport networks etc) • Management of BAU work during a prolonged response • Government liaison

7. Resources and Support Available

Resource / Support	Description	Provider(s)
Climate Risk Mapping	<p>A series of London-wide climate risk maps has been produced to analyse climate exposure and vulnerability across Greater London. These maps were produced to support the delivery of equitable responses to the impacts of climate change and target resources to support communities at highest risk.</p> <p>Climate vulnerability relates to people’s exposure to climate impacts like flooding or heatwaves, but also to personal and social factors that affect their ability to cope with and respond to extreme events. High climate risk coincides with areas of income and health inequalities. A series of citywide maps overlays key metrics to identify areas within London that are most exposed to climate impacts with high concentrations of vulnerable populations.</p> <p>https://data.london.gov.uk/dataset/climate-risk-mapping</p>	GLA
Cool spaces Mapping	<p>The idea of a cool space is to complement the guidance in the NHS Heatwave plan. Whilst the Heatwave Plan encourages people to stay at home during a heatwave, there will be Londoners who are ‘caught up’ outside in the city during heatwaves, whilst going about their day-to-day lives. The cool spaces are designed to provide a short period of refuge during these times. Certain groups have specific medical advice to take during heatwaves. This initiative is not intended to replace any medical advice, and if people are unsure, they should consult their GP/ a medical professional.</p>	GLA

Resource / Support	Description	Provider(s)
Long term flood risk mapping	Provision of flood maps	Check the long term flood risk for an area in England - GOV.UK (www.gov.uk)
LFB hold a range of flood capabilities including rescue boats, pumps including high volume pumping and specialist flood mitigation equipment	Mutual aid and national assets are an option if required in addition to LFB capabilities.	London Fire Brigade
Surveying areas of flooding or severe weather damage using helicopter drone assets.	<p>Depending on prevailing weather conditions, aerial support may be available in the form of drones from the MPS and LFB or via helicopters from National Police Air Support (NPAS).</p> <p>NPAS may be used to provide footage of an area or transport commanders over the scene for situational awareness.</p> <p>Note: NPAS have no winch and rescue facility.</p>	NPAS / MPS / LFB
Mapping for Emergencies	Access to dedicated and specialised mapping resources	Ordnance Survey
Mutual aid support for Local Authorities during severe weather events	<p>Support for winter treatments & snow clearance for adjacent local authority routes and stakeholder property.</p> <p>Support with the procurement of severe weather materials including de-icers, sandbags and plant.</p> <p>Strategic sign / signal setting on National Highways routes to support traffic management on local authority routes.</p>	National Highways
Military support	<p>Military support available via Military Aid to Civil Authorities (MACA) requests.</p> <p>Note: MACA requests can provide support in a wide range of areas however should only be used when other resources have been exhausted or there is an immediate risk to life</p>	Military – via the Joint Regional Liaison Officer (JRLO)

Resource / Support	Description	Provider(s)
Internally provided referral and counselling services	Employee counselling services to provide support to those directly affected by the incident or by their role in the response	Within individual organisations
Voluntary services including welfare support, psychological aftercare, medial support, search & rescue, transport & escort	Detailed within the Voluntary Sector Capabilities Document .	Voluntary Sector

8. Draft Strategy

The below draft strategy (taken from v8.7 of the Strategic Coordination Protocol) will form the basis for the response to most severe weather or natural hazard scenarios.

Strategic Aim:

To work together to coordinate an effective emergency response, to preserve life, to minimise the impact on London communities and business, and aid the return to normality.

Strategic Objectives:

- To save and protect life
- To relieve suffering and provide humanitarian assistance
- To protect and restore essential services including critical infrastructure
- To maintain the health and safety of responders
- To protect the natural environment
- Reduce damage to and protect property
- To restore public transport and utilities
- To provide information to the community to aid self-help and community resilience
- To facilitate recovery and the return to a new normality

Further objectives may be appropriate for other, specific severe weather incidents.

Strategic Objectives for a Flooding Incident

- Proactive evacuation and protection of vulnerable locations
- Protection of infrastructure to mitigate secondary consequences
- Develop a coordinated media strategy and issue communications to warn and inform the public prior to impacts being observed
- Provide information on the likely level of disruption to travel and other services
- Identify mutual aid to help with rest centres, evacuation, erecting temporary defences, managing traffic disruption, dealing with injuries and rescue etc.

Part 2 – Hazard Specific Impact Information

9. Rain / Flooding

Lead Organisation: Local Authorities (surface and ground water flooding) and Environment Agency fluvial and tidal (coastal) flooding. The Met Office have a role in issuing warnings for rainfall.

The primary consequence of heavy rain is flooding, particularly in urban areas where the opportunities for the water to soak away are limited. Local authorities will be aware of areas that are likely to flood due to the topology and can take some preparatory actions (e.g. gully clearance) but the nature of flash flooding is that it is unpredictable and can occur in a wide range of areas.

The kind of impacts which may be experienced as a result of rainfall can be found on the [Met Office website](#), what that may mean for London is further detailed in **Section 9.2**.

9.1 Types of Flooding

Excessive rainfall can lead to different types of flooding dependant on variables such as rain intensity, location and duration.

	Responsible organisation	Description
Fluvial (river) flooding	Environment Agency (main rivers) Local Authority (ordinary watercourses)	Happens when a river cannot cope with the amount of water draining into it from the surrounding land. The result is often water overtopping or breaching of a riverbank or defence.
Groundwater flooding	Local Authority	Happens when the level of water within the rock or soil that makes up the land surface (known as the water table) rises and reaches ground level.
Pluvial (surface water) flooding	Local Authority	Occurs where rainfall exceeds natural and highway drainage capacity and therefore lies or flows over the ground instead. Surface water flooding can occur very quickly with little or no warning. This may be higher risk in the summer when rainfall can be heavy and infiltration rates reduced, and can coincide with drought or the end of a drought period.
Tidal (coastal) flooding	Environment Agency	Results from an incoming tide coming from the sea, raising river levels above the level of defences or from a breach in defences. The river Thames in London is tidal.
Reservoir, sewer and burst water main flooding	Owner of the asset involved*	Although these types of flooding can occur as a result of a severe weather event, they can also occur independent of severe weather due to a defect in the asset.

*sewer flooding may result from surface water flooding, in such instances the responsibility is held jointly by the asset owner and Local Authority

9.2 Impacts

<p>Health</p>	<p>Direct risk of injury and loss of life caused by entrapment and drowning (with a particular risk associated within basement properties as well as rough sleepers) – six inches of fast-moving water can knock an adult off their feet, two feet can move a car.</p> <p>Risk of further injury or death could occur if utilities are not adequately isolated in the event of a flood (e.g. electricity). Additionally, the use of petrol-powered pumps to remove flood water can cause a risk of carbon monoxide poisoning if done so in areas which are not well ventilated.</p> <p>Flood water may also be contaminated with sewage which presents additional risks to public health.</p> <p>Longer term, mental health impacts are the biggest health risk with anxiety caused from being involved in a flood, the effect of being displaced from your home and the time to repair the property. Additionally further stresses relating to the cost of repairs and any insurance issues.</p>
<p>Utilities</p>	<p>Disruption with consequent disruption beyond the areas affected. All utilities can be affected.</p> <p>If utilities have been damaged, flood water may impact the ability to repair and therefore impact the timescales for restoration.</p>
<p>Transport</p>	<p>Roads – Potentially difficult driving conditions with a risk of drivers becoming stranded in lower lying, flood prone areas. Increased congestion around flooded areas.</p> <p>Rail – Direct impacts due to flooding (lines and stations flooded) as well as potential secondary impacts such as water egress into signalling systems.</p> <p>River – Transport on the River Thames may still be available depending on the river conditions.</p> <p>Airports – Limited disruption to airport operation from surface water / ground water flooding. Depending on locations, there may be risk from Reservoir flooding and sewer / burst main flooding.</p>
<p>Emergency services</p>	<p>Delayed response due to road conditions. Additional demands such as calls to flooded properties and people stranded in vehicles.</p> <p>Search & Rescue on the River Thames would continue as HM Coastguard would not be affected.</p>
<p>Local Authorities</p>	<p>Risk of flooding to residential and commercial property with consequent damage and loss of revenue in commercial properties and a potential need for evacuations. Recovery can be prolonged and last many months or even years. Personal distress and accommodation requirements can be major issues as are insurance problems. Additional risks around the structural integrity of building subjected to forceful flood water.</p> <p>Further risk in areas with a high proportion of basement flats.</p>
<p>Environment</p>	<p>Risk to fish and other aquatic life where deoxygenated rainfall is diverted into rivers to avoid flooding.</p> <p>Surface water flooding may also lead to sewerage contaminating rivers.</p>

10. Wind

Lead Organisation: Local Authorities and Met Office.

The kind of impacts which may be experienced as a result of wind can be found on the [Met Office website](#), what that may mean for London is further detailed below.

IMPACTS	
Health	<p>Direct risk of injury and loss of life caused by falling trees and flying debris. This is compounded in an urban environment where there are high structures, construction work in progress and trees in the urban street scene.</p> <p>Longer term mental health impacts may be caused by dealing with the knock-on impacts e.g. potentially being displaced from your home and time and cost to repair the property.</p>
Utilities	<p>Most utilities in London are underground but disruption can occur where the infrastructure outside London is affected. London may also be affected by loss of utilities outside the capital (e.g. loss of electricity supplies).</p>
Transport	<p>Roads – Risk of trees blocking roads. Risk of debris and unsecured street furniture being displaced and entering live carriageway. Likelihood of pre-emptive road and bridge closures causing diversions and significant traffic delays. Risk of damage to roadside technology assets including fixed and mobile Variable Messaging Signs, Signals and Weather stations.</p> <p>Rail – Overhead electrification is at greater risk from severe gales than third / fourth rail – the former is found on the main lines in North (East Coast and West Coast) and West London (Western mainline) and certain parts of the London Overground network. A greater risk lies in trees blocking railways. Disruption can also occur as a consequence of staff having difficulties in getting to work.</p> <p>Winds in excess of 40mph are the initial trigger for London Underground.</p> <p>On the tram network, winds in excess of 60mph will enforce speed restrictions of 50kph in Croydon street track sections and winds in excess of 100mph network speed restriction of 50kph.</p> <p>River – Disruption to river traffic on the Thames will be dependent upon conditions as it may not be as susceptible as land-based services.</p> <p>Airports – Can experience disruption as a consequence including operational assets being unavailable until the high winds subside. Plans are in place to continue operations in all but the worst conditions.</p> <p>Other – Winds in excess of 17 metres/second will temporarily close the Emirates Airline (cable car).</p>
Emergency services	<p>May result in changing demand profiles as people remain indoors, but with increased reports of highways obstruction, structural damage to buildings and people injured or trapped as a result of severe weather.</p>

<p>Local Authorities</p>	<p>Significant risk of structural damage to buildings and other structures (trees, fences/walls etc), requirement to keep highways clear of obstruction, other damage control and recovery issues, such as removing debris and displaced/damaged street furniture.</p> <p>Potential increase in calls to assess dangerous structures.</p>
<p>Environment</p>	<p>Fallen trees are a direct impact of high winds. Where this occurs near drainage systems and watercourses there could be the secondary impact of blockages causing fluvial flooding, especially in the case of strong winds coupled with heavy rain.</p> <p>Air quality may be impacted if strong winds bring airborne particulate matter.</p>

11. Snow and Ice

Lead Organisation: Local Authorities and Met Office.

The kind of impacts which may be experienced as a result of snow & ice can be found on the Met Office website ([Snow](#), [Ice](#)), what that may mean for London is further detailed below.

The specific impacts related to cold weather are covered in Section 16.

IMPACTS	
Health	<p>Snow can impact upon health and health services in a number of ways. As part of the general effects of cold, accidents arising in conjunction with ice and disruption to staff and community services</p> <p>Risk of increased social isolation as older people may be less likely to go out for fear of falls - also difficulty getting to medical appointments, collecting prescriptions, shopping. There is also an increased risk to rough sleepers.</p> <p>The main impact of ice on health is in terms of trauma – primarily fractures but also head injuries and road traffic collisions. This can cause increased demands on A&E and orthopaedic services.</p>
Utilities	<p>Potential for frozen assets which may lead to an increase in burst water mains with knock-on impacts to water supplies.</p>
Transport	<p>Roads – Potential for traffic disruption and gridlock caused by snow and ice. Bus routes may be curtailed by road disruption.</p> <p>Rail – Rail services can be severely disrupted, leading to stranded trains / passengers. Ghost train de-icing units are used to prevent ice build-up.</p> <p>It should be noted that disruption occurring outside the London LRF area of operations can lead to significant impacts and demands on responders within London due to the ‘hub and spoke’ nature of the UK rail network.</p> <p>River – Limited impact.</p> <p>Airports – Airports can see pauses in operation due to clearance of snow but have processes in place to minimise impact.</p>
Emergency services	<p>Delayed response due to road conditions alongside increased demand in certain areas (e.g. road traffic collisions and slips, trips and falls).</p> <p>As HM Coastguard is a National organisation, Search & Rescue on the River Thames would be able to continue.</p>

Local Authorities	Some boroughs are at higher risk of impacts arising from snow and ice, particularly those in higher areas and where there are steep hills. Potential Business Continuity issues, particularly to frontline services supporting vulnerable residents, with disruption to transport infrastructure.
Environment	<p>Melting snow may cause flooding. Where snow is already causing travel and business disruption, the ability to respond to a subsequent environmental, such as a flood, may be impaired.</p> <p>Potential for pollution resulting from chemicals used in ice prevention and removal treatment on roads and buildings.</p> <p>Grit and salt on roads may contaminate rivers.</p> <p>Road disruption may cause an accumulation of industrial or agricultural waste, with potential for pollution.</p> <p>Frozen pipes may also leak chemical or biological pollutants, as well as drainage issues.</p>

12. Fog

Lead Organisation: Met Office

The kind of impacts which may be experienced as a result of fog can be found on the [Met Office website](#), what that may mean for London is further detailed below.

IMPACTS	
Health	Minimal impact generally, however - raised risk of multi-vehicle impacts on major roads
Utilities	Minimal impact on services.
Transport	<p>Roads – Increased risk of road traffic collisions on motorways and trunk routes.</p> <p>Rail – Limited impact.</p> <p>River – Moderate risk of disruption to services due to poor visibility.</p> <p>Airports – Delays at airports caused by decreased visibility, disruption for the duration of the fog and recovery of operation.</p>
Emergency services	<p>Potential for delayed response due to road conditions, otherwise minimal impact on services. All may experience a change of demand profiles resulting from poor weather.</p> <p>As HM Coastguard is a National organisation, Search & Rescue on the River Thames would be able to continue</p>
Local Authorities	Potential need to support road closures and clearance following Road Traffic Collisions (RTCs). Knock on effect for some services such as waste collection due to increased road traffic congestion.
Environment	<p>Road disruption due to poor visibility may cause localised air pollution due to idling car engines in traffic jams.</p> <p>In winter, freezing fog may cause ice to coat road surfaces. See section on Snow and Ice.</p>

13. Thunderstorms

Lead Organisation: Met Office

The kind of impacts which may be experienced as a result of thunderstorms can be found on the [Met Office website](#), what that may mean for London is further detailed below.

IMPACTS	
Health	There is some evidence of thunderstorm asthma triggered by pollen in the air and certain thunderstorm conditions. Thunderstorm asthma is a term used to describe any observed increase in acute bronchospasm cases following the occurrence of thunderstorms in the local vicinity, placing increased pressures on health services. Although thunderstorm asthma doesn't occur after every thunderstorm, it is important that professionals and the general public are aware of the potential risks.
Utilities	Potential for significant impact on sewage systems, with overwhelming of the drainage system, and resultant impact on assets.
Transport	<p>Roads – Potential for rapidly changing driving conditions and flash flooding, significantly increasing the risks of road traffic collisions.</p> <p>Rail – Rail services can be disrupted due to impact of extreme rainfall and associated pluvial flooding e.g. the washing away of track ballast leading to disruption and delays.</p> <p>River – Limited impact.</p> <p>Airports – Localised limited disruptions at airports for the duration of the thunderstorm and recovery of operation.</p>
Emergency services	<p>Changes in demand profiles due to flash flooding or damage to buildings. Road conditions may also cause a delay in response.</p> <p>As HM Coastguard is a National organisation, Search & Rescue on the River Thames would be able to continue</p>
Local Authorities	Risk of flooding, due to intense downpours associated with thunderstorms, to residential and commercial property with consequent damage and loss of revenue in commercial properties and potential need for evacuations. Recovery can be prolonged and last many months or even years. Personal distress and accommodation requirements can be major issues as are insurance problems. Additional risks around the structural integrity of building subjected to forceful flood water.
Environment	<p>Risk to fish and other aquatic life where deoxygenated rainfall is diverted into rivers to avoid flooding.</p> <p>Waterlogged land may cause damage to animal habitats and plant ecology in flooded areas, leading to a reduction in biodiversity.</p> <p>Surface water flooding may also lead to sewerage contaminating rivers. Other chemical and biological pollutants may be released from industrial or agricultural areas into water courses.</p>

14. Lightning

Lead Organisation: Met Office

The kind of impacts which may be experienced as a result of lightning can be found on the [Met Office website](#), what that may mean for London is further detailed below.

IMPACTS	
Health	Limited impact.
Utilities	Risk of damage to assets from lightning strikes, causing impact on service provision.
Transport	<p>Roads – Risk of damage to roadside technology assets including fixed and mobile Variable Messaging Signs, Signals and Weather stations.</p> <p>Rail – Lightning strikes on railway signalling systems can lead to severe disruption as systems have to be reset and damage repaired.</p> <p>River – Limited impact.</p> <p>Airports – May lead to small delays in aircraft turnaround process and may lead to increase separation of arrivals which will lead to delays in operation.</p>
Emergency services	<p>Potential delayed response due to safety.</p> <p>As HM Coastguard is a National organisation, Search & Rescue on the River Thames would be able to continue.</p>
Local Authorities	Potential damage to buildings and trees, leading to increased demand on dangerous structure surveys and arboriculture services. Risk of lightning strikes may delay response due to safety. Requirement to support vulnerable residents if affected by power loss.
Environment	<p>Risk of fire from lightning strike. Threat to trees.</p> <p>Association with thunder and heavy rainfall which can lead to localised surface water flood events.</p>

15. Extreme Heat

Lead Organisation: UK Health Security Agency

The kind of impacts which may be experienced as a result of extreme heat can be found on the [Met Office website](#), what that may mean for London is further detailed below. Also refer to the [Heatwave Plan for England](#).

IMPACTS	
Health	<p>Demand on health and social care services leads to increased strain on frontline services and excess deaths in hot weather.</p> <p>Many public buildings (hospitals, GP surgeries, prisons etc) and offices struggle to keep cool in high temperatures. High temperatures in cars and on trains also cause discomfort and health issues. However, in these cases it is actually the indoor temperature which is an issue rather than the air temperature outside. Building characteristics can impact on the likelihood of overheating, along with occupant behaviour and ability to adapt. Additionally, high night-time temperatures increase stress through disturbed or lack of sleep. This is particularly an issue for vulnerable people but can also affect workforces and productivity.</p> <p>At-risk groups for health impacts of hot weather include:</p> <ul style="list-style-type: none"> ● older age groups: especially those over 75 years, or those living on their own who are socially isolated. ● those with chronic and severe illness: including heart conditions, diabetes, respiratory or renal insufficiency, Parkinson’s disease or severe mental illness. Medications that potentially affect renal function, the body’s ability to sweat, thermoregulation (e.g. psychiatric medications) or electrolyte balance (diuretics) can make this group more vulnerable to the effects of heat ● infants are vulnerable due to immature thermoregulation, smaller body mass and blood volume, high dependency level, dehydration risk in case of diarrhoea ● homeless people/street sleepers may be at increased risk. Higher rates of chronic disease (often poorly controlled), smoking, respiratory conditions, substance dependencies and mental illness are more frequent homeless populations than in the general population. These risk factors increase the risks of heat related morbidity and mortality, on top of social isolation, lack of air conditioning, cognitive impairment, living alone and being exposed to urban heat islands. ● people with alcohol dependence and drug dependence often have poorer overall health and increased social isolation which can increase their risk of heat stress ● inability to adapt behaviour to keep cool such as having Alzheimer’s, a disability, being bed bound, drug and alcohol dependencies, babies and the very young <p>The main cause of illness and death during hot weather is respiratory and cardiovascular disease. Other heat-related illnesses include: heat cramps; heat rash; heat oedema; heat syncope; heat exhaustion and heatstroke.</p>

<p>Utilities</p>	<p>Rising temperatures increase the demand for power supply due to increasing use of air-conditioning and mechanical ventilation systems, and reduce the power carrying capacity of the network.</p> <p>There is also the potential for cooling problems at power stations.</p> <p>Extremes of temperature can put additional stresses onto assets, which can lead to an increased failure rate with resultant potential for impact to services.</p> <p>Heatwaves can lead to increased demand in water outstripping supplies, particularly in London and the South of England. Water companies have plans in place to manage such pressures and these are further explained in the drought section of this document.</p>
<p>Transport</p>	<p>Roads – Possible delays and congestion with potentially serious consequences for those stranded on the Strategic Road Network.</p> <p>Additionally there is the potential for melting of road surfaces at higher temperatures.</p> <p>Rail – Excessively high temperatures can lead to buckling of rails which in turn leads to speed reductions, disruption and cancellations. In areas where the traction power is supplied via Overhead Line Equipment (OLE) high temperatures can lead to sagging wires with increased risk of de-wirements, leading to disruption, delays and cancellations (as seen in Summer 2019). In both cases severe disruption can result. Additionally, disruption may also be caused by the overheating of trackside assets.</p> <p>24°C triggers hot weather activity within London Underground. Rails are monitored to prevent buckling according to the Critical Rail Temperature (CRT) of the relevant section of track. If this is exceeded, Temporary Speed Restrictions (TSRs) are applied. Bottled water emergency supplies are available at strategic locations if necessary.</p> <p>It should be noted that disruption occurring outside the London LRF area of operations can lead to significant impacts and demands on responders within London due to the ‘hub and spoke’ nature of the UK rail network.</p> <p>Airports – Potential of delays to airport operations.</p>
<p>Emergency services</p>	<p>Likely increase in demand on the London Ambulance Service (LAS) due to exasperation of respiratory illnesses. Additionally, there may be an increase in demand on other emergency services in support of the LAS.</p> <p>Hot temperatures can lead to social disorder due to increased alcohol consumption and having less sleep, which causes extra stress and discomfort.</p> <p>As HM Coastguard is a National organisation, Search & Rescue on the River Thames would be able to continue.</p>
<p>Local Authorities</p>	<p>Particular concern for vulnerable residents and an increase in demand on frontline social care services. Care home settings to ensure support and monitoring is provided to residents, following health advice. Additional welfare support provided to homeless individuals.</p> <p>Possible impacts to the road network – infrastructure and congestion-requiring repairs, traffic management measures, etc.</p> <p>Likely to be an increase in activity on / in watercourses such as the Thames by members of the public that could lead to an increase in river safety incidents. Especially if there is an increase in alcohol consumption.</p> <p>Requirement to provide cool space locations throughout the borough to provide members of the public with a place in the shade out of the sun.</p>

Environment

High temperatures can also be linked to poor air quality with high levels of ozone which are formed more rapidly in strong sunlight; fine particles (PM10, PM2.5) also increase in concentration during hot, still air conditions. See [Air Quality section](#).

Water quality can deteriorate causing problems for aquatic life and the growth of toxic algae blooms causing problems for public use of recreational water.

Increased risk of wildfires as vegetation will be much drier than usual – see [Wildfire Section](#).

Prolonged periods of warm, dry weather may also lead to an increased risk of [Drought](#).

16. Extreme Cold

Lead Organisation: UK Health Security Agency

Refer to the [Cold Weather Plan for England](#).

IMPACTS	
Health	<p>At-risk groups for health impacts of extremely cold weather include:</p> <ul style="list-style-type: none"> • older age groups: especially those over 75 years, or those living on their own who are socially isolated. Older people are more vulnerable to cold, partly because of an increased likelihood of suffering from pre-existing chronic illness, and partly because of a reduction in fat to retain body heat. They may be more vulnerable to indoor cold because they spend relatively more time at home and suffer a higher prevalence of fuel poverty. However, it should be noted that the health of people of all ages is affected by cold homes. • those with chronic and severe illness: including heart conditions, circulatory disease, asthma, COPD, depression and anxiety, diabetes and arthritis. • children under the age of five are vulnerable to the cold due to immature thermoregulation and a high dependency level. • homeless people/street sleepers are vulnerable to the cold due to exposure to outdoor temperatures, and other factors which increase vulnerability to cold, such as social isolation, smoking, substance dependencies, mental illness and chronic and respiratory diseases which are more prevalent in this population. <p>Excess winter deaths:</p> <ul style="list-style-type: none"> • In 2015/16 over 24,000 more people died in winter (December to March) in England and Wales than would be expected from deaths in the preceding/following four-month periods. The corresponding figure for London is around 2,000 excess winter deaths during the winter of 2015/16. In England and Wales, over a third of these deaths were from respiratory diseases, almost a quarter from circulatory disease, with almost a further fifth from dementia and Alzheimer’s disease.
Utilities	Potential for frozen assets which may lead to an increase in burst water mains with knock-on impacts to water supplies.
Transport	<p>Roads – Long periods of extreme cold can vastly increase de-icer usage due to heavier and more regular treatment does being required to mitigate deep-cold. This significantly increases the risk of Highway Authorities running low on de-icers including salt and treatment chemicals.</p> <p>Rail – For rail impacts see Snow & Ice above.</p> <p>River – Limited impact.</p> <p>Airports – Potential of delays to airport operations.</p>

<p>Emergency services</p>	<p>Delayed response due to road conditions.</p> <p>Increased demand on Emergency Services in support of London Ambulance Service.</p> <p>As HM Coastguard is a National organisation, Search & Rescue on the River Thames would be able to continue</p>
<p>Local Authorities</p>	<p>Particular concern for vulnerable residents and an increase in demand on frontline social care services. Care home settings to ensure support and monitoring is provided to residents, following health advice. Additional welfare support provided to homeless individuals.</p> <p>Highways service and contractors will be stretched maintaining the road conditions in extreme cold conditions. There is likely to be a knock on impact on some other services that are reliant on good road network conditions.</p>
<p>Environment</p>	<p>Frozen drainage systems may result in the inability to safely dispose of waste, which may then leach into the environment.</p> <p>Ice may also cause damage to pipework, resulting in pollution from leaked chemical or biological material.</p> <p>Anti-freeze, salt, and grit may pollute rivers and lakes where used on icy roads and buildings.</p>

17. Drought

Lead Organisation: Environment Agency and Water Providers

IMPACTS	
Health	<p>Health impacts of drought, as covered in the ‘Making the case’ report for the Heatwave plan include:</p> <ul style="list-style-type: none"> • Injury – e.g. diving into shallower waters than usual, swimming in unknown waters • Drinking water quality particularly of private water supplies • Algal blooms - Symptoms following ingestion of contaminated water during recreational activities include gastro-intestinal effects (e.g. abdominal pain, nausea, vomiting and diarrhoea) and respiratory features (e.g. sore throat and cough). Symptoms following recreational exposure include skin and eye irritation, respiratory features, and hay fever/asthma-like symptoms. • Dust from parched soils or smoke from wildfires • Mental health and wellbeing – impacts for those whose livelihoods depend on water <p>Resilience partners should monitor emerging drought situations and ensure that public advice reflects both conservation measures and human health needs e.g. reducing water consumption by ‘encouraging people to take shorter showers’, ‘consume cold food and stay out of the sun’.</p> <p>Increase / change to individual or institutional vulnerability arising directly or indirectly from drought or drought management measures e.g. individuals who require large volumes of water for medical reasons. Loss of private water supplies, and the associated anxiety / stress caused by direct and indirect impacts.</p> <p>Further information is available in the London Drought Plan; and from the Environment Agency and water providers.</p>
Utilities	<p>All water companies have drought plans (publicly available via their websites) which outline steps to be taken in a drought situation.</p> <p>Impact of drought on other utilities potentially includes a shortage of water to be used for cooling purposes.</p>
Transport	<p>Roads – Limited impact.</p> <p>Rail – Prolonged drought can lead to ground shrinkage which may result in damage to rails leading to disruption and delays.</p> <p>River – There should still be sufficient river levels to continue operations.</p> <p>Airports – Prolonged drought can lead to ground shrinkage which may result in damage to surface infrastructure, affecting airfield transportation (airfield pavements, roads, bridges etc.) and may impact operations.</p>

<p>Emergency services</p>	<p>As HM Coastguard is a National organisation, Search & Rescue on the River Thames would be able to continue.</p> <p>London Fire Brigade to send additional pumping and high-volume pumping appliances to incidents to provide adequate water supply to the incident.</p> <p>Potential for an indirect increase in calls to LAS due to people being without water supply, this is likely to be higher amongst vulnerable groups.</p>
<p>Local Authorities</p>	<p>Increase / change to individual or institutional vulnerability arising directly or indirectly from drought or drought management measures e.g. individuals who require large volumes of water for medical reasons. Loss of private water supplies, and the associated anxiety / stress caused by direct and indirect impacts.</p>
<p>Environment</p>	<p>A drought situation can have an impact on the environment, including plants, animals (especially wild animals) and soil.</p> <p>Low river flows and lake levels may damage the natural environment and ecology, causing risk to aquatic life.</p> <p>Inadequate water resource will impact agricultural land, with potential secondary impacts to food security.</p> <p>Drought in grass or woodland areas increases the risk of wildfire.</p> <p>Dry, dusty surfaces may cause a reduction in air quality due to airborne particulate matter.</p>

18. Wildfire

Lead Organisation: London Fire Brigade

IMPACTS	
Health	<p>Wildfire smoke can contain large amounts of fine and ultra-fine particles and potentially harmful gases.</p> <p>Smoke from large-scale wildfires is toxic and exposure to large amounts of smoke can have potentially serious health effects, especially within sensitive population groups. Potential health effects of smoke exposure may include:</p> <ul style="list-style-type: none"> • Irritation to eyes, nose and throat • Exacerbation of the symptoms associated with pre-existing respiratory conditions such as asthma and chronic obstructive pulmonary disease <p>There is strong evidence that exposure to smoke from large-scale wildfires can cause respiratory effects, resulting in increased admissions to hospital for respiratory symptoms, increased consultation in primary care for conditions such as asthma, and greater prescribing of medication.</p> <p>Large-sale wildfire may displace local population e.g. during an evacuation or if home is damaged by the fire.</p> <p>Health advice will depend on the severity of the smoke and the risk to the public. Advice should focus on sensitive populations such as adults and children with heart or lung problems who are more likely to develop symptoms following exposure to wildfire smoke, as well as health messages for the general population. Consideration and advice may need to be given for outdoor recreational activities in areas impacted by smoke.</p>
Utilities	<p>Minimal impacts unless specific assets are within the fire area</p>
Transport	<p>Roads – Smoke from wildfires across the carriage way may result in roads having to be closed.</p> <p>Rail – Lineside fires can damage railway infrastructure (cables and other signalling equipment) and can result in trains being stopped and the power supply being switched off to facilitate firefighting.</p> <p>Fires on / adjacent to railways will lead to delays and may lead to suspension of the train services with associated disruption. Network Rail is reliant on local fire and rescue services to deal with lineside vegetation fires / wildfires.</p> <p>Airports – Smoke from significant wildfires may have impact on aircraft operations.</p>

Emergency services	<p>Response may involve large and sometimes complex topography. The risk of metabolic heat stress and exposure to hot or cold conditions whilst firefighting is significant, due to the demanding workload and the intensity of fire conditions that may be encountered. Additionally low visibility and deteriorating light conditions.</p> <p>The LACES protocol should be adopted and implemented by all personnel at wildfire incidents. L – Lookouts, A – Awareness, C – Communications, E – Escape routes, S – Safety zones.</p>
Local Authorities	<p>Potential need to support evacuation and shelter requirements for displaced residents. Requirement to issue health advice to local residents, schools and care homes dependent on direction of wind etc. smoke from wildfires across roads may result in roads having to be closed.</p> <p>Need to manage local recovery to residents, businesses and impacted environment.</p>
Environment	<p>Smoke, carbon dioxide, and particulate emissions from a wildfire will directly impact air quality.</p> <p>Fire may damage plant and animal habitats, resulting in ecological disruption. The loss of vegetation may have secondary impacts associated with increased run-off during subsequent rainfall events. This may result in an increased risk of flooding.</p> <p>Firefighting activity may also impact the environment, where water may inundate an environment and disrupt plant or animal life. Firefighting foam and additives may have polluting effects.</p> <p>Fires in hazardous areas risk explosions, or chemical or biological leakage.</p>

19. Air Quality

Lead Organisation: Greater London Authority

IMPACTS	
Health	<p>Air pollution is a complex mix of particles and gases of both natural and human origin. Particulate matter (PM) and nitrogen dioxide (NO₂) are both major components of urban air pollution. Currently, there is no clear evidence of a safe level of exposure below which there is no risk of adverse health effects.</p> <p>Air pollution can affect everyone and exposure to air pollution has various different health effects, which come about at every stage of life, from a foetus' first weeks in the womb all the way through to old age. The health effects of air pollution are complex, and range in severity and impact. Although air pollution can be harmful to everyone, some people are more susceptible to health problems caused by air pollution. Groups that are more susceptible include children, the elderly, pregnant women, those with pre-existing cardiovascular and respiratory diseases and low income communities.</p> <p>Short term effects (over hours or days) of air pollution include: cough, shortness of breath, effects on lung function, wheezing and exacerbation of asthma. Episodes of high air pollution increase respiratory and cardiovascular hospital admissions and mortality.</p> <p>Long term exposure to air pollution (over years of lifetime) reduces life expectancy, mainly due to cardiovascular and respiratory disease, and lung cancer.</p>
Utilities	Minimal impact.
Transport	<p>Roads – Limited impact.</p> <p>Rail – Limited impact although secondary impacts may be seen if air quality is sufficiently bad to impact staff at external locations such as stations.</p> <p>River – Limited impact.</p> <p>Airports – Limited impact.</p>
Emergency services	Likely to be an increase in demand on the LAS due to effects of air pollution including cough, shortness of breath, wheezing and exacerbation of asthma. Episodes of high air pollution increase respiratory and cardiovascular hospital admissions and mortality.
Local Authorities	Particular concern for vulnerable residents and an increase in demand on frontline social care services. Care home settings to ensure support and monitoring is provided to residents, following health advice. Increased promotion of public health messaging.
Environment	Poor air quality can occur concurrently with high temperatures and sunshine can aid the production of photochemical pollutants such as ozone. In August 2003, a heat wave across Europe was accompanied by high levels of the pollutant ozone.

20. Volcanic Hazards

IMPACTS	
Health	Gas-rich eruptions which contain large amounts of sulphur dioxide and sulphate aerosols could cause poor air quality which will particularly affect those with pre-existing conditions (nationally 5 excess deaths per day / 16 additional cardiorespiratory emergency admissions per day).
Utilities	Minimal impact.
Transport	<p>Roads – Limited impact.</p> <p>Rail – Limited impact although secondary impacts may be seen if staff are stranded abroad.</p> <p>River – Limited impact.</p> <p>Airports – May lead to temporary closure of airspace and grounding of aircraft resulting in people being stranded abroad or stuck at airports.</p>
Emergency services	See Air Quality .
Local Authorities	Monitor local impacts, particularly considering individuals vulnerable to poor air quality, with the potential for increased demand on social care services.
Environment	Potential (depending on weather conditions) for emissions to impact air quality.

21. Space Weather

A report further detailing the potential impacts of severe space weather has been published by the Royal Academy of Engineering and is available [here](#), what that may mean for London is further detailed below.

IMPACTS	
Health	Minimal impact.
Utilities	May lead to loss of power and associated impacts.
Transport	<p>Roads – Risk of damage to roadside technology assets including fixed and mobile Variable Messaging Signs, Signals and Weather stations.</p> <p>Rail – Potential to impact communications.</p> <p>River – Limited impact.</p> <p>Airports – May lead to temporary loss of power at the airport and associated impacts. May also lead to impact to the wider aircraft operation.</p>
Emergency services	<p>Potential impacts on transport could lead to an increase in demand.</p> <p>Communications systems and GPS may be lost.</p> <p>As HM Coastguard is a National organisation, Search & Rescue on the River Thames would be able to continue</p>
Local Authorities	Potential impacts to telecommunications and loss of power to corporate buildings requiring the invocation of business continuity plans to maintain critical service provision. Power loss could impact traffic lights, ATM, banking and payment systems.
Environment	Communications disruption may impact the ability to respond to other environmental emergencies.

Part 3 – Capability Guidance

22. Risk

The [London Risk Register](#) identifies the risks and hazards to London. It provides individuals, communities and businesses in London with information to conduct their own planning.

The types of high impact weather and natural hazards considered in the risk register are presented in the table below.

Please note: The below matrix is taken from Version 11 of the London Risk Register published in February 2022. Ratings may change in future iterations, the latest version of the London Risk Register can be found [here](#).

Impact	5		R84 Severe Drought			
	4			R83 Surface Water Flooding, R92 Severe Space Weather, L21 Fluvial Flooding		
	3			R91 Low temperatures and heavy Snow, R85 Poor Air Quality, L19 Groundwater Flooding, HL19 Coastal/Tidal Flooding	R90 Heatwave, R87 Volcanic Eruption	
	2			L54d Wildfires, R93 Storms and Gales		
	1	R94 Earthquake				
		1 - Low	2 - Medium/Low	3 - Medium	4 - Medium/High	5 - High
		Likelihood				

23. Key Information Services and Products

23.1 Met Office Services

23.1.1 National Severe Weather Warning Service (NSWWS)

The National Severe Weather Warning Service provided by the Met Office is an impact-based warning service which provides a region-by-region assessment of any weather which may cause disruption or pose a risk to life.

The warning impact matrix is used to assess the likelihood of locations seeing impacts against the expected level of impacts. Once this assessment has been completed a tick is placed on the matrix thus giving it a colour.

However, the colour of the warning is not the important factor and it is critical to look at the location of the tick to ascertain the level of impacts expected.

Likelihood	High				
	Medium				
	Low			✓	
	Very Low				
		Very Low	Low	Medium	High
		Potential Impacts			

A Yellow (High Likelihood of Low Impacts) is very different to a Yellow (Very Low Likelihood of High Impacts) and may lead to a very different response being appropriate. The table below shows the potential impacts from severe weather.

Very Low	Low	Medium	High
<p>On the whole, day to day activities not affected but a few places may see small scale impacts occur</p> <p>A few transport routes affected.</p>	<p>Some short-lived disruption to day-to-day routines in affected areas</p> <p>Incidents dealt with under 'business as usual' response by emergency services</p> <p>Some transport routes and travel services affected. Some journeys require longer travel times.</p>	<p>Injuries with danger to life</p> <p>Disruption to day-to-day routines and activities.</p> <p>Short-term strain on emergency responder organisations.</p> <p>Transport routes and travel services affected. Longer journey times expected. Some vehicles and passengers stranded.</p> <p>Disruption to some utilities and services.</p> <p>Damage to buildings and property.</p>	<p>Danger to life</p> <p>Prolonged disruption to day-to-day routines and activities</p> <p>Prolonged strain on emergency responder organisations.</p> <p>Transport routes and travel services affected for a prolonged period. Long travel delays. Vehicles and passengers stranded for long periods.</p> <p>Disruption to utilities and services for a prolonged period.</p> <p>Extensive damage to buildings and property.</p>

Warnings are issued for 8 different weather elements: Rain, Thunderstorm, Wind, Snow, Lightning, Ice, Extreme Heat and Fog.

Each warning will contain the following elements:

- **Headline** – a short weather headline, which states what weather type, is forecast
- **What to expect** – details on the types of impact forecast and an indication of how likely those impacts are
- **Further details** – additional information on the forecast weather.

- A map with a polygon showing the area covered by the warning.
- The weather impact matrix showing where the tick has been assessed.

Accessing the NSWWS

Warnings are available across a wide range of platforms and channels. They are displayed on the Met Office [website](#), smartphone apps, widgets, and are available by email.

Warnings are also available to category 1 & 2 responders via the password protected [Hazard Manager](#) portal.

23.1.2 Met Office Hazard Manager

This tool is specifically for use by the emergency response community and provides a wide variety of information which could be useful in a weather-related event, including:

- Rainfall radar - provides the ability to see the intensity and extent of rainfall over the last 24 hours and forecast for the next 7 days.
- Current and forecast information for other types of weather hazards including any warnings that have been issued for rain, thunderstorm, wind, snow, lightning, ice, extreme heat and fog.
- Hazard Advice through the Daily Hazard Assessment
- Flood Guidance Statement
- Heat Health and Cold Weather Alert Service

23.1.3 London Volcanic Ash Advisory Centre (VAAC)

The London VAAC is an International Civil Aviation Organization (ICAO) designated centre, responsible for issuing advisories for volcanic eruptions originating in Iceland and the north-eastern corner of the North Atlantic.

Hosted and run by the Met Office from its Exeter UK headquarters, the London VAAC has specialist forecasters who produce volcanic ash advisories and guidance products using a combination of volcano data; satellite-based, ground-based and aircraft observations; weather forecast models and dispersion models.

Further information can be found at: <http://www.metoffice.gov.uk/aviation/vaac/>

Advisories for volcanic eruption form part of the Daily Hazards Assessment with yellow, amber and red levels used to indicate the severity of the risk. Potential impacts from a volcanic eruption also form part of this assessment.

23.1.4 Met Office Space Weather Operations Centre (MOSWOC)

The Met Office Space Weather Operations Centre (MOSWOC) provides a UK operational space weather prediction centre to help protect the country from the serious threats posed by space weather events. MOSWOC provides operational 24/7 forecasts and warnings of the impacts of space weather on UK services and infrastructure into Government and responder communities. Due to the global nature of the space weather hazard, any response in the UK is likely to be initiated and co-ordinated at a national level by the UK Government.

Further information on the operational forecasts and warnings for space weather is [available from the Met Office](#).

23.2 Flood Information and Warning Products

A range of services from the EA, Met Office and Flood Forecasting Centre, provide flood warnings and guidance to responders and the public

23.2.1 Flood Guidance Statements (FGS)

The Flood Forecasting Centre (a partnership between the Environment Agency and the Met Office) provides an assessment on the risk of flooding across England and Wales over the next five days, producing the daily Flood Guidance Statement.

The flood impact matrix is used to assess the likelihood of locations seeing flood impacts against the expected level of impacts. Once this assessment has been completed a tick is placed on the matrix thus giving it a colour.

However, the colour is not the important factor and it is critical to look at the location of the tick to ascertain the level of flood impacts expected.

Likelihood	High				
	Medium				
	Low			✓	
	Very Low				
		Minimal	Minor	Significant	Severe

Potential Impacts

It is important to understand which box is ticked and not to rely on the colour alone. A very low likelihood of a severe impact (yellow) would trigger different actions compared to a medium likelihood of a minor impact (also yellow).




The Flood Guidance Statement is issued daily at 10:30, and as required, to provide partners with a 5-day overview of all types of flood risk (river, coastal, groundwater and surface water). Each flooding type is given a green, yellow, amber or red risk rating

The Flood Guidance Statement takes account of:

- Recent weather conditions – has there been a recent period of prolonged rain or other high impact weather?
- Rainfall forecasts - is the forecast rain expected to be localised, short duration and high intensity or more widespread with a longer duration and of lesser intensity?
- Knowledge of catchments – how saturated is the ground, how high are the rivers and how quickly do they respond to rainfall?
- Detailed flood forecast models for the coast, showing tide heights, surges and large waves, and flood flows for rivers are evaluated.
- Seasonal factors including snow cover or leaf fall.
- The combined effect of river flow and high tides – if a river flood is being assessed, does this coincide with high tides?

23.2.2 Floodline Warnings Service

The Environment Agency is responsible for issuing warnings to the public, businesses, emergency responders and media relating to tidal and fluvial flooding. The Flood Warnings Direct system can send bulk messages to a mass audience via several formats (email, SMS text message and voice messages). This is a free registration system which supports Floodline and information on the Environment Agency website.

Warning Code	Meaning
 <p>FLOOD ALERT FLOODING IS POSSIBLE. BE PREPARED.</p> <p>PREPARE</p>	<p>Flooding is possible. Be prepared</p> <p>The impact on the ground will be flooding to roads, gardens, fields, recreation grounds, etc. Detail included with each Flood Alert will indicate the likelihood of escalating to Flood Warning.</p>
 <p>FLOOD WARNING FLOODING IS EXPECTED. IMMEDIATE ACTION REQUIRED.</p> <p>ACT</p>	<p>Flooding is Expected. Immediate action required</p> <p>Impacts on the ground will be flooding to homes and businesses, infrastructure (roads / underground stations / utilities etc) which will have a major impact. Expect significant transport disruption and a high level of local media interest.</p>
 <p>SEVERE FLOOD WARNING</p> <p>SURVIVE</p>	<p>Severe Flooding. Danger to life</p> <p>Impacts on the ground include deep and fast flowing water, potential collapse of structures, critical resources disabled, large towns/communities isolated, and large volumes of evacuees. Expect significant transport disruption and a high level of local and national media interest.</p> <p>These are only issued in exceptional circumstances and are likely to only be issued once a certain level of flooding has already occurred.</p>
<p>Flood Alert / Flood Warning / Severe Flood Warning, no longer in force</p> <p>(No icon)</p>	<p>The flood alert / warning / severe flood warning is no longer in force for this area.</p> <p>Used to inform that the situation is improving.</p> <p>Even when a Flood Warning or a Severe Flood Warning is removed it may still mean that there are flooded properties, damaged infrastructure and standing water where flooding has occurred.</p>

23.2.3 Live Flood Warning Map and Gauge Map

The [live flood warning map](#) shows locations of flood alerts, warnings and severe flood warnings that are in force. The map also has layers such as local authorities, MP constituencies and Environment Agency boundaries.

[GaugeMap](#) uses near real-time river water level data and indicates whether the water level is below average, in the normal range or whether flooding is possible. In addition, each river gauge automatically tweets its level twice per day.

23.2.4 Groundwater Flood Alerts

Ground water flood alerts can be issued from the Environment Agency for the South East of London specifically to London Boroughs of Southwark, Lewisham, Bexley, Bromley, Merton, Sutton and Royal Borough of Greenwich. When groundwater levels are high, low lying roads and fords are likely to be closed and cellars and basements in low lying properties could flood. The combination of high groundwater and heavy rain increases the risk of flooding to properties.

23.3 Extreme Temperature Forecasts

23.3.1 The Heat Health Alert service

A Heat-health alert service operates in England from 1 June to 15 September each year. Alerts are issued when there are sufficient levels of confidence in the forecast that trigger thresholds will be met, or as soon as temperatures are reached. **Trigger thresholds for London are two consecutive days with temperatures of 32°C or above, with temperatures of 18°C on the intervening night.**

The alerting service comprises of five levels (levels 0-4).

Level	
0	Year-round planning All year
1	Heatwave and summer preparedness and action programme 1 June to 15 September
2	Heatwave is forecast – Alert and readiness 60% or greater risk of heatwave in the next 2 to 3 days
3	Heatwave action Temperature reached in one or more Met Office National Severe Weather Warning Service regions
4	Major incident – Emergency response Central Government will declare a Level 4 alert in the event of severe or prolonged heatwave affecting sectors other than health.

While a heat-health alert is in operation, UKHSA will routinely monitor data on health impacts from real-time syndromic surveillance systems.

When responding to a period of extreme heat, this plan should be read alongside the [Heatwave Plan for England](#). This plan recommends a series of steps to reduce the risks to health from prolonged exposure to severe heat for:

- the NHS, local authorities, social care, and other public agencies
- professionals working with people at risk
- individuals and local communities

Extreme temperatures can be dangerous to everyone. However health impacts begin at moderate temperatures, meaning action is required before the heat gets to an extreme level.

Messages for the public are available in a series of [Beat The Heat resources](#).

23.3.2 The Cold Weather Alert service

A cold weather alert service operates in England from 1 November to 31 March each year. **Alerts are issued when there are sufficient levels of confidence in the forecast that there will be mean temperatures of 2°C or less for at least 48 hours, and / or snow and ice.**

The alerting service comprises five main levels (levels 0-4).

Level	
0	Year-round planning All year
1	Winter preparedness and action programme 1 November to 31 March
2	Severe winter weather is forecast – Alert and readiness mean temperature of 2°C or less for a period of at least 48 hours and or widespread ice and heavy snow are predicted, with 60% confidence
3	Response to severe winter weather – Severe weather action Severe winter weather is now occurring: mean temperature of 2°C or less and or widespread ice and heavy snow.
4	Major incident – Emergency response Central Government will declare a Level 4 alert in the event of severe or prolonged cold weather affecting sectors other than health

When responding to a period of extreme heat, this plan should be read alongside the [Cold Weather Plan for England](#). This plan recommends a series of steps to reduce the risks to health from prolonged exposure to severe cold weather for:

- the NHS, local authorities, social care, and other public agencies
- professionals working with people at risk
- individuals and local communities.

The [Stay Well In Winter website](#) has information for the public and responders.

23.4 Other Alerting / Warning Services

23.4.1 Drought

The onset or ending of a period of drought is not easy to predict. Therefore, in the event of a prolonged period of below average precipitation, the Met Office will work closely with the Environment Agency to ensure they have the most accurate (short term) weather forecasts and weather data to assist in any drought planning.

Advances in weather forecasting mean that weather forecasts for a period of up to five days are now very detailed and accurate Met Office forecasts tailored to specific requirements can also give valuable guidance for up to 30 days ahead.

However, with regard to the timescales over which a drought event evolves, the scale of global weather systems mean that it is only possible to identify the high level risks of different scenarios occurring.

Normal	Drought planning actions in a normal water resource situation.
Prolonged dry weather	Drought actions required to prepare for drought once prolonged drier conditions are evident.
Drought	Actions required to manage drought once localised drought conditions impact on people, business and the environment.
Severe drought	Actions required to manage widespread drought and significant impacts on people, businesses and the environment
Recovering drought	Actions required to monitor and manage the return to normal water resources conditions.

23.4.2 Air Quality

There are a range of monitoring and alerting systems in place for Air Quality

- [UK Air](#) provides a national forecast for the next five days
- [airTEXT](#) provides local forecasts for the next three days, by text, email or voicemail.
- Mayor’s Air quality alert system – Provides alerts for London on moderate, high and very high pollution days. Schools and boroughs are contacted by email. Transport for London issue local air quality advice (at high or very high levels) at stations, bus stops, river piers, digital signs along major roads and the [Transport for London website](#).
- [London Air](#) website and app provides local alerts and forecasts

Air pollution levels fit into four bandings (Low, Moderate, High and Very High). The accompanying messages for both at risk individuals and the general population are show in the table below.

Air pollution banding	Value	Accompanying health messages for at-risk individuals*	Accompanying health messages for the general population
Low	1-3	Enjoy your usual outdoor activities.	Enjoy your usual outdoor activities.
Moderate	4-6	Adults and children with lung problems, and adults with heart problems, who experience symptoms, should consider reducing strenuous physical activity, particularly outdoors.	Enjoy your usual outdoor activities.
High	7-9	Adults and children with lung problems, and adults with heart problems, should reduce strenuous physical exertion, particularly outdoors, and particularly if they experience symptoms. People with asthma may find they need to use their reliever inhaler more often. Older people should also reduce physical exertion.	Anyone experiencing discomfort such as sore eyes, cough or sore throat should consider reducing activity, particularly outdoors.
Very High	10	Adults and children with lung problems, adults with heart problems, and older people, should avoid strenuous physical activity. People with asthma may find they need to use their reliever inhaler more often.	Reduce physical exertion, particularly outdoors, especially if you experience symptoms such as cough or sore throat.

**Adults and children with heart or lung problems are at greater risk of symptoms. Follow your doctor's usual advice about exercising and managing your condition. It is possible that very sensitive individuals may experience health effects even on Low air pollution days. Anyone experiencing symptoms should follow the guidance provided below.*

When a 'High' or 'Very High' air pollution episode is forecast, Defra calls an Air Pollution Episode – Decision Group (APE-DG) teleconference. Scientists and communication specialists from UKHSA/Met Office/Defra/Welsh Government are invited to join. The aim of the group is to review the evidence and reach a collective view on prospective action – particularly public notification prior to the air pollution episode taking place.

Defra issues alerts when 'High' or 'Very High' air pollution episode is forecast and/or 'High' or 'Very High' levels are measured for several days or over a large part of the country. A 'High' episode is the first point in the table above at which the 'at risk' and the 'general population' are expected to act.

If Defra issues a news story on UK Air / Gov.UK about a 'High' or 'Very High' air pollution episode, UKHSA requests that its standard health advice is included via a UKHSA quote, allowing media to add this in any coverage.

Social media activity (e.g. Twitter and Facebook) from all partner organisations can support sending out messages.

When air pollution levels are forecast to be high, UKHSA helps to disseminate national health messages prior to, and during, an ambient air pollution episode to ensure the public is aware of any actions they or their family may need to take to protect their health.

Recommended Actions and Health Advice can be found via <https://uk-air.defra.gov.uk/air-pollution/daq>

The Mayor's air quality alert system sends out advisory messages by email to schools and other stakeholders if air pollution is forecast to be moderate, high or very high on the following day. When high or very high air pollution is forecast, information is also displayed on Transport for London infrastructure including electronic displays at bus stops, in the underground and beside trunk roads.

During high and very high alerts, the GLA utilise the London Resilience Forum, to cascade the messaging further. The forum is contacted by a mixture of direct emails and phonecalls.

To determine the pollution alert level, the mayors air quality alert system reviews models from Defra, Imperial College London, and Air text to make an informed decision on the air quality for London. The decision is based using the modelling data as well as real time pollution data from the AQ monitoring network.

23.4.3 Fire Severity Index

The Met Office's Fire Severity Index (FSI), is an assessment of how severe a fire could become if one were to start. It is not an assessment of the risk of wildfires occurring. The FSI shows the current day's fire severity and a forecast of likely fire severity over the coming five days. The index values are from 1 to 5, which represents an increasing degree of fire severity as follows:

- FSI level 1 = low fire severity
- FSI level 2 = moderate fire severity
- FSI level 3 = high fire severity
- FSI level 4 = very high fire severity
- FSI level 5 = exceptional fire severity

23.4.4 Natural Hazards Partnership

The [Natural Hazards Partnership's \(NHP\) Daily Hazard Assessment](#) (available through Hazard Manager and ResilienceDirect) provides an overview of potential natural hazards and health impacts that could affect the UK over the coming 5 day period together with links to the hazard owner website if relevant.

Further information about the work of the Natural Hazards Partnership, including [hazard overview notes](#) are available on the [NHP website](#).

Annex 1 – Roles and Capabilities

Roles and capabilities of the key organisations likely to be involved in severe weather and natural hazards are listed below.

UK Health Security Agency (UKHSA)

- Severe Weather & Natural Hazards capability lead
- Provide independent expert advice on health protection and provide specialist health protection services
- Prepare and respond to health hazards and emergencies caused by severe weather, e.g. heatwaves, cold weather, flooding, air quality
- Support and advise other organisations with a health protection role.
- Raise public awareness to the potential risks and consequences before and during the event, and to provide public and professional guidance and reassurance as appropriate
- Monitor the impact on health through real-time syndromic and other surveillance

Environment Agency (EA)

- Issue flood alerts and warnings for rivers and the sea to the public, partners, media and businesses via the Flood Warning Service
- Provide a daily assessment of all flood risk to emergency response partners via the Flood Forecasting Centre
- Prevent or minimise the impact of incidents on the environment, people and property
- Monitor the impact of incidents on the environment
- Investigate the cause of incidents and consider enforcement action where appropriate
- Monitor, inspect and operation of flood defence assets
- Provide advice and support to multi-agency tactical or strategic co-ordinating groups

With regards to incidents affecting the environment, people or property, during the recovery phase the Environment Agency will, where relevant:

- provide technical support, information and advice on environmental impacts and the causes of the incident to professional partners, community groups and the public as appropriate
- in the case of flooding, raise awareness among communities about flood risk, as well as encouraging sign up to the flood warning service (where provided)
- promote sustainable development principles as an element of the recovery process
- advise on pollution prevention activities
- advise on and regulate the storage and disposal of wastes (including Hazardous and CBRN)
- monitor the input of pollutants (within their remit) to the environment and where necessary the impact upon the environment

Met. Office

- Provide warnings of severe weather, weather forecasts and a Civil Contingency Advisor service
- Operate the 'Hazard Manager' interactive web portal for use by Category 1 and Category 2 responding organisations

- Deliver the Heat-Health Watch and Cold Weather Alert Services in partnership with the Department for Health & Social Care and UK Health Security Agency
- Work jointly with the Environment Agency as part of the Flood Forecasting Centre to provide an overview of flood risk from rivers, surface-water, ground water and the sea
- Provide weather advice and plume modelling services during airborne pollution events and disease outbreaks
- Provide the Fire Severity Index to Natural England to regulate public access to statutory Access Land under the Countryside and Rights of Way Act 2000
- Act as one of the worldwide Volcanic Ash Advisory Centres (VAACs) providing advice and information in the event of a volcanic eruption
- Operate the Met Office Space Weather Operations Centre (MOSWOC) providing advice and information to government departments in the event of a severe space weather episode

Metropolitan Police Service / City of London Police / British Transport Police

- Saving of life together with other emergency services
- Coordination of the emergency services, local authorities and other organisations responding to an incident
- In the event of evacuations, the police will appoint an officer responsible to coordinate an evacuation in conjunction with other emergency services
- Prevention of crime
- Secure, protect and preserve the scene and control sightseers and traffic through the use of cordons

This list is not exhaustive, a full list of police roles and responsibilities at a major incident can be found in [LESPL Major Incident Principles](#).

London Fire Brigade (LFB)

- Provide the use of specialist equipment, such as flood rescue assets and pumps
- Provide professional advice on Fire and Rescue issues
- Provide a search and rescue capability if required.

London Ambulance Service

- Coordinate all medical response at the scene of an adverse weather incident
- Provide a medical response to operate in conjunction with other agencies within any hazardous or complex environment via the Hazardous Area Response Team (HART)
- Work with other agencies around any need for decontamination
- Assist with evacuation of people that have a medical need for assistance
- Act as the gateway to wider health partners

HM Coastguard

HM Coastguard have a number of Flood Rescue Teams to a declared status. HM Coastguard and available through mutual aid. Flood rescue teams are also provided to the EA as a declared facility.

Local Authorities (LA)

- Identify and provide social care support for vulnerable or displaced people
- Provide temporary accommodation to those displaced by an incident

- Provide household refuse and recycling collections
- Ensure the safety of buildings and structures
- Clear snow and ice in priority public areas (owned by the Council)
- Provide assistance to other agencies
- Maintain Council's services
- Lead on providing support to the local community, working with community groups and residents, monitoring for any potential community tensions as required
- Deal with any highways issues (in conjunction with National Highways and TfL as required) such as road closures, clean up (including fallen trees and damaged street furniture), etc.
- In line / consultation with advice from relevant lead agency, provide Environmental and Public Health advice, as a result from flooding, heat, cold, drought, air quality alerts
- Share key messages (including alerts and warnings) with internal teams, key suppliers and schools
- Provide specialist advice on the safety of roads/bridges and other infrastructure
- Please note that this list is not exhaustive.

London Resilience Group

- Support effective Partnership strategic coordination arrangements
- Provide strategic advice to the SCG and the Partnership to support informed decision making
- Deliver the London Local Authority Coordination Centre (LLACC) function in support of London Local Authority Gold (LLAG) and the 33 Borough Emergency Control Centres
- Provide advice to LLAG to support to support informed decision making
- Coordinate Local Authority mutual aid

NHS England - London

- Coordinate the provision of health care to affected areas
- Support multi-agency partners in the provision and advice to evacuees, survivors and relatives, including replacement medication
- Provide support, advice and leadership on health aspects of an incident
- Support screening, epidemiology and long-term assessment and management of the health effects of an incident
- Maintain liaison with and co-ordinate the response with the Department of Health & Social Care and NHS England - National.

Integrated Care Systems / Boards (ICS / ICB)

- Responsible for leading the local health system and coordinating the system response
- Support multi-agency partners in the provision and advice to evacuees, survivors and relatives, including replacement medication
- Lead in ensuring that key local health providers and partners have taken appropriate action
- Support long term provision of mental health services

Greater London Authority (GLA)

- Issue the Mayor's Air Quality alerts

- Understand and monitor the short and longer term, direct and indirect impacts of severe weather and natural hazards on business activity by liaising with local authorities, major employers and representatives of smaller local businesses in the area concerned
- Identify what action is required of GLA functional bodies to alleviate the impacts
- Decide quickly what direct funding GLA could and should provide

Transport for London (TfL)

- Minimise the impact of weather, such as snow, high temperatures, frost and leaf fall on services
- Maintain fleet of carriageway gritters, that can be fitted with ploughs, mini gritters to de-ice cycleways as well as gritting quad bikes, flat bed trucks and teams of operatives to operate across TfL's road network.
- In snow, maintain gritting routes utilised by TfL's Network Management Directorate (NMD) and HMPF (Highway Maintenance Project Framework). The Pan London Resilience Road Network which is made up of key strategic routes gives access to essential facilities and services such as hospitals, Fire Stations, Ambulance stations.
- Maintain plans to ensure Dial a Ride, London River Service and Victoria Coach Station can cope with the winter weather
- Broadcast air quality advice across London whenever pollution is high or very high. You will see notifications at Tube stations, bus stops, river piers, on digital signs along major roads and on this website.
- The management of rail services within and also to/from London is shared between TfL (London Underground) and Network Rail. Rail weather forecasts, with specific triggers for preparation against risks (heavy rain, wind, heat and ice/snow), are provided and the necessary action taken against each risk.
- LU and NR are co-located and share operational information, with ready access to customer communication channels.

Network Rail

Network Rail maintains and operates the UK's mainline railway including twenty of the largest stations (the majority of the London termini stations are amongst these). The trains travelling across the network are operated and maintained by Train Operating Companies (TOCs). The UK rail network is very much a "hub and spoke" arrangement with the five English and Welsh Regions directly linking to London and Scotland's Railway also running direct services to/from London. This means that disruption to the network outside of London can still have significant impacts in London (and vice versa).

Network Rail leads the rail industry response to disruptive events supported by the TOCs with one key exception – the TOCs lead activity for caring for passengers caught up in an incident/disruption including where possible repatriation of stranded passengers.

The two key contact points during disruptive events for London Resilience Forum partners are the National Operations Centre (NOC) based in Milton Keynes and its satellite site NOC – London which is co-located with TfL's control functions at Palestra. Contact details for both locations can be found in the London Partnership Contacts Directory.

National Highways

It is National Highways' policy to ensure, so far as is reasonably practicable, that safe passage on the Strategic Road Network (SRN) is not endangered by snow or ice, and alert procedures and actions are taken to minimise risk to safe passage posed by fog, high temperatures, heavy rain and high winds. Connect Plus Services (CPS) are contracted to fulfil National Highways' (NH) severe weather requirements on the M25 and other NH owned roads within the M25.

CPS have 8 winter service depots around the M25, which maintain a 7 day stock of salt and other solutions, gritter and ploughing vehicles used in the event of forecast snow and ice.

National Highways will:

- Ensure motorists are kept informed by providing travel guidance and information prior to and during severe weather including Twitter and via the National Highways and Traffic England websites.
- Assist broken down vehicles or vehicles involved in RTCs

Utilities

Major utilities such as National Grid (Gas), UK Power Networks, South East Water, Thames Water and BT have their own contingency plans, which would be activated as required. Utility providers have a regulatory duty to provide a reliable service and to work with the emergency services and other resilience partners during emergencies. Companies will be required to:

- Liaise closely with emergency services and local authorities during the response and provide assurance on resilience of the network
- Enact their contingency plans to resolve service disruptions promptly
- During a drought, Water companies will work with central, regional and local government to implement appropriate supply and demand management options

Military

- Provision of advice on potential Military support to a Multi-Agency response to severe weather impact.
- Liaison and generalist advice on Military Aid to the Civil Authorities (MACA).

Department for Levelling Up Housing & Communities (DLUHC)

- Provide a Government Liaison Officer (GLO).
- Provide the link between the London response and central government for sharing information / situational awareness, mutual aid and national support
- Sharing central government communications messaging and engaging on local messaging as appropriate to ensure consistency.

London Resilience Communications Group (LRCG)

The London Resilience Communications Group (LRCG), led by the Metropolitan Police Service, will activate in response to severe weather incident. They will:

- Co-ordinate strategic communications in London during a major incident or emergency.
- Ensure that mechanisms and structures are in-place to share key messages with a particular audience and the wider public.
- Establish a media centre (if required).
- Promote public awareness and preparedness activity to help reduce the stress to individuals associated with being caught up in a major incident, and assist emergency responders
- During incidents, responding agencies will monitor media enquiries, reporting and social media channels and respond where appropriate to reassure, clarify and offer verified updates.
- Resource to ensure common situational awareness across the London Resilience Partnership

Voluntary Sector

The nature, range and scale of services offered by the voluntary sector may alter depending upon the context of the emergency situation at the time (see [Voluntary Sector Capabilities Document](#)).

The voluntary sector can provide support in a number of generic areas specifically:

- Welfare
- Social and psychological aftercare
- Medical support
- Search & Rescue
- Transport
- Communications

Faith Groups

Faith Groups have a role in:

- Recognising the spiritual dimension of life and death
- A ministry of care and comfort to relatives and others caught up in the disaster
- Providing a ministry with Hospital Chaplains in hospitals
- Organising local religious services as required by the community

Business Sector

Business Emergency Resilience Group

The Business Emergency Resilience Group (BERG) helps businesses and communities across the UK to prepare for, respond to and recover from emergencies such as flooding. Through BERG, larger organisations such as insurance companies and banks are able to coordinate their support to ensure that small and medium are able to recover more quickly.

Chamber of Commerce

The London Chamber of Commerce is not a recognised responder, however can provide the following support to it's members:

- Making new business contacts
- Legal Expenses
- Insurance
- Business Helpline
- HR Advice
- Health & Safety service
- Payment services
- Risk Insurance

As well as experiencing impacts from a severe weather event, the business sector may be able to assist the partnership response. [London Chamber of Commerce and Industry](#), CBI, [London First](#), and British Retail Consortium, would work collaboratively in helping to deal with hazards facing London businesses through joint action.

Coordination with the Business Sector will occur through existing channels including [Cross Sector Safety and Security Communications](#).

CSSC

The Cross Sector Safety and Security Communications Project was set up to improve safety and security communications to London businesses during an incident. CSSC has two mechanisms for facilitating two-way communication between public authorities and the private sector; an email cascade system and a 'bridge call' system where direct, verbal updates can be given from public authority partners to a limited number of Industry Sector Leads (key representatives of industry groups). A small project team is responsible for the day to day development of the project and stand up as a 'Hub' to facilitate exchange and dissemination of information in an incident. The flow of information is designed to be two-way, so real time information can be fed back by businesses into the Hub to pass onto the authorities.

Insurance Industry

Following an emergency, the insurance industry will provide the following:

- Facts and figures about who and what is covered by household and business insurance
- Specific guidance on the issues likely to arise after a flood or terrorist event
- Details of the protocol between the insurance industry, the police and other emergency responders on communication and co-operation after a major event
- Key contact details of the organisations that represent the insurance industry.

For information, please contact:

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LONDON RESILIENCE GROUP

The London Resilience Group is jointly funded and governed by the Greater London Authority, London Local Authorities, and the London Fire Commissioner. We are hosted by the London Fire Brigade. Our work, and that of the London Resilience Partnership, is overseen by the London Resilience Forum.