

# London Risk Register

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## London Resilience Partnership Risk Register

Version 13 (February 2024) of the London Risk Register is collectively owned by the Category 1 and 2 Responders (as defined by Schedule 1 to the Civil Contingencies Act 2004) within the London Resilience Forum area.

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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.

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# 1. Introduction and Background

## 1.1 Purpose of this document

This document is for use by the London Resilience Partnership and members of the public and is intended to inform organisational business continuity and emergency response planning.

This document is compiled and published yearly by the London Risk Advisory Group and is approved for publication by the London Resilience Forum.

## 1.2 Introduction

Risk assessment underpins the work of the [London Resilience Forum](#). Assessments within the London Risk Register drive the development of multi-agency capabilities to prevent, mitigate, respond to, and recover from incidents.

Publication of the London Risk Register is designed to assist Local Authorities and businesses develop their own emergency and business continuity arrangements.

Planning is based on 'reasonable worst-case scenarios' informed by historical and scientific data, modelling, and professional expert judgement of both the likelihood and impact of a risk. The inclusion of a risk does not mean it is expected to happen, nor that the impact would be as serious as the description provided.

Each risk is scored for impact and likelihood. Likelihood is expressed as the "annual likelihood of each RWCS occurring, with the assessment valid for two years". Impacts are rated between "Limited" (1) and "Catastrophic" (5). The likelihood and impact scores are combined to give an overall risk rating.

The London Risk Register is designed to provide a summary of the main risks affecting Greater London. The UK [National Risk Register](#) (2023) provides a similar outline of risk for the UK as a whole. Further risk assessments are conducted within each London Borough, providing additional information on locally specific risks and response arrangements.

## 1.3 Risk assessment methodology

This version of the London Risk Register is aligned to the 2022 National Security Risk Assessment (NSRA, available on Resilience Direct to LRF partners only), with changes made to the methodology where necessary to contextualise risks for London.

For more detail on the risk assessment methodology see [appendix 1](#).

## 1.4 Understanding the Risk Register

Risks are grouped by theme and presented in order of overall rating within that theme, with the highest risks first. Themes are based on common features and consequences, which makes it easier to understand the risk in context and to consider which risks might influence, or be influenced by, others. Risk themes are accidents and system failures, human and animal disease, societal risks, natural hazards, cyber-attacks, and terrorist threats.

11 maritime-related risks are also contained with the Thames Risk Register, coordinated by the Port of London Authority in conjunction with relevant partners. A number of these risks are similar to those contained within this document but have emphasised the maritime aspect of those risks as opposed to land-side. Readers should be aware of the distinction between these two risk registers and should not consider one at the expense of the other.

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The headings used on the London Risk Register are as follows (definitions below):

Risk ID Rating	Sub-category Lead	Outcome Description	Likelihood	Impact	Controls in Place	Last Review Next Review
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**Risk ID:** Unique reference number for each risk. R denotes risk also appears on the National Security Risk Assessment.

**Rating:** Overall risk rating based on likelihood and impact.

**Sub-category:** In some cases, risks are sub-categorised for ease of comparison with similar risks.

**Lead:** The organisation responsible for the assessment of the risk in London.

**Outcome Description:** A summary of the reasonable worst-case scenario used to inform the risk.

**Likelihood:** Assessed from 1-5 where 1 is the least likely and 5 more likely. (A table with probabilities associated with each score is available at the end of this document.)

**Impact:** Assessed from 1-5 where 1 is the lowest impact and 5 more impactful.

**Controls in place:** Plans and procedures in place to mitigate this risk.

**Last review / next review:** Dates of the last review of that risk, and planned date for the next review.

## 1.5 Risk Review Schedule

All risks with an overall rating of “Very high” and “High” will be reviewed yearly, other risks will be reviewed every two years; review dates are in the right hand column of the register ([section 5](#)).

New risks will be reviewed the year after they are introduced to capture any new learning and will thereafter be reviewed yearly or every two years, as appropriate.

## 1.6 Controls

Controls specific to the type of incident referred to are listed in the register below. In addition, there are many generic plans, procedures and principles that aid multi-agency working in incident response and national initiatives that are used to aid responders in complex situations. These include:

- [London Emergency Services Liaison Panel](#) (LESLP)
- [Joint Emergency Services Interoperability Principles](#) (JESIP)
- Pan-London emergency response plans and frameworks available on [london.gov.uk](https://www.london.gov.uk) covering generic response procedures, consequence based planning for use in various incidents, and incident-specific plans.

## 2. New risks, removed risks and risks under review

Following last years’ comprehensive review of risks to London, under the newly updated 2022 NSRA which incorporated significant methodological changes, new risks were added to the London Risk Register in 2023 to better reflect the risk picture across the capital.

11 risks were added as a result of these changes:

- R04c – Marauding Terrorist Attack – Low Sophistication
- R05a – Maritime Terrorist Attack – Vehicle Borne Improvised Explosive Device (VBIED) attack on a passenger ferry
- R05b – Maritime Terrorist Attack – Marauding Terrorist Firearms Attack on a Passenger Ferry

- R37 – Insolvency of Supplier(s) of Critical Services to the Public Sector
- R39 – Failure of a Supplier of CNI Chemicals
- R46 – Malicious Drone Incident
- R47 – Disruption of Space-based services
- R48 – Loss of positioning, navigation, and timing (PNT) services
- R55b – Technological failure at a UK critical financial market infrastructure
- R89 – High-Altitude Electromagnetic Pulse (HEMP)
- R95 – Nuclear attack by a state on the UK mainland or overseas interests

In 2023, work of the London Risk Advisory Group consolidated and strengthened existing risk assessments, in addition to those introduced by the 2022 NSRA, and reviewed and improved newly introduced elements of national risk assessment methodology that required adapting so they would apply to London.

One radiological risk is currently under review:

- R53 Radiation release from overseas nuclear accident appears on the London Risk Register using the national summary assessment and is currently under review until additional subject matter expertise can be sought to ensure this risk assessment is appropriate in the London context.

### **3. Chronic Risks**

The newly updated 2022 NSRA made the distinction between acute and chronic risks and the decision was made for chronic risks to be removed from the National Risk Register. In order to align with the National Risk Register, London has taken the same approach.

The following risks have been removed from the London risk register as a result of this change:

- R96 The growth and spread of antimicrobial resistance
- R80 Systemic Financial Crisis

## 4. London Risk Register: High-Level Summary Risk Matrix

Impact	5	R22 Malicious attack on nuclear infrastructure, R52 Civil Nuclear Accident	R12 Non-state nuclear attack - urban area, R76 Drought, R89 High-Altitude Electromagnetic Pulse, R95 Nuclear Attack by State	R14 Biological Attack unenclosed urban area, R50a National Electricity Transmission Failure	R21 Attack on UK electricity infrastructure, R78 Pandemic	
	4	R45 Aviation Collision, R53 Radiation release from overseas, R56 Fire or Explosion at onshore COMAH site, R57 Large Toxic Chemical Release from onshore COMAH site, R58 Explosion at offshore oil or gas installation, R62 Reservoir/Dam Collapse	L54b Fires in large public and commercial buildings, R08 Malicious Aviation Incident, R48 Loss of PNT Services, R51 Gas Supply Infrastructure	R07 Malicious Rail network incident, R16a Chemical Attack unenclosed area, R16b Chemical Attack enclosed area, R73 High temperatures and Heatwaves, R75b Fluvial Flooding, R75c Surface Water Flooding	R17 Chemical Attack on water infrastructure, R19 Conventional attack chemicals infrastructure, R23 Malicious attack fuel infrastructure, R71 Severe Space Weather, R79 Emerging Infectious Disease	R02 Conventional attack on government, R04b Land-based attack - VBIED
	3	HL22 Building Collapse, HL23 Bridge Collapse, L66 Incident caused by mishandling of radioactive material, R59 Fire and Explosion at an onshore fuel pipeline, R63 Water Supply Infrastructure	HL105 Complex Built Environments, L71a Large Aircraft Incident, R10 Strategic Hostage Taking, R47 Disruption Space-based services, R50b Regional Failure of the electricity network, R60 Localised industrial accident involving small toxic release, R64 Food Supply Contamination, R65 Major Fire	HL10 Local Accident on Motorways/ Major Trunk Roads, L19 Groundwater Flooding, R40 Railway Accident, R44 High Consequence Dangerous Goods, R46 Malicious Drone Incident, R49 Disruption to telecoms systems, R74 Low temperatures and heavy Snow, R75a Coastal/Tidal Flooding, R77 Poor Air Quality	L54a Fires in purpose built high-rise flats, R05b MTA – Passenger Ferry, R09 Malicious maritime incident, R15 Radiological attack unenclosed area, R20 Attack on UK gas infrastructure, R67 Volcanic Eruption, R72 Storms and Gales, R82 Public Disorder	R04a Person-borne IED, R04c MTA – Low sophistication, R04d Marauding terrorist attack – firearms, R24 Cyber-attack on health and social care system, R55b Technological failure critical financial market infrastructure
	2	R38 Insolvency affecting fuel supply, R42 Maritime Pollution, R61 Accidental Release of a Biological Substance	R80a Animal Disease – foot and mouth, R80b Animal Disease – avian influenza, R80c Animal Disease – African horse sickness, R80d Animal Disease – African swine fever, R84 Industrial Action (firefighters), R86 Industrial Action (fuel)	L54e Major fire in care homes and hospitals, L71b Small Aircraft Incident, R26 Cyber-attack on telecommunications systems, R37 Insolvency Suppliers Critical Services, R83 Industrial action public transport	R05a MTA – VBIED, R13 Anthrax letters, R36 Major Social care Provider, R37 Collapse of major government contractor, R39 Failure of Supplier of CNI Chemicals, R55a Technological failure at a retail bank, R66 Wildfires, R85 Industrial action (prison officers), R87 Influx of British Nationals	L54c Fires involving landfill and waste processing sites, R11 High profile assassination
	1	R54 Radiation exposure from stolen goods, R68 Earthquake	R30 Cyber-attack SWIFT system	HL21 Land Movement, R28 Cyber-attack Gov't critical systems, R29 Cyber-attack Gov't data breach, R32 Undermining democratic activity, R41 Evacuation of passenger ship	R25 Cyber-attack incident - transport	
		1 - Low	2 - Medium/Low	3 - Medium	4 - Medium/High	5 - High
		Likelihood				

## 5. London Risk Register

### 5.1 Accidents and system failures

Risk ID Rating	Sub-category Lead	Outcome Description	Likelihood	Impact	Controls in Place	Last Review Next Review
<b>R50a</b> <b>VERY</b> <b>HIGH</b>	Systems Failure  Utilities Sector Panel	<b>Failure of the National Electricity Transmission System (NETS)</b>  A total national blackout due to the loss of the GB National Electricity Transmission System caused by damage to or technical failure of the transmission network. The technical recovery process (Black Start) could take up to 5 days; however, there is the potential for wide area power disruptions for up to 14 days, potentially affecting millions of consumers.	3	5	Testing and maintenance regime. London Power Supply Disruption Plan EDF Energy System Emergency Plan. EDF Energy Emergency Communication Plan. EDF Energy Black Start Plan. Business Continuity Plans for Category 1 and 2 Responders, businesses, and other key organisations London Power Supply Disruption Plan Major Incident/Emergency Plans for Category 1 and 2 Responders.	Nov 2023 Sept 2024
<b>HL10</b> <b>HIGH</b>	Accident  TfL	<b>Local accident on motorways and major trunk roads</b>  Multiple vehicle incident causing up to 10 fatalities and up to 20 casualties (internal injuries, fractures, possible burns); closure of lanes or carriageway causing major disruption and delay.	3	3	The Road Traffic Act 1988  The Road Vehicle (Construction and Use) Regulations 1986  The Traffic Management Act 2004	Sept 2023 Sept 2024
<b>L54a</b> <b>HIGH</b>	Fire  LFB	<b>Fires in purpose built high-rise flats</b>  Major fire in block of flats containing 80 compartments. Potential for up to 100 fatalities and 200 casualties.	4	3	See R65	Nov 2023 Sept 2024



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Risk ID Rating	Sub-category Lead	Outcome Description	Likelihood	Impact	Controls in Place	Last Review Next Review
<b>L54b HIGH</b>	Fire LFB	<b>Fires in large public and commercial buildings</b> Fire in large public building e.g. nightclub, sports stadium, shopping centre, transport hub or other. Potential for up to 50 fatalities and 50 casualties.	2	4	See R65	Sept 2022 Sept 2024
<b>R40 HIGH</b>	Accident TfL	<b>Rail Accident</b> Up to 30 fatalities and up to 100 casualties, (fractures, internal injuries - burns less likely). Possible loss of freight. Major disruption to rail line including possible closure of rail tunnel.	3	3	Railway and Transport Safety Act 2003 Railways (Access and Management) Regulations 2005 Railways (Accident Investigation and Reporting) Regulations 2005 Railways (Licensing of Railway Undertakings) Regulations 2005 Railways Act 2005 The Health and Safety (Enforcing Authority for Railways and Other Guided Transport Systems) Regulations 2006 The Railway Safety Levy Regulations 2006 The Railways Act 1993 Transport Act 2000 Health and Safety at Work etc. Act 1974 The Railway (Safety Case) Regulations 2000	Sept 2023 Sept 2024

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Risk ID Rating	Sub-category Lead	Outcome Description	Likelihood	Impact	Controls in Place	Last Review Next Review
<b>R44</b> <b>HIGH</b>	HAZMAT LFB	<b>Accident involving high consequence dangerous goods</b> A road or rail tanker containing dangerous goods and/or “high consequence” dangerous goods is involved in an accident leading to fire and an explosion. Up to 5 fatalities and up to 150 casualties. The explosion will cause varying degrees of damage to property and infrastructure depending on their distance from the incident. This risk could result in a toxic plume/gas cloud which would be harmful to the population, resulting in evacuation of the immediate area.	3	3	Health & Safety at Work etc Act 1974 Control of Substances Hazardous to Health Regulations 2002 Management of Health & Safety at Work Regulations 1999 Reporting of Injuries Diseases and Dangerous Occurrences Regulations	Nov 2023 Sept 2024
<b>R46</b> <b>HIGH</b>	Accident MPS	<b>Malicious Drone Incident</b> Malicious use of a drone at one major airport in the UK. The drone would enter the Flight Restriction Zone of the airport and provide a sufficient safety and/or security risk such that the airport takes the decision to close their airspace.	3	3	Security sector and aviation industry reminders Security systems to monitor and control access to restricted airspace Police contingency plans and Service level agreements at London Heathrow and London City Civil Contingencies Act (2004) Civil Aviation Act (2012)	Sept 2023 Sept 2024

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Risk ID Rating	Sub-category Lead	Outcome Description	Likelihood	Impact	Controls in Place	Last Review Next Review
<b>R48</b> <b>HIGH</b>	System Failure PLA	<b>Loss of Positioning, Navigation and Timing (PNT) Services</b>  A severe technical failure, due to either hardware failure or human error (e.g., software error, operator error), in the US Global Positioning System (GPS) satellite constellation leads to data corruption of the GPS service. The outage last for at least 30 days and restoration of full capability takes several more weeks.	2	4	Contingency planning for a large-scale incident of this type would remain with central government	Nov 2023 Under review
<b>R49</b> <b>HIGH</b>	Systems Failure LFB	<b>Simultaneous loss of all fixed and mobile forms of communication</b>  Loss of fixed and mobile telecommunications (both voice service and internet access) for up to 100,000 people for up to 72 hours.	3	3	Civil Contingencies Act 2004  Telephone provider demand and network capacity management strategies  National Emergency Alert for Telecoms	Sept 2023 Sept 2024
<b>R51</b> <b>HIGH</b>	Systems Failure Utilities Sector Panel	<b>Failure of Gas Supply Infrastructure</b>  A technical failure or accident in an upstream oil/gas facility, gas import pipeline terminal, or Liquefied Natural Gas (LNG) import reception facility leading to disruption in UK gas supplies.	2	4	DECC Upstream Crisis Management Plan  HM Government Downstream Oil Emergency Response Plan (DOERP)  Local Authority Fuel Shortage Response Plan and local DOERP  UK Power Networks System Emergency Plan	Nov 2023 Sept 2024
<b>R52</b> <b>HIGH</b>	Accident LFB	<b>Civil Nuclear Accident</b>  An accident at a UK civil nuclear site resulting in a large release of radiological material. A small number of onsite fatalities with additional off-site casualties from acute radiation sickness.	1	5	Contingency planning for a large-scale incident of this type would remain with central government	Nov 2023 Sept 2024

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Risk ID Rating	Sub-category Lead	Outcome Description	Likelihood	Impact	Controls in Place	Last Review Next Review
<b>R55b</b> <b>HIGH</b>	Systems Failure  Business Sector Panel	<b>Technological failure at a UK critical financial market infrastructure</b>  Technological systems failure that causes an outage of a systemically important UK financial market infrastructure lasting at least five days. This would significantly impact the processing of financial transactions, which might include interbank transactions, central securities depositories, payment systems and central counterparties.	5	3	Authorities Response framework – Financial Conduct Authority	Nov 2023 Sept 2024
<b>HL105</b> <b>MEDIUM</b>	Accident  Local Authorities	<b>Complex built environments</b>  Consequences of a major incident affecting large buildings or a complex built environment. Incidents in these facilities/areas have the potential to trigger a complex chain of events that lead to serious consequences for public safety.	2	3	Health and Safety at Work Act 1974. Management of Health & Safety at Work Regulations 1999. Fire and Rescue Services Act 2004 & guidance pursuant to the Regulatory Reform (Fire Safety) Order 2005. Safety at Sports Grounds Act 1975 and Fire Safety and Safety of Places of Sport Act 1987 Local building safety systems and practices Safety Advisory Groups in place at major sports grounds	Sept 2023 Sept 2025
<b>HL22</b> <b>MEDIUM</b>	Accident  Local Authorities	<b>Building Collapse</b>  Collapse of a large building (high-rise block, shopping mall etc). Up to 100 fatalities depending on the size and construction of building, and occupation rates, and 350 casualties. Potential for trapped or missing people. Localised loss of power and other essential services. Local access routes affected due to road closures.	1	3	Building Control regulations enforced by Local Authorities Construction, renovation, maintenance and demolition standards and enforcement Emergency Services and other responder's specialist resources	Nov 2023 Sept 2025

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Risk ID Rating	Sub-category Lead	Outcome Description	Likelihood	Impact	Controls in Place	Last Review Next Review
<b>HL23</b> <b>MEDIUM</b>	Accident Local Authorities	<b>Bridge Collapse</b>  Roads, access routes and transport infrastructure impassable for considerable length of time. Severe congestion over wide geographical area. Emergency access into/out of large populated areas severely restricted. Potential for trapped or missing people.	1	3	Building Control regulations enforced by Local Authorities Regular inspections under the Highways Act 1980 Height and weight restrictions and signs reduce the likelihood of an incident	Sept 2022 Sept 2024
<b>L66</b> <b>MEDIUM</b>	HAZMAT LFB	<b>Radioactive incident caused by mishandling of radioactive material</b>  A radioactive substance released in London because of an accident at a site or during transportation of radioactive material.	1	3	Radiation Monitoring Equipment deployed in affected areas. London Fire Brigade Mass Decontamination Procedures Scientific Technical Advice Cell (STAC) Scientific Advice to Government in Emergencies (SAGE) Radiation Protection Advisors	Sept 2022 Sept 2024
<b>L71a</b> <b>MEDIUM</b>	Accident LFB	<b>Large aircraft incident in proximity to airport</b>  Aircraft incident in close proximity of the airport boundary with fatalities or serious injuries resulting. Possibility for local structural collapse, HazMat material contamination.	2	3	See R45	Sept 2022 Sept 2024
<b>L71b</b> <b>MEDIUM</b>	Accident LFB	<b>Small aircraft incident in proximity to airport</b>  Small aircraft incident variation of L71a. Under 20 people directly involved in incident.	3	2	See R45	Sept 2022 Sept 2024
<b>R36</b> <b>MEDIUM</b>	Failure of governance  Local Authorities	<b>Major Social Care Provider Failure</b>  The failure of a major domiciliary care provider affecting 20,000 vulnerable people and their families.	4	2	Contingency planning for a large-scale incident of this type would remain with central government Local authority service continuity plans	Nov 2023 Sept 2025

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<b>R37a</b> <b>MEDIUM</b>	Governance Failure Local Authority	<b>Insolvency of Supplier of Critical Services to public sector</b> Insolvency of a supplier of critical IT services supporting operational systems or back-office processes integral to critical national services.	3	2	National government guidance FRC and other regulators of financial services	Sept 2023 Sept 2025
<b>R37b</b> <b>MEDIUM</b>	Failure of Governance Local Authorities	<b>Collapse of a major government contractor</b> The collapse of a major provider of integrated facilities and construction services for a range of private and public organisations.	4	2	Commercial business continuity and contingency plans Service continuity plans to maintain critical services	Nov 2023 Sept 2025
<b>R39</b> <b>MEDIUM</b>	Failure of Governance Utilities Sector Panel	<b>Failure of a supplier of CNI Chemicals</b> A supplier of chemicals essential for the operations of one or more UK Critical National Infrastructure (CNI) sectors suffers from operational failure within days or weeks.	4	2	Water Sector running cross-Industry Chemicals Group Cross-government emergency response coordinated within Cabinet Office	Nov 2023 Sept 2025
<b>R45</b> <b>MEDIUM</b>	Accident LFB	<b>Aviation collision</b> The worst-case scenario involves the collision of two commercial aircrafts.	1	4	Stringent controls on aircraft entering UK Airspace including the mandatory use of Aircraft Collision Avoidance systems on heavy aircraft. Access to UK airspace is heavily regulated CAA Maintenance and Flight safety standards exceed ICAO recommendations Airline maintenance regimes subject to CAA scrutiny and regulation. Strict controls over London Approach.	Sept 2022 Sept 2024

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<b>R47</b> <b>MEDIUM</b>	Accident LAS	<b>Disruption of space-based services</b> Collision of debris with a satellite in Low Earth Orbit (LEO) leads to a debris field that collides with and disrupts other satellites. This causes a cascade of debris impacting other satellites and creating further debris.	2	3	Monitoring by the International Space Station	Sept 2023 Sept 2025
<b>R50b</b> <b>MEDIUM</b>	System Failure UKPN	<b>Regional Failure of the Electricity Network</b> A significant failure of the electricity network across several regions of Great Britain leading to the loss of electricity power of up to 3.5 million customers for up to 24 hours; up to 350,000 customers still off supply for up to 48 hours; up to 20,000 customers off supply for a week; and 1000 customers off electricity supply for up to 2 weeks.	2	3	Testing and maintenance regime. London Power Supply Disruption Plan UK Power Networks System Emergency Plan. UK Power Networks Emergency Communication Plan.	Nov 2023 Sept 2025
<b>R53</b> <b>MEDIUM</b>	Accident LFB	<b>Radiation Release from overseas nuclear site</b> A radioactive substance release that affects the UK because of a nuclear accident overseas e.g. at a waste storage facility. UK outcome could include initial food restrictions, potential transport disruptions and impacts to the health system including the presentation of worried well.	1	4	REPPIR	Nov 2020 Under review

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<b>R55a</b> <b>MEDIUM</b>	Systems Failure Business Sector Panel	<b>Technological Failure at a Systemically Important Retail Bank</b> A technological failure which renders a significant portion of a retail bank's IT inoperable. Immediate effects last for 48-72 hours, with some customers experiencing disruption for several weeks as backlogs are cleared and potentially also some permanent data loss or data corruption.	4	2	Financial services sector plans to deal with a surge in demand for consumer facing financial services Communication plans to encourage consumer awareness which can be coordinated between HM Treasury, the Bank of England, and the Financial Conduct Authority Collective incident response capability under the Authorities Response Framework Business Continuity Management plans for financial service sector firms and their regulators.	Sept 2023 Sept 2025
<b>R56</b> <b>MEDIUM</b>	Accident LFB	<b>Accidental Fire or explosion at an onshore major hazard (COMAH) site</b> A major fire and/or explosion occurs at a Control of Major Accidents Hazards (COMAH) site that produces, stores or uses significant amounts of flammable or explosive substance such as refineries or petrochemical manufacturing sites.	1	4	Control of Major Accident Hazard 1999 (COMAH) Regulations. The Dangerous Substances and Explosive Atmosphere Regulations 2002 Petroleum Regulations Regulatory Reform (Fire Safety) Order 2005 Site Operators on-site contingency plans Emergency Services specialist resources	Nov 2023 Sept 2025
<b>R57</b> <b>MEDIUM</b>	HAZMAT LFB	<b>Accidental Large Toxic Chemical Release from a COMAH site</b> A large release of toxic chemical gas occurs from an onshore major hazard site manufacturing, using or storing dangerous substances.	1	4	Control of Major Accident Hazards Regulations 2005 (COMAH) Regulatory Reform (Fire Safety) Order 2005 Emergency Services and other responder specialist resources	Nov 2023 Sept 2025



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<b>R58</b> <b>MEDIUM</b>	Accident LFB	<b>Explosion at a high-pressure gas pipeline</b> <i>(risk to align with 2022 NSRA following risk review in 2024-25)</i>  Fire or explosion at a gas pipeline following ignition of gas under high pressure. This could result in a crater, destruction of buildings and evacuation of homes, as well as a cloud of gas/vapour.	1	4	Pipeline Safety Regulations 1996  Regulatory and industry measures including provision of maps for excavation  Emergency Services and other responder specialist resources	Sept 2022 Sept 2024
<b>R59</b> <b>MEDIUM</b>	Fires & Industrial Accidents LFB	<b>Accidental Fire or explosion at an onshore fuel pipeline</b> <i>(risk to align with 2022 NSRA following risk review in 2024-25)</i>  Accidental fire or explosion occurs at an onshore fuel pipeline close to a populated area affecting an area around the explosion of up to 1km.	1	3	Control of Major Accident Hazard 1999 (COMAH) Regulations.  The Dangerous Substances and Explosive Atmosphere Regulations 2002  Petroleum Regulations  Regulatory Reform (Fire Safety) Order 2005  Site Operators on-site contingency plans  Emergency Services specialist resources	Sept 2022 Sept 2024
<b>R60</b> <b>MEDIUM</b>	Accident LFB	<b>Localised industrial accident involving small toxic release</b> <i>(risk to align with 2022 NSRA following risk review in 2024-25)</i>  Localised industrial accident involving small toxic release impacting up to 1km from site causing up to 10 fatalities and up to 100 casualties.	2	3	Control of Major Accident Hazards Regulations 2005 (COMAH)  Regulatory Reform (Fire Safety) Order 2005	Sept 2021 Sept 2024

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<b>R62</b> <b>MEDIUM</b>	Systems Failure EA	<b>Reservoir/Dam Collapse</b> A reservoir or dam collapses without warning resulting in almost instantaneous flooding. Significant movement of debris (including vehicles) and sediment. Complete destruction of some residential and commercial properties and serious damage of up to 500 properties. Several thousand other properties could be flooded.	1	4	Reservoirs Act, 1975 Water Act, 2003 Regular statutory inspections Met Office National Severe Weather Warning Service	Sept 2023 Sept 2025
<b>R63</b> <b>MEDIUM</b>	Systems Failure Thames Water	<b>Water Infrastructure Failure or loss of Drinking Water</b> Failure of water infrastructure or loss of drinking water caused by the complete and relatively sudden loss of piped water supply or the degradation of the piped supply such that it is unfit for human consumption even after boiling. The RWCS assumes up to 350,000 people affected for between 24 hours and two weeks.	1	3	Water Industry Act 1991 London Water Supply Disruption Framework Security and Emergency Measures Direction 2022 Water companies mutual aid arrangements in place	Sept 2022 Sept 2024
<b>R64</b> <b>MEDIUM</b>	HAZMAT Local Authorities (W)	<b>Food Supply Contamination</b> A major contamination incident involving a microbiological pathogen in the food chain. This would cause illness, hospitalisation, and possible fatalities over a period of time while the source if contaminate is identified, and an overall response time of months.	2	3	Food Safety Act 1990 Imports monitored Local Authority Environmental Health Sampling UKHSA monitoring and surveillance Food Standards Agency plans	Nov 2022 Sept 2024

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Risk ID Rating	Sub-category Lead	Outcome Description	Likelihood	Impact	Controls in Place	Last Review Next Review
<b>R65</b> <b>MEDIUM</b>	Accident LFB	<b>Major Fire</b> A major fire in a building resulting in up to 140 fatalities and 200 casualties, significant damage to the building affected and disruption to local transport services for up to a week.	2	3	Regulatory Reform (Fire Safety) Order 2005 Fire Safety Approved Document B Fire & Rescue Services Act 2004 LFB Guidance Note 29 LFB Operational tactical and building plans LFB Urban Search & Rescue Teams (USAR) Fire Service National Resilience Assets LAS Hazardous Area Response Team (HART) Local Authority Dangerous Structures Engineer Casualty Bureau London Frameworks including: <ul style="list-style-type: none"> <li>Strategic Coordination Protocol</li> <li>Mass Fatalities Framework</li> <li>Mass Casualties Framework</li> </ul> Humanitarian Assistance Framework	Nov 2023 Sept 2025
<b>R38</b> <b>LOW</b>	Local Authorities	<b>Insolvency affecting fuel supply</b> Significant disruption to fuel supplies because of insolvency at a key refinery or terminals. Primary impacts are disruption to the production and/or supply of refined fuel products. Shortages can cause elevated short-term demand.	1	2	Reserve fleet of Road tankers Temporary financial assistance to some orgs to maintain fuel supplies while market responds. Central government arrangements for emergency fuel deliveries from downstream oil industry to maintain deliveries to key sites.	Sept 2021 Sept 2024

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Risk ID Rating	Sub-category Lead	Outcome Description	Likelihood	Impact	Controls in Place	Last Review Next Review
<b>R41</b> <b>LOW</b>	Accident MCA	<b>Larger Passenger Vessel Accident</b> Incident involving a passenger vessel in or close to UK waters leading to the ship's evacuation (or partial evacuation). A major incident involving a passenger vessel operating on the tidal Thames within the London Resilience area may result in a major loss of life by drowning.	3	1	Port of London Act 1968 (as amended) General Directions for Navigating in the Port of London Port of London Thames Byelaws 2012 International and national regulation of shipping aimed at preventing accidents by the safe construction and operation of ships by competent crews and shipping operators. These regulations are enforced by Flag States and subject to rigorous Port State Control checks, co-ordinated in European waters MCA (Class V legislation and High-Speed Craft Code) Port Marine Safety Code Port of London Authority Emergency Plans	Sept 2022 Sept 2024
<b>R42</b> <b>LOW</b>	HAZMAT PLA	<b>Major Maritime Pollution Incident</b> A large fully laden oil super tanker sinks in the approach to a port leading to the spillage of 100,000 tonnes of crude oil into the sea polluting up to 200km of coastline. The scenario assumes no loss of access to Liquefied Natural Gas (LNG) terminals or other major port infrastructure.	1	2	Dangerous Substances in Harbour Areas Regulations 1987. Merchant Shipping (Oil Pollution Preparedness, Response and Cooperation Convention) Regulations 1998. Port State Control checks coordinated in European waters All vessels navigating on the tidal Thames required PLA licence PLA Vessel Traffic Service National Contingency Plan for Marine Pollution from Shipping and Offshore Installations (2000) Oil Spill Contingency Plan Guidelines for Ports, Harbours & Oil Handling Facilities	2019 Under review

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Risk ID Rating	Sub-category Lead	Outcome Description	Likelihood	Impact	Controls in Place	Last Review Next Review
<b>R54</b> <b>LOW</b>	HAZMAT LFB	<b>Radiation exposure from transported, stolen or lost goods</b>  Incorrect handling of a stolen radioactive source leads to accidental exposure to radioactive material. Three deaths after a month and eight people requiring long term medical supervision. Up to 500 'worried well'.	1	1	Radioactive Substances Act 1993 High Activity Sealed Source Regulations 2005 Arrangements for safe handling and disposal of radioactive sources Radiation detectors at high risk sites Environment Agency inspections of all major sources Emergency Services specialist resources	Sept 2022 Sept 2025
<b>R61</b> <b>LOW</b>	HAZMAT UKHSA	<b>Accidental work-related (laboratory) release of a hazardous pathogen</b>  Inadvertent release of a biological agent caused by an unrelated work activity (e.g. Legionella release due to improperly maintained building environmental control systems) that causes up to 7 fatalities and up to 500 people requiring hospital admissions.	1	2	Health & Safety at Work Act etc 1974 Control of Substances Hazardous to Health Regulations 2002 The Notification of Cooling Towers and Evaporative Condenser Regulations 1992 require the notification of wet cooling towers and evaporative condensers to local authorities Management of Health & Safety at Work Regulations 1999 Reporting of Injuries Diseases and Dangerous Occurrences Regulations	Nov 2023 Sept 2026

## 5.2 Human and Animal Diseases

Risk ID Rating	Lead	Outcome Description	Likelihood	Impact	Controls in Place	Last Review Next Review
<b>R78</b> <b>VERY HIGH</b>	UKHSA	<b>Pandemic</b> An unmitigated respiratory pandemic with an unassumed transmission route and a high attack rate, with 4% of symptomatic infections requiring hospital care and a case fatality ratio of 2.5%. From start to finish the emergency stage of the pandemic in the UK will last at least 9 months and potentially significantly longer. Approximately 1.34 million people requiring hospital treatment, possibly resulting in up to 840,000 deaths.	4	5	Public Health (Infectious Disease) Regulations UKHSA Communicable Disease Outbreak Management Guidance (2023) Health and Social Care Act 2012 Health and Care Act 2022 Specific NHS capacity and response planning Comprehensive surveillance systems London Pandemic Response Framework	Nov 2023 Sept 2024
<b>R79</b> <b>VERY HIGH</b>	UKHSA	<b>Outbreak of an Emerging infectious disease</b> Based upon the experience of the outbreak of SARS and more recently, MERS and Ebola, the worst case likely impact of such an outbreak originating outside the UK would be cases occurring amongst returning travellers and their families and close contacts, with spread to health care workers within a hospital setting. However, it is unlikely to present a wider threat to the UK through sustained spread.	4	4	NHS Vaccination Programme Specialist capability and capacity planning in NHS trusts Comprehensive surveillance systems and response arrangements	Nov 2023 Sept 2024
<b>R80</b> <b>MEDIUM</b>	Local Authorities (SE)	<b>Major Outbreak of animal disease</b> Disease introduced into a predominantly sheep area and infected animals sold at market or moved to other premises before disease is detected resulting in widely dispersed multiple outbreaks. Assessment based on the need to cull and dispose up to 4 million animals with up to 900 infected premises across UK. Movement of all susceptible livestock prohibited unless licensed. Economic and reputational losses to the agriculture and food chain industry. Loss of disease-free status resulting in EU and third country import bans on livestock and livestock products from susceptible animals.	2	2	Animal Health Act 1981 Animal Health Act 2002 Other secondary legislation and EU directives National disease control strategies	Sept 2022 Sept 2024

## 5.3 Societal Risks

Risk ID Rating	Sub-category Lead	Outcome Description	Likelihood	Impact	Controls in place	Last Review Next review
<b>R82</b> <b>HIGH</b>	Humanitarian MPS	<b>Public Disorder</b> Large scale public disorder at site(s) in a single city, or in multiple cities, occurring concurrently over several days.	4	3	Specific riot and public order legislation Riot Compensation Act 2016 Public Order Act 1986 Police community tension monitoring processes Police community engagement teams Advice and guidance from police regarding legitimate protest from event planners	Sept 2023 Sept 2024
<b>R83</b> <b>MEDIUM</b>	Industrial Action TfL	<b>Industrial action - public transport</b> Strike action by key rail or London Underground staff (e.g. signallers) resulting in the total shutdown of very significant amounts of the national rail network or about ¾ of the London Underground network. In both cases severe disruption could last for a week as part of a three-month campaign.	3	2	Health and Safety at Work Act 1974. Employment Act 1980. Employment Act 1988. Public Order Act 1986. Trade Union and Labour Relations (Consolidation) Act 1992. Anti-Social Behaviour Act 2003. Organisational Business Continuity Arrangements	Sept 2023 Sept 2025
<b>R84</b> <b>MEDIUM</b>	Industrial Action LFB	<b>Industrial action - firefighters</b> A national fire strike in England for a continuous eight-day period with loss of life directly attributable to a weakened response by individual fire and rescue services, and reputational impact on government.	2	2	Police Act (1996) RCN Code on Industrial Action Alternative emergency cover protocols for the Fire Brigade Organisational Business Continuity Arrangements Recall to active duty	Sept 2022 Sept 2024

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Risk ID Rating	Sub-category Lead	Outcome Description	Likelihood	Impact	Controls in place	Last Review Next review
<b>R85</b> <b>MEDIUM</b>	Industrial Action MoJ	<b>Industrial action - Prison staff</b> Industrial action by operational prison staff, leading to a shortfall of staff available for duty for more than 24 hours.	4	2	Criminal Justice and Public Order Act (1994)	Nov 2020 Sept 2024
<b>R86</b> <b>MEDIUM</b>	Industrial Action Local Authorities	<b>Industrial action - fuel supply</b> Actual or threatened significant disruption to the distribution of fuel by road due to any cause, including industrial action by fuel tanker drivers. Retail filling stations, depending on the extent of the disruption and their locations and assuming no panic-buying, would likely run out of fuel within 4-5 days.	2	2	Legal requirements re: conduct of industrial disputes. Stocks of contingency fuel to varying degrees National Emergency Plan for Fuel	Sept 2021 Sept 2024
<b>R87</b> <b>MEDIUM</b>	Humanitarian Local Authorities	<b>Reception and integration of British Nationals arriving from overseas</b> Influx of destitute/vulnerable British Nationals who are not normally resident in the UK and cannot be accommodated by family/friends. Up to 10,000 BNs not normally resident in the UK returning to the UK within roughly a month following conventional war, widespread civil unrest, or sustained terrorism campaign against British and other Western nationals. Around 2% of returnees require statutory support including housing, health services and access to welfare.	4	2	Local authority: Standard social care and emergency housing arrangements. Existing mutual aid agreements in place across London. Heathrow Travel Care – a team of social workers. Other organisations: Full time officer located at Heathrow (alongside Heathrow TravelCare) to consider the issue of repatriation at ports. Position funded by the Foreign & Commonwealth Office. Red Cross and FCO agreement on repatriation; Meet & greet returning passengers at airport, arrange onward transport, supported by the FCO	Nov 2022 Sept 2024



## 5.4 Natural Hazards

Risk ID Rating	Lead	Outcome Description	Likelihood	Impact	Controls in Place	Last Review Next Review
<b>R71</b> <b>VERY HIGH</b>	Met Office	<b>Severe Space Weather</b> Disruption to the electricity grid, resulting in two rural/coastal sub-station disconnections each effecting communities of approx. 100,000 people, with loss of power for 1 month or more and rota-disconnections for a further 1 month or more. Voltage instability may also result in local blackouts, most likely in urban areas lasting a few hours.	4	4	Electricity Industry monitoring and analysis of GIC Space Weather is assessed as part of the Daily Hazard Assessment National Grid design standards and response arrangements Alternative positioning, navigation, and timing signal systems Forecasting through Met Office Space Weather Operations Centre	Sept 2023 Sept 2024
<b>R73</b> <b>VERY HIGH</b>	UKHSA	<b>High Temperatures and Heatwaves</b> Daily maximum temperatures greater than 32C and minimum temperatures greater than 15C over most of a region for around 2 weeks including at least 5 consecutive days. Up to 1,000 fatalities and 5,000 casualties, mainly amongst the elderly. There could be disruption to power supply, telecommunications, and transport infrastructure within the 2 weeks.	3	4	Health & Safety at Work Act 1974 Public Health Act UKHSA Adverse Weather and Health Plan Long term planning for local authorities, CCGs, and NHS Climate Change Adaption Strategy for London Heat Health Alerts	Nov 2023 Sept 2024
<b>R75b</b> <b>VERY HIGH</b>	EA	<b>Fluvial Flooding</b> Successive bands of frontal rainfall saturate river catchments (soil moisture deficit is at zero) and fill river channels to full capacity. High intensity heavy rainfall causes fluvial rivers in London (tributaries to the Thames) to exceed channel capacity. Flooding happens very quickly with little warning and time for evacuations.	3	4	See R75c	Sept 2023 Sept 2024

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Risk ID Rating	Lead	Outcome Description	Likelihood	Impact	Controls in Place	Last Review Next Review
<b>R75c</b> <b>VERY HIGH</b>	EA	<b>Surface Water Flooding</b> Surface water flooding in a large metropolitan area caused by a warm unstable atmosphere, most likely to occur in summer due to the warmer atmosphere having a greater water holding capacity, causes a pattern of convective rainfall events.	3	4	Flood and Water Management Act 2010 The Flood Risk Regulations 2009 Land Drainage Act 1991 Water Resources Act 1991 FFC – Flood Guidance Statements New building developments controlled through planning guidelines Multi Agency Flood Plans London Strategic Flood Framework National Flood Emergency Plan Environment Agency Floodline Met Office Forecasts and National Severe Weather Warning Service	Sept 2023 Sept 2024
<b>R76</b> <b>VERY HIGH</b>	EA	<b>Drought</b> Following three consecutive and unprecedented dry winters London is in a severe drought (level 4) situation. Emergency drought orders are in place with millions of properties with severe water supply restrictions and low water pressure (impacting supply to properties at high levels and tower blocks). Increase of illnesses due to reduced use of water impacting on hygiene levels, increased casualties and potentially fatalities. Mental wellbeing impacts communities and public outrage leads to some disorder issues.	2	5	Water Resources Act 1991 DEFRA: Planning for Major Water and Wastewater Incidents in England and Wales Drought Plan direction document Individual Water Company Drought Plans London Drought Framework	Sept 2023 Sept 2024

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Risk ID Rating	Lead	Outcome Description	Likelihood	Impact	Controls in Place	Last Review Next Review
<b>L19</b> <b>HIGH</b>	EA	<b>Groundwater Flooding</b> Following unprecedented amounts of extended above average rainfall throughout 3 winter months groundwater levels are exceptionally high throughout London. The main areas of concern are in the South East of London where the geology is predominately chalk.	3	3	Flood and Water Management Act 2010 The Flood Risk Regulations 2009 Land Drainage Act 1991 Water Resources Act 1991 Environment Agency Floodline FFC – Flood Guidance Statements New building developments controlled through planning guidelines Multi Agency Flood Plans London Strategic Flood Framework National flood emergency plan	Sept 2023 Sept 2024
<b>R67</b> <b>HIGH</b>	Local Authorities	<b>Volcanic eruption</b> Volcanic ash incursions for up to 25 days (assumed not to be sulphur-rich) resulting in sporadic and temporary closures of significant parts of UK airspace for up to a total of 15 days (possibly non-consecutive) during a three-month eruption period	4	3	Met Office Volcanic Ash Advisory Centre Forecasting CAA Volcanic Ash Safety Regime Airline response plans	Sept 2022 Sept 2024

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Risk ID Rating	Lead	Outcome Description	Likelihood	Impact	Controls in Place	Last Review Next Review
<b>R72 HIGH</b>	Met Office	<b>Storms</b> Storm force winds affect multiple regions for at least 6 hours during a working day. Most inland and lowland areas experience mean speeds greater than 55mph and gusts faster than 85mph.	4	3	Met Office Hazard Manager service Met Office Forecasts and National Severe Weather Warning Service Warning & Informing London Adverse Weather Framework Category 1 & 2 responders emergency response plans Highways Agency response plans. TfL adverse weather plans LFB USAR and Water Rescue capabilities. LAS HART	Sept 2023 Sept 2024
<b>R74 HIGH</b>	Met Office	<b>Low temperatures and snow</b> Low temperatures and snow (falling and lying) over substantial areas of low-lying land, (below 300m) for at least one week. After an initial fall of snow, there is further snowfall on and off for at least 7 days. Most lowland areas experience some snow fall greater than 10cm at a time, with overall snow depth greater than 30cm. This would coincide with a period of at least 7 consecutive days with a daily mean temperature below -3C.	3	3	Met Office Hazard Manager service Warning & Informing London Adverse Weather Framework Category 1 & 2 responders' emergency response, BCM and severe weather plans. Highways Agency, TFL and local authorities' winter road maintenance plans. Met Office forecasts & National Severe Weather Warning Service TfL snow desk Op GRIDLOCK to support motorists stranded on M25.	Sept 2023 Sept 2024

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Risk ID Rating	Lead	Outcome Description	Likelihood	Impact	Controls in Place	Last Review Next Review
<b>R75a</b> <b>HIGH</b>	EA	<b>Coastal Flooding</b> Localised tidal flooding resulting from sudden breach of a section of the Thames tidal wall or embankment caused by a vehicle collision or construction incident or a failure of a tidal flood gate coinciding with high tides on the river Thames.	3	3	See L19	Nov 2023 Sept 2024
<b>R77</b> <b>HIGH</b>	EA	<b>Poor Air Quality</b> A 30-day period of elevated levels of either ozone or PM2.5 causing increases in death rates among vulnerable populations due to poor air exacerbating respiratory and cardio-vascular conditions.	3	3	Air Quality Standards Regulations 2010 European directive on ambient air quality and cleaner air for Europe (2008/50/EC) The UK Air Quality Strategy Environmental Permitting Regulations 2010 Clean Air Act & Environmental Protection Act Local authority air quality management areas and action plans- London Mayor's Air Quality Strategy which encompasses Ultra Low Emissions Zones and Low Emission Neighbourhoods AirTEXT warning system Local Air Quality Action Plans Local Air Quality Monitoring Network GLA Air Quality Action Plan	Sept 2023 Sept 2024
<b>L54c</b> <b>MEDIUM</b>	LFB	<b>Fires involving landfill and waste processing sites</b> Major fire lasting several days with significant environmental and local impacts.	5	2	See R65	Sept 2022 Sept 2024

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Risk ID Rating	Lead	Outcome Description	Likelihood	Impact	Controls in Place	Last Review Next Review
<b>L54e</b> <b>MEDIUM</b>	LFB	<b>Major fire in care homes and hospitals</b> Fire causing up to 20 fatalities of vulnerable people in residence causing the closure of an entire hospital or care home.	3	2	See R65	Sept 2022 Sept 2024
<b>R66</b> <b>MEDIUM</b>	LFB	<b>Wildfire</b> A major wildfire spreading over an area of over 100 hectares at the urban-rural interface. Significant environmental impacts and risks to residential property and essential services.	4	2	See R65 London Fire Brigade borough specific rural strategies Specialist firefighting equipment and resources	Nov 2023 Sept 2025
<b>HL21</b> <b>LOW</b>	LFB	<b>Land Movement</b> Roads and access routes impassable for a time. Emergency access into/out of large populated areas difficult or impossible; severe congestion over wide geographical area. Loss of power and other essential services over wide geographical area. Potential for trapped or missing people either in landslides itself and/or in collapsed structures.	3	1	Land use planning restrictions Building Control regulations enforced by Local Authorities. Construction, renovation, maintenance, and demolition standards	Nov 2023 Sept 2026
<b>R68</b> <b>LOW</b>	Local Authorities	<b>Earthquake</b> An earthquake that results in the ground shaking with an intensity of six on the European Macroseismic Scale (EMS), this is classed as 'strong'. Many houses and buildings suffer slight non-structural damage like hair-line cracks and falling of small pieces of plaster.	1	1	London and national generic response plans <ul style="list-style-type: none"> <li>• Site clearance</li> <li>• Evacuation &amp; Shelter</li> <li>• Recovery</li> </ul> Mutual aid arrangements Specialist fire and rescue assets	Sept 2023 Sept 2025

## 5.5 Hostile State Activity

Risk ID Rating	Lead	Outcome Description	Likelihood	Impact	Controls in Place	Last Review Next Review
<b>R89</b> <b>VERY HIGH</b>	LAS	<b>High-Altitude Electromagnetic Pulse (HEMP)</b>	2	5	Contingency planning for a large-scale incident of this type would remain with central government	Sept 2023 Under review
<b>R95</b> <b>VERY HIGH</b>	MPS	<b>Nuclear attack by a state on the UK mainland or UK overseas interests</b> A nuclear attack by a hostile state actor generating a high number of casualties and extensive, long lasting damage to the area surrounding the strike location. The UK's ability to deliver basic services and governance is degraded for months or years, depending on the severity of the attack.	2	5	Contingency planning for a large-scale incident of this type would remain with central government	Sept 2023 Sept 2024
<b>R32</b> <b>LOW</b>	Local Authorities	<b>Major interference in UK democratic process</b> A cyber-attack conducted by a hostile state actor on a UK Electoral system during an election period. The attack could cause disruption to the electoral processes, resulting in data loss or manipulation and impact the result, or public confidence in the result.	3	1	UK Electoral processes largely not reliant on computer systems vulnerable to this type of attack	Nov 2023 Sept 2026

## 5.6 Threats

In this public version of the London Risk Register, threats and cyber risks are grouped and summarised by target. Further detail on the types of threats is available in the [National Risk Register](#).

Threats are assessed nationally so reassessment dates are not included.

Risk ID Rating	Outcome Description	Likelihood	Impact	Controls in Place
<b>T1</b> MEDIUM	<p><b>Attacks on Publicly Accessible Locations</b></p> <p>There has been an increase in the frequency of terrorist attacks in the UK from 2017. Nearly all attacks have occurred in publicly accessible locations.</p> <p>A defining feature of such attacks is the targeting of people. This may be random or aimed at a specific group. Impacts may include fatalities and physical and/or psychological casualties, significant damage to infrastructure and other property, increased demands on and disruption to essential services.</p>	5	2	<p>Continued warning and informing of crowded places through heightened security alerts and Physical security measures where appropriate</p> <p>Emergency services response plans &amp; specialist resources</p> <p>Work of Counter Terrorism Security Advisors to raise awareness and provide training</p> <p>Op Servator hostile reconnaissance disruption operations</p> <p>Targeted comms from counter terrorism police to stakeholders</p> <p>Public awareness campaigns providing advice to the public including digital tools and e-learning</p>
<b>T2</b> HIGH	<p><b>Attacks on Infrastructure</b></p> <p>Critical National Infrastructure are the facilities, systems, sites, information, people, networks, and processes that keep the UK running and provide the essential services we all rely on. This includes electricity and water services and telecommunications.</p> <p>Attacks could be carried out with a variety of methods, including explosives or cyber attacks. Consequences of attacks of this nature could include disruption to essential services, possible evacuation of residents or employees, economic impacts.</p>	4	3	<p>UK Government's counter-terrorism Strategy (CONTEST) (summarised above)</p> <p>Business continuity plans for loss of essential services helps to minimise disruption to users.</p> <p>Well established programme of work to protect infrastructure from terrorism including protective security advice from Centre for the Protection of National Infrastructure and local Police services</p> <p>National Cyber Security Centre advises government and industry on how to secure cyber infrastructure and to respond to incidents.</p> <p>Consequence based planning by the authorities ensuring that responses to a variety of emergencies are already planned for.</p>



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<b>T3 HIGH</b>	<b>Attacks on Transport</b> In the UK, conventional terrorist attacks on land and air-based transport are more likely than against maritime transport. Physical attacks could take a variety of forms including explosives, noxious substances or attackers wielding blades. Consequences of an attack on a transport system could include fatalities and physical and/or psychological casualties, disruption to the transport system and negative impacts to the national economy.	4	3	Regulation and monitoring of services by DfT requiring certain organisations to deliver a range of security measures. DfT also provides advice and best practise to other sectors. “See it. Say it. Sorted.” campaign. BTP work with industry and DfT on security and provide tailored policing of the railway network. Contingency plans developed by operators in conjunction with responders Op Servator hostile reconnaissance disruption operations run by PSO & BTP
<b>T4 MEDIUM</b>	<b>Cyber attacks</b> Cyber criminals engage in criminal activity to exploit weaknesses in online systems, usually for financial gain. As well as using technology to commit a crime (such as hacking to steal data), offenders can also increase the scale and reach of a crime (such as cyber-enabled non-fiscal fraud). States and state-sponsored threats tend to be politically motivated and may attempt to access and cause disruption to strategic systems across government and other key sectors.	3	2	National Cyber Security Strategy sets out the government response to ensuring that government, CNI, business and citizens are as resilient as possible to cyber threats. The National Cyber Security Centre, part of GCHQ, supports the most critical organisations in the UK to improve their cyber resilience. The NCSC also responds to cyber incidents to minimise harm to the UK, help with recovery and learn lessons for the future. Additional outreach to businesses and public regarding cyber threats and security Centre for Protection of National Infrastructure providing security and cyber security advice
<b>T5 MEDIUM</b>	<b>Smaller Scale CBRN Attacks</b> Malicious actors remain interested in chemical, biological, radiological, and nuclear (CBRN) attack methods. In the UK, it is assessed that terrorists are more likely to use knives, vehicles or improvised explosive devices, but the threats of CBRN attacks cannot be ruled out. CBRN attacks have the potential to kill, injure and cause wide-ranging harm. Depending on the method used there is potential for catastrophic blast damage, widespread infection, or contamination of people, the environment, buildings, water supplies and food. Attacks could range from a small target incident, to large catastrophic events at the highest end of the	4	2	Improving methods to detect and monitor CBRN materials, including through the border. Regulating access to hazardous materials and their precursors Improving and maintaining capabilities to enable emergency responders to respond effectively, rapidly, and safely Provision of guidance in incidents and increasing public access to information on what to do during general and hazardous materials emergencies Local and organisational CBRN response plans Well-developed specialist response capabilities Access to medical countermeasures and adaptability of other consequence-based plans to respond to unconventional attacks Decontamination process of people and place regularly trained and tested.

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	spectrum, such as the widespread dispersal of a biological agent or the detonation of an improvised nuclear device.			Continuity plans to ensure effective civil government can continue throughout and after an incident.
<b>T6</b> HIGH	<b>Medium Scale CBRN Attacks</b> See T5 outcome description	4	3	See T5 Controls in Place
<b>T7</b> VERY HIGH	<b>Larger Scale CBRN Attacks</b> See T5 outcome description A larger-scale CBRN attack has never happened in the UK but would be more challenging to respond to than other malicious attacks, due to the potential health impacts and widespread environmental contamination. CBRN events can also present responders and those affected with significant levels of uncertainty about what has happened, and the scientific evidence may evolve as the incident unfolds. This leads to widespread psychological impacts including anxiety.	3	5	See T5 Controls in place

## **Appendix 1 - The 6 Stage Risk Assessment Process**

### **Contextualisation**

A range of factors influence the assessment of both likelihood and impact of risks. Demographics, transportation, and environmental factors all exert an influence on how a risk would manifest in a particular area. Each of the 33 Borough Resilience Forums in London use this local context to develop their own risk assessments.

### **Hazard Identification and allocation for assessment**

London Risk Advisory Group identifies the threats and hazards that, in their view, could give rise to an emergency within London in the next 2 years.

Lead risk assessors agreed by the group then undertake to assess the likelihood of each risk occurring, and to make a judgement of how impactful the RWCS of that risk would be. Risks included in the London Risk Register are subject to a scheduled review programme to ensure that each risk is revisited and updated periodically.

### **Risk analysis**

Drawing on guidance from Government, other research and local knowledge, lead assessors consider the likelihood of the risk over the next five-year period. Individual Risk Assessments are then provided to the London Risk Advisory Group for discussion and approval.

### **Risk evaluation**

Individual Risk Assessments are confirmed, and summary information collated into the London Risk Register.

### **Risk treatment**

Gaps in capability against the reasonable worst-case scenario is assessed periodically by the London Resilience Forum, where additional risk management options are agreed as necessary.

### **Monitoring and Review**

Risk assessment is not a static process and is subject to constant review. At a minimum, each Individual Risk Assessment is formally reviewed on a 2-year cycle. An annual update of the London Risk Register is published in the spring.

## Appendix 2 – Likelihood and Impact Scoring Scales

Further detail on the scoring measures is provided in Annex 4D of “Emergency Preparedness” (HM Government, 2005) or Local Risk Management Guidance (available via Resilience Direct).

### Likelihood scale

Score	Likelihood Descriptor	Probability of the Reasonable Worst-Case Scenario occurring within a 12-month period
1	Low	Less than 0.2% chance of occurring per year
2	Medium Low	Between 0.2% and 1% chance of occurring per year
3	Medium	Between 1% and 5% chance of occurring per year
4	Medium High	Between 5% and 25% chance of occurring per year
5	High	More than 25% chance of occurring per year

### Impacts Categories

Each impact category is split into several “indicators” which are scored out of five. Indicator scores are amalgamated to reach a score for that category, and the category scores are amalgamated to reach an overall impact score.

Impact Category	Explanation
Human Welfare	Includes numbers of fatalities and casualties resulting from the RWCS, needs for mass evacuation, and short- and long-term accommodation.
Behavioural Impacts	Psychological impacts of the risk, including how people’s perception and behaviour might change because of the risk.
Economic	An approximate net economic cost, including both direct costs (e.g. loss of goods, buildings, infrastructure) and indirect costs (e.g. loss of business, increased demand for public services).
Essential Services	How the RWCS might impact the emergency services, critical infrastructure, transport, education and other service and infrastructure providers
Environment	Encompassing long-term impact of contamination or pollution of land, water or air with harmful biological / chemical / radioactive matter or oil, flooding, or disruption or destruction of plant or animal life.
Security	Includes impacts to law enforcement and intelligence services, and disruptions to criminal justice and border security.

## Appendix 3 – Overall Risk Rating Definitions

Definitions of Nationally Approved Risk Ratings	
Very High (VH)	These are classed as primary or critical risks requiring immediate attention. They may have a high or medium likelihood of occurrence, but their potential consequences are such that they must be treated as a high priority. This may mean that strategies should be developed to reduce or eliminate the risks, but also that mitigation in the form of (multi-agency) planning, exercising and training for these hazards should be put in place and the risk monitored on a regular frequency. Consideration should be given to planning being specific to the risk rather than generic.
High (H)	These risks are classed as significant. They may have a high or low likelihood of occurrence, but their potential consequences are sufficiently serious to warrant appropriate consideration after those risks classed as 'very high'. Consideration should be given to the development of strategies to reduce or eliminate the risks, but also that mitigation in the form of at least (multi-agency) generic planning, exercising and training should be put in place and monitored on a regular frequency.
Medium (M)	These risks are less significant but may cause upset and inconvenience in the short term. These risks should be monitored to ensure that they are being appropriately managed, and consideration given to their being managed under generic emergency planning arrangements.
Low (L)	These risks are both unlikely to occur and not significant in their impact. They should be managed using normal or generic planning arrangements and require minimal monitoring and control unless subsequent risk assessments show a substantial change, prompting a move to another risk category.
<i>Based on the model risk rating matrix published in Annex 4F of "Emergency Preparedness" (HM Government, 2005)</i>	



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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.