

# Sutton Borough Risk Register

Sutton Borough Resilience Forum

Version 3.5

June 2024



## Document History

| Review Date    | Version | Summary of Changes  |
|----------------|---------|---|
|                | 1.0     | First draft   |
| May 2011       | 1.1     | Revision of risk scores   |
| May 2013       | 1.2     | Revision of risk scores   |
| June 2015      | 2.1     | Reformat and revision of content and risk scores  |
| May 2016       | 2.2     | Revision of risk scores and amendment to risk matrix (page 8)   |
| June 2016      | 2.3     | Revision of risk scores and amendment to risk matrix (page 8)   |
| November 2016  | 2.4     | Revision of risk score and outcome description (page 25)  |
| February 2017  | 2.5     | Removal of H46.   |
| April 2017     | 2.6     | Revision of risk scores and addition of H22   |
| July 2017      | 2.7     | Revision of risk scores for HL22 and HL21, and removal of H22a  |
| December 2017  | 2.8     | Rewording of H37  |
| January 2018   | 2.9     | Full risk register review to align with London Risk Register.   |
| March 2018     | 2.10    | Revision of risk scores   |
| July 2018      | 2.11    | Revision of risk scores and outcome descriptions for H16 and HL11, and addition of H60  |
| October 2018   | 2.12    | Revision of risk scores following London Risk Advisory Group.   |
| January 2019   | 2.13    | Addition of HL51, removal of H33 and full review to align with updated London Risk Register.  |
| May 2019       | 3.0     | Addition of H4, H5, HL3, H44 and H46 to risk register, added HL34, HL37 and H15 to exclusions table, removed risks from previous National risk register from exclusion table, Added list of new risks to be reviewed over the next year HL51, H13, H32, H59, H62, H63 and HL9b. Updated introduction and background and Likelihood and impact scoring explanation. Revision of risk scores. Combined H58 and HL33, HL7 and HL25, HL14, HL12 and H60 |
| July 2019      | 3.1     | Addition of X7 following Office for Securities and Counter Terrorism guidance (LA process for CT risks).  |
| September 2019 | 3.2     | Review risk scores following the London risk advisory group meetings 07/19 and 09/19, HL30, HL3, H11, H14, HL21, H23, H24, H38 and H57, removal of HL4, Combine HL26a and HL26b   |
| June 2021      | 3.3     | Update following publication of the London Risk Register v10.   |
| August 2021    | 3.4     | Finalised changes of Sutton BRR   |
| April 2024     | 3.5     | Update following publication of the London Risk Register v13  |
| June 2024      | 3.5     | Following circulation and review from BRF Partners, addition to the R62 from the Environment Agency to include localised information on Russell Hill Reservoir. Document signed off by BRF.   |

The Sutton Borough Risk Register is collectively owned by the Category 1 Responders (as defined by Schedule 1 to the Civil Contingencies Act 2004) within the Sutton Borough Resilience Forum. This Borough Risk Register is maintained in accordance with Regulation 15(1) of The Civil Contingencies Act 2004 (Contingency Planning) Regulations 2005.

## Contents

|  |    |
|--|----|
| Document History                                 | 1  |
| 1. Sutton Borough Resilience Forum Membership    | 3  |
| 2. Introduction and Background                   | 4  |
| 3. High Level Summary                            | 5  |
| 4. Contextualisation Statement                   | 6  |
| 5. Borough Risk Register                         | 7  |
| 6. Risks Not Applicable and Removed              | 23 |
| Appendix 1: Likelihood and Impact Scoring Scales | 24 |
| Appendix 2: Risk Rating Matrix                   | 25 |

## 1. Sutton Borough Resilience Forum Membership

|    | Agency   |
|----|--|
|    | <b>Category 1 Responders</b>   |
| 1  | Local Authority – (London Borough of Sutton)                         |
| 2  | Metropolitan Police Service  |
| 3  | British Transport Police   |
| 4  | London Fire Brigade  |
| 5  | London Resilience Group  |
| 6  | London Ambulance Service   |
| 7  | NHS England  |
| 8  | The Environment Agency   |
| 9  | UK Health Security Agency  |
|    | <b>Category 2 Responders</b>   |
| 10 | Sutton Clinical Commissioning Group                                  |
| 11 | Utility Companies  |
| 12 | Transport Companies  |
|    | <b>Existing Non-Category 1 or 2 Resilience Forum Representatives</b> |
| 13 | Military Liaison   |
| 14 | Voluntary Sector   |
| 15 | Faith Sector   |

## 2. Introduction and Background

The Civil Contingencies Act 2004 ('The Act') places a legal duty on Category 1 responders to produce a Borough Risk Register. Section 2, sub-section 1 of the Act requires Category 1 responders '*... from time to time assess the risk of an emergency occurring ...*' and '*... from time to time assess the risk of an emergency making it necessary or expedient for the person or body to perform any of its functions*'. This should be linked to individual Category 1 responders' processes of adding to (or modifying) their own individual plans.

For the purposes of Part 1 of the Civil Contingencies Act 2004 (c.36), 'emergency' is defined by s.1(1) of the Act and means:

- A. An event or situation which threatens serious damage to human welfare in a place in the United Kingdom;
- B. An event or situation which threatens serious damage to the environment of a place in the United Kingdom, or
- C. War, or terrorism, which threatens serious damage to the security of the United Kingdom.

It must also meet either of the following criteria:

- The threat or hazard is of a sufficient scale and nature that it is likely to seriously obstruct a Category 1 responder in the performance of its functions; and/or
- The threat or hazard requires the Category 1 responder to exercise its functions and undertake a special mobilisation (s.2(2) of the Civil Contingencies Act 2004).

In the event of an emergency, the Act requires Category 1 responders to activate an emergency plan. Before the activation of such a plan is necessary, two tests should be carried out:

- A. Where the emergency would be likely to seriously obstruct the responding organisations' abilities to perform their functions; and
- B. Where the Category 1 responder considers it necessary or desirable to act to prevent, reduce, control, or mitigate the emergency's effects, or otherwise take action and would be unable to act without changing the deployment of its resources or acquiring additional resources.

This clearly implies that only serious emergencies need to form part of the risk assessment process. The risk assessment process required need not cover large pre-planned events, as a risk assessment should form part of the planning stage.

The Civil Contingencies Act 2004 (Contingency Planning) Regulations 2005 give the legal requirements in relation to risk assessment in Part 3. These regulations place a responsibility on Category 1 responders to co-operate with each other in maintaining a Borough Risk Register. Detailed guidance on the risk assessment process can be found within Chapter 4 (and its annexes) of the *Emergency Preparedness* guidance document which has been published by HM Government. Appendix 1 details the risk assessment process and it's 6 stages.

### 3. High Level Summary

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

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## 4. Contextualisation Statement

The London Borough of Sutton is part of the South West Sub Region (for Resilience Planning purposes) which comprises the London Boroughs of Sutton, Richmond, Wandsworth, Merton, Croydon and the Royal Borough of Kingston.

### **Social Factors**

According to the 2011 census, 19% of the population in Sutton are not born in the UK or Ireland. The Greater London Authority estimates that 6% of Sutton's population do not speak English at home. Both these statistics highlight a potential issue in the event of an evacuation emergency with consideration to be given around different cultures and languages present.

In terms of age according to the 2011 census, 7% of people in Sutton are over the age of 75 and 20% are under the age of 16, both these elderly and young people are more likely to be affected by an emergency and may require additional help and care. There are also 79 registered care homes within the borough and these establishments are also likely to need additional assistance in an emergency to support residents.

### **Environmental Factors**

Sutton is an outer London borough and is not heavily urbanised, containing more open spaces than its neighbouring boroughs except Surrey, which is less urbanised. Flooding has been identified as a substantial risk from the river Wandle and Pyl and Beverley Brooks.

### **Hazardous Sites**

There are no Control of Major Accident Hazard (COMAH) sites within Sutton. Potential hazards within the borough include the Royal Marsden Hospital (a specialist Cancer hospital) and The Institute of Cancer Research (ICR), which contain radioactive materials.

## 5. Borough Risk Register

(Note: **Ref ID codes:** H = National and London Risk, HL = London Risk, L = Locally applicable London Risk x = Threat. The number assigned to each risk/threat is for reference)

### 5.1 Accidents and system failures

| Risk ID Rating                  | Sub-category Lead                         | Outcome Description   | Likelihood | Impact | Controls in Place   |
|---------------------------------|---|---|------------|--------|---|
| <b>R50a</b><br><b>VERY HIGH</b> | Systems Failure<br>Utilities Sector Panel | <b>Failure of the National Electricity Transmission System (NETS)</b><br><br>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.<br>London Power Supply Disruption Plan<br>EDF Energy System Emergency Plan.<br>EDF Energy Emergency Communication Plan.<br>EDF Energy Black Start Plan.<br>Business Continuity Plans for Category 1 and 2 Responders, businesses, and other key organisations<br>London Power Supply Disruption Plan<br>Major Incident/Emergency Plans for Category 1 and 2 Responders. |
| <b>HL10</b><br><b>HIGH</b>      | Accident<br>TfL                           | <b>Local accident on motorways and major trunk roads</b><br><br>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<br>The Road Vehicle (Construction and Use) Regulations 1986<br>The Traffic Management Act 2004  |



|                      |                 |  |   |   |  |
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| <b>L54a<br/>HIGH</b> | Fire<br>LFB     | <b>Fires in purpose built high-rise flats</b><br><br>Major fire in block of flats containing 80 compartments. Potential for up to 100 fatalities and 200 casualties.   | 4 | 3 | See R65  |
| <b>L54b<br/>HIGH</b> | Fire<br>LFB     | <b>Fires in large public and commercial buildings</b><br><br>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  |
| <b>R40<br/>HIGH</b>  | Accident<br>TfL | <b>Rail Accident</b><br><br>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<br>Railways (Access and Management) Regulations 2005<br>Railways (Accident Investigation and Reporting) Regulations 2005<br>Railways (Licensing of Railway Undertakings) Regulations 2005<br>Railways Act 2005<br>The Health and Safety (Enforcing Authority for Railways and Other Guided Transport Systems) Regulations 2006<br>The Railway Safety Levy Regulations 2006<br>The Railways Act 1993<br>Transport Act 2000<br>Health and Safety at Work etc. Act 1974<br>The Railway (Safety Case) Regulations 2000 |

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| <b>R44</b><br><b>HIGH</b> | HAZMAT<br>LFB         | <p><b>Accident involving high consequence dangerous goods</b></p> <p>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.</p> | 3 | 3 | Health & Safety at Work etc Act 1974<br>Control of Substances Hazardous to Health Regulations 2002<br>Management of Health & Safety at Work Regulations 1999<br>Reporting of Injuries Diseases and Dangerous Occurrences Regulations  |
| <b>R46</b><br><b>HIGH</b> | Accident<br>MPS       | <p><b>Malicious Drone Incident</b></p> <p>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.</p>  | 3 | 3 | Security sector and aviation industry reminders<br>Security systems to monitor and control access to restricted airspace<br>Police contingency plans and Service level agreements at London Heathrow and London City<br>Civil Contingencies Act (2004)<br>Civil Aviation Act (2012) |
| <b>R48</b><br><b>HIGH</b> | System Failure<br>PLA | <p><b>Loss of Positioning, Navigation and Timing (PNT) Services</b></p> <p>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</p>   | 2 | 4 | Contingency planning for a large-scale incident of this type would remain with central government   |

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|                      |   | outage last for at least 30 days and restoration of full capability takes several more weeks.   |   |   |  |
| <b>R49<br/>HIGH</b>  | Systems Failure<br>LFB                        | <b>Simultaneous loss of all fixed and mobile forms of communication</b><br><br>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<br><br>Telephone provider demand and network capacity management strategies<br><br>National Emergency Alert for Telecoms  |
| <b>R51<br/>HIGH</b>  | Systems Failure<br><br>Utilities Sector Panel | <b>Failure of Gas Supply Infrastructure</b><br><br>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<br><br>HM Government Downstream Oil Emergency Response Plan (DOERP)<br><br>Local Authority Fuel Shortage Response Plan and local DOERP<br><br>UK Power Networks System Emergency Plan |
| <b>R52<br/>HIGH</b>  | Accident<br>LFB                               | <b>Civil Nuclear Accident</b><br><br>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  |
| <b>R55b<br/>HIGH</b> | Systems Failure<br><br>Business Sector Panel  | <b>Technological failure at a UK critical financial market infrastructure</b><br><br>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 | 5 | 3 | Authorities Response framework –<br>Financial Conduct Authority  |

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|                               |                               |   |   |   |  |
|-------------------------------|-------------------------------|---|---|---|--|
|                               |                               | transactions, which might include interbank transactions, central securities depositories, payment systems and central counterparties.  |   |   |  |
| <b>HL105</b><br><b>MEDIUM</b> | Accident<br>Local Authorities | <b>Complex built environments</b><br>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.<br>Management of Health & Safety at Work Regulations 1999.<br>Fire and Rescue Services Act 2004 & guidance pursuant to the Regulatory Reform (Fire Safety) Order 2005.<br>Safety at Sports Grounds Act 1975 and Fire Safety and Safety of Places of Sport Act 1987<br>Local building safety systems and practices<br>Safety Advisory Groups in place at major sports grounds |
| <b>HL22</b><br><b>MEDIUM</b>  | Accident<br>Local Authorities | <b>Building Collapse</b><br>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<br>Construction, renovation, maintenance and demolition standards and enforcement<br>Emergency Services and other responder's specialist resources  |
| <b>HL23</b><br><b>MEDIUM</b>  | Accident<br>Local Authorities | <b>Bridge Collapse</b><br>Roads, access routes and transport infrastructure impassable for considerable length of time. Severe congestion over wide   | 1 | 3 | Building Control regulations enforced by Local Authorities Regular inspections under the Highways Act 1980<br>Height and weight restrictions and   |

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|------------------------|--|---|---|---|---|
|                        |  | geographical area. Emergency access into/out of large populated areas severely restricted. Potential for trapped or missing people.   |   |   | signs reduce the likelihood of an incident  |
| <b>L66<br/>MEDIUM</b>  | HAZMAT<br>LFB                                  | <b>Radioactive incident caused by mishandling of radioactive material</b><br><br>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)<br><br>Scientific Advice to Government in Emergencies (SAGE) Radiation Protection Advisors |
| <b>L71a<br/>MEDIUM</b> | Accident<br>LFB                                | <b>Large aircraft incident in proximity to airport</b><br><br>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   |
| <b>L71b<br/>MEDIUM</b> | Accident<br>LFB                                | <b>Small aircraft incident in proximity to airport</b><br><br>Small aircraft incident variation of L71a. Under 20 people directly involved in incident.   | 3 | 2 | See R45   |
| <b>R36<br/>MEDIUM</b>  | Failure of governance<br><br>Local Authorities | <b>Major Social Care Provider Failure</b><br><br>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<br><br>Local authority service continuity plans   |

|                              |   |   |   |   |   |
|------------------------------|---|---|---|---|---|
| <b>R37a</b><br><b>MEDIUM</b> | Governance<br>Failure<br><br>Local Authority              | <b>Insolvency of Supplier of Critical Services to public sector</b><br><br>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<br><br>FRC and other regulators of financial services  |
| <b>R37b</b><br><b>MEDIUM</b> | Failure of<br>Governance<br><br>Local<br>Authorities      | <b>Collapse of a major government contractor</b><br><br>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<br>Service continuity plans to maintain critical services  |
| <b>R39</b><br><b>MEDIUM</b>  | Failure of<br>Governance<br><br>Utilities Sector<br>Panel | <b>Failure of a supplier of CNI Chemicals</b><br><br>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<br><br>Cross-government emergency response coordinated within Cabinet Office  |
| <b>R45</b><br><b>MEDIUM</b>  | Accident<br><br>LFB                                       | <b>Aviation collision</b><br><br>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.<br><br>Access to UK airspace is heavily regulated<br><br>CAA Maintenance and Flight safety standards exceed ICAO recommendations<br><br>Airline maintenance regimes subject to CAA scrutiny and regulation.<br><br>Strict controls over London Approach. |

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|------------------------------|------------------------|--|---|---|---|
| <b>R47</b><br><b>MEDIUM</b>  | Accident<br>LAS        | <b>Disruption of space-based services</b><br><br>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   |
| <b>R50b</b><br><b>MEDIUM</b> | System Failure<br>UKPN | <b>Regional Failure of the Electricity Network</b><br><br>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.<br><br>London Power Supply Disruption Plan<br><br>UK Power Networks System Emergency Plan.<br><br>UK Power Networks Emergency Communication Plan. |
| <b>R53</b><br><b>MEDIUM</b>  | Accident<br>LFB        | <b>Radiation Release from overseas nuclear site</b><br><br>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  |

|                              |  |  |   |   |  |
|------------------------------|--|--|---|---|--|
| <b>R55a</b><br><b>MEDIUM</b> | Systems Failure<br>Business Sector Panel | <b>Technological Failure at a Systemically Important Retail Bank</b><br>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<br>Communication plans to encourage consumer awareness which can be coordinated between HM Treasury, the Bank of England, and the Financial Conduct Authority<br>Collective incident response capability under the Authorities Response Framework<br>Business Continuity Management plans for financial service sector firms and their regulators. |
| <b>R56</b><br><b>MEDIUM</b>  | Accident<br>LFB                          | <b>Accidental Fire or explosion at an onshore major hazard (COMAH) site</b><br>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.<br>The Dangerous Substances and Explosive Atmosphere Regulations 2002<br>Petroleum Regulations<br>Regulatory Reform (Fire Safety) Order 2005<br>Site Operators on-site contingency plans<br>Emergency Services specialist resources   |
| <b>R57</b><br><b>MEDIUM</b>  | HAZMAT<br>LFB                            | <b>Accidental Large Toxic Chemical Release from a COMAH site</b><br>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)<br>Regulatory Reform (Fire Safety) Order 2005<br>Emergency Services and other responder specialist resources  |
| <b>R58</b><br><b>MEDIUM</b>  | Accident<br>LFB                          | <b>Explosion at a high-pressure gas pipeline</b> <i>(risk to align with 2022 NSRA following risk review in 2024-25)</i>  | 1 | 4 | Pipeline Safety Regulations 1996<br>Regulatory and industry measures including provision of maps for excavation  |

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|                             |                                     | 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.   |   |   | Emergency Services and other responder specialist resources  |
| <b>R59</b><br><b>MEDIUM</b> | Fires & Industrial Accidents<br>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> )<br><br>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.<br><br>The Dangerous Substances and Explosive Atmosphere Regulations 2002<br><br>Petroleum Regulations<br><br>Regulatory Reform (Fire Safety) Order 2005<br><br>Site Operators on-site contingency plans<br><br>Emergency Services specialist resources |
| <b>R60</b><br><b>MEDIUM</b> | Accident<br>LFB                     | <b>Localised industrial accident involving small toxic release</b> ( <i>risk to align with 2022 NSRA following risk review in 2024- 25</i> )<br><br>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)<br><br>Regulatory Reform (Fire Safety) Order 2005   |
| <b>R62</b><br><b>MEDIUM</b> | Systems Failure<br>EA               | <b>Reservoir/Dam Collapse</b><br><br>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. To | 1 | 4 | Reservoirs Act, 1975<br><br>Water Act, 2003<br><br>Regular statutory inspections<br><br>Met Office National Severe Weather Warning Service   |

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|                             |                                 | <i>note, There have been no recorded incidents of reservoir flooding within the London Borough of Sutton. The Environment Agency Flood Risk from Reservoirs mapping available online identifies that if the Russell Hill Reservoir in London Borough of Croydon were to fail flood waters would flow northward to the east of Bandon Hill and Church Paddock and into Beddington Park, impacting areas of Wallington and Hackbridge around the route of the River Wandle in London Borough of Sutton.</i> |   |   |  |
| <b>R63</b><br><b>MEDIUM</b> | Systems Failure<br>Thames Water | <b>Water Infrastructure Failure or loss of Drinking Water</b><br>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<br>London Water Supply Disruption Framework<br>Security and Emergency Measures<br>Direction 2022 Water companies<br>mutual aid arrangements in place |
| <b>R64</b><br><b>MEDIUM</b> | HAZMAT<br>Local Authorities (W) | <b>Food Supply Contamination</b><br>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  | 2 | 3 | Food Safety Act 1990<br>Imports monitored<br>Local Authority Environmental Health Sampling UKHSA<br>monitoring and surveillance<br>Food Standards Agency plans               |

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|                             |                   | time of months.   |   |   |  |
| <b>R65</b><br><b>MEDIUM</b> | Accident<br>LFB   | <b>Major Fire</b><br>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.  | 4 | 4 | Regulatory Reform (Fire Safety) Order 2005<br>Fire Safety Approved Document B<br>Fire & Rescue Services Act 2004<br>LFB Guidance Note 29<br>LFB Operational tactical and building plans<br>LFB Urban Search & Rescue Teams (USAR)<br>Fire Service National Resilience Assets<br>LAS Hazardous Area Response Team (HART)<br>Local Authority Dangerous Structures Engineer Casualty Bureau<br>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 |
| <b>R38</b><br><b>LOW</b>    | Local Authorities | <b>Insolvency affecting fuel supply</b><br>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<br>Temporary financial assistance to some orgs to maintain fuel supplies while market responds.<br><br>Central government arrangements for emergency fuel deliveries from downstream oil industry to maintain deliveries to key sites.   |
| <b>R41</b><br><b>LOW</b>    | Accident<br>MCA   | <b>Larger Passenger Vessel Accident</b><br>Incident involving a passenger vessel in or close to UK waters leading to the ship's evacuation (or  | 3 | 1 | Port of London Act 1968 (as amended)<br>General Directions for Navigating in the Port of London Port of London Thames  |

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|                    |               | 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.   |   |   | Byelaws 2012<br>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)<br>Port Marine Safety Code<br>Port of London Authority Emergency Plans   |
| <b>R42<br/>LOW</b> | HAZMAT<br>PLA | <b>Major Maritime Pollution Incident</b><br>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.<br>Merchant Shipping (Oil Pollution Preparedness, Response and Cooperation Convention) Regulations 1998.<br>Port State Control checks coordinated in European waters<br>All vessels navigating on the tidal Thames required PLA licence<br>PLA Vessel Traffic Service<br>National Contingency Plan for Marine Pollution from Shipping and Offshore Installations (2000)<br>Oil Spill Contingency Plan Guidelines for Ports, Harbours & Oil Handling Facilities |
| <b>R54<br/>LOW</b> | HAZMAT<br>LFB | <b>Radiation exposure from transported, stolen or lost goods</b><br>Incorrect handling of a stolen radioactive source leads to accidental exposure to radioactive material. Three deaths after a   | 1 | 1 | Radioactive Substances Act 1993<br>High Activity Sealed Source Regulations 2005<br>Arrangements for safe handling and disposal of radioactive sources<br>Radiation detectors at high risk sites  |

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|  |                 | month and eight people requiring long term medical supervision. Up to 500 'worried well'.   |   |   | Environment Agency inspections of all major sources<br>Emergency Services<br>specialist resources  |
| <b>R61</b><br><b>LOW</b>               | HAZMAT<br>UKHSA | <b>Accidental work-related (laboratory) release of a hazardous pathogen</b><br><br>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<br>Control of Substances Hazardous to Health Regulations 2002<br>The Notification of Cooling Towers and Evaporative Condenser Regulations 1992 require the notification of wet cooling towers and evaporative condensers to local authorities<br>Management of Health & Safety at Work Regulations 1999<br>Reporting of Injuries Diseases and Dangerous Occurrences Regulations |
| <b>5.2 Human &amp; Animal Diseases</b> |                 |   |   |   |  |
| <b>R78</b><br><b>VERY HIGH</b>         | UKHSA           | <b>Pandemic</b><br>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<br>UKHSA Communicable Disease Outbreak Management Guidance (2023)<br>Health and Social Care Act 2012<br>Health and Care Act 2022<br>Specific NHS capacity and response planning<br>Comprehensive surveillance systems<br>London Pandemic Response Framework   |

|                                |                        |  |   |   |   |
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| <b>R79</b><br><b>VERY HIGH</b> | UKHSA                  | <p><b>Outbreak of an Emerging infectious disease</b></p> <p>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.</p>  | 4 | 4 | <p>NHS Vaccination Programme</p> <p>Specialist capability and capacity planning in NHS trusts</p> <p>Comprehensive surveillance systems and response arrangements</p> |
| <b>R80</b><br><b>MEDIUM</b>    | Local Authorities (SE) | <p><b>Major Outbreak of animal disease</b></p> <p>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.</p> | 2 | 2 | <p>Animal Health Act 1981</p> <p>Animal Health Act 2002</p> <p>Other secondary legislation and EU directives National disease control strategies</p>                  |

**5.3 Societal Risks**

|                             |                          |  |   |   |   |
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| <b>R82</b><br><b>HIGH</b>   | Humanitarian<br>MPS      | <b>Public Disorder</b><br>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<br>Riot Compensation Act 2016<br>Public Order Act 1986<br>Police community tension monitoring processes<br>Police community engagement teams<br>Advice and guidance from police regarding legitimate protest from event planners |
| <b>R83</b><br><b>MEDIUM</b> | Industrial<br>Action TfL | <b>Industrial action - public transport</b><br>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.<br>Employment Act 1980.<br>Employment Act 1988.<br>Public Order Act 1986.<br>Trade Union and Labour Relations (Consolidation) Act 1992.<br>Anti-Social Behaviour Act 2003.<br>Organisational Business Continuity Arrangements           |
| <b>R84</b><br><b>MEDIUM</b> | Industrial<br>Action LFB | <b>Industrial action - firefighters</b><br>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)<br>RCN Code on Industrial Action<br>Alternative emergency cover protocols for the Fire Brigade<br>Organisational Business Continuity Arrangements<br>Recall to active duty  |
| <b>R85</b><br><b>MEDIUM</b> | Industrial<br>Action MoJ | <b>Industrial action - Prison staff</b><br>Industrial action by operational prison staff, leading to a shortfall of staff  | 4 | 2 | Criminal Justice and Public Order Act (1994)  |

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|                             |   | available for duty for more than 24 hours.  |   |   |   |
| <b>R86</b><br><b>MEDIUM</b> | Industrial<br>Action Local<br>Authorities | <b>Industrial action - fuel supply</b><br><br>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<br><br>National Emergency Plan for Fuel  |
| <b>R87</b><br><b>MEDIUM</b> | Humanitarian<br>Local Authorities         | <b>Reception and integration of British Nationals arriving from overseas</b><br><br>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.<br><br>Heathrow Travel Care – a team of social workers.<br><br>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.<br><br>Red Cross and FCO agreement on repatriation; Meet & greet returning passengers at airport, arrange onward transport, supported by the FCO |
| <b>5.4 Natural Hazards</b>  |   |   |   |   |   |



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| <b>R71</b><br><b>VERY HIGH</b>  | Met Office | <b>Severe Space Weather</b><br>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<br>Space Weather is assessed as part of the Daily Hazard Assessment<br>National Grid design standards and response arrangements<br>Alternative positioning, navigation, and timing signal systems<br>Forecasting through Met Office Space Weather Operations Centre |
| <b>R73</b><br><b>VERY HIGH</b>  | UKHSA      | <b>High Temperatures and Heatwaves</b><br>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<br>Public Health Act<br>UKHSA Adverse Weather and Health Plan<br>Long term planning for local authorities, CCGs, and NHS Climate Change<br>Adaption Strategy for London Heat Health Alerts   |
| <b>R75b</b><br><b>VERY HIGH</b> | EA         | <b>Fluvial Flooding</b><br>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  |

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| <b>R75c</b><br><b>VERY HIGH</b> | EA | <b>Surface Water Flooding</b><br><p>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.</p>  | 3 | 4 | <p>Flood and Water Management Act 2010<br/> The Flood Risk Regulations 2009<br/> Land Drainage Act 1991<br/> Water Resources Act 1991<br/> FFC – Flood Guidance Statements<br/> New building developments controlled through planning guidelines<br/> Multi Agency Flood Plans<br/> London Strategic Flood Framework<br/> National Flood Emergency Plan<br/> Environment Agency Floodline<br/> Met Office Forecasts and National Severe Weather Warning Service</p> |
| <b>R76</b><br><b>VERY HIGH</b>  | EA | <b>Drought</b><br><p>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.</p> | 2 | 5 | <p>Water Resources Act 1991<br/> DEFRA: Planning for Major Water and Wastewater Incidents in England and Wales<br/> Drought Plan direction document<br/> Individual Water Company Drought Plans<br/> London Drought Framework</p>   |

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| <b>L19</b><br><b>HIGH</b> | EA                | <b>Groundwater Flooding</b><br>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<br>The Flood Risk Regulations 2009<br>Land Drainage Act 1991<br>Water Resources Act 1991<br>Environment Agency Floodline<br>FFC – Flood Guidance Statements<br>New building developments controlled through planning guidelines<br>Multi Agency Flood Plans<br>London Strategic Flood Framework<br>National flood emergency plan |
| <b>R67</b><br><b>HIGH</b> | Local Authorities | <b>Volcanic eruption</b><br>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<br>Airline response plans   |
| <b>R72</b><br><b>HIGH</b> | Met Office        | <b>Storms</b><br>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<br>Met Office Forecasts and National Severe Weather Warning Service<br>Warning & Informing<br>London Adverse Weather Framework<br>Category 1 & 2 responders emergency response plans<br>Highways Agency response plans.<br>TfL adverse weather plans<br>LFB USAR and Water Rescue capabilities.                                    |

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|                      |            |  |   |   | LAS HART  |
| <b>R74<br/>HIGH</b>  | Met Office | <p><b>Low temperatures and snow</b></p> <p>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.</p> | 3 | 3 | <p>Met Office Hazard Manager service</p> <p>Warning &amp; Informing</p> <p>London Adverse Weather Framework</p> <p>Category 1 &amp; 2 responders' emergency response, BCM and severe weather plans.</p> <p>Highways Agency, TfL and local authorities' winter road maintenance plans.</p> <p>Met Office forecasts &amp; National Severe Weather Warning Service</p> <p>TfL snow desk</p> <p>Op GRIDLOCK to support motorists stranded on M25.</p> |
| <b>R75a<br/>HIGH</b> | EA         | <p><b>Coastal Flooding</b></p> <p>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.</p>  | 3 | 3 | See L19   |
| <b>R77<br/>HIGH</b>  | EA         | <p><b>Poor Air Quality</b></p> <p>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.</p>   | 3 | 3 | <p>Air Quality Standards Regulations 2010</p> <p>European directive on ambient air quality and cleaner air for Europe (2008/50/EC)</p> <p>The UK Air Quality Strategy</p> <p>Environmental Permitting Regulations 2010</p> <p>Clean Air Act &amp; Environmental Protection Act</p> <p>Local authority air quality management</p>  |

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|                              |     |  |   |   | <p>areas and action plans- London Mayor's Air Quality Strategy which encompasses Ultra Low Emissions Zones and Low Emission Neighbourhoods</p> <p>AirTEXT warning system</p> <p>Local Air Quality Action Plans</p> <p>Local Air Quality Monitoring Network</p> <p>GLA Air Quality Action Plan</p> |
| <b>L54c</b><br><b>MEDIUM</b> | LFB | <p><b>Fires involving landfill and waste processing sites</b></p> <p>Major fire lasting several days with significant environmental and local impacts.</p>   | 5 | 2 | See R65   |
| <b>L54e</b><br><b>MEDIUM</b> | LFB | <p><b>Major fire in care homes and hospitals</b></p> <p>Fire causing up to 20 fatalities of vulnerable people in residence causing the closure of an entire hospital or care home.</p>                               | 3 | 2 | See R65   |
| <b>R66</b><br><b>MEDIUM</b>  | LFB | <p><b>Wildfire</b></p> <p>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.</p> | 4 | 2 | <p>See R65</p> <p>London Fire Brigade borough specific rural strategies Specialist firefighting equipment and resources</p>   |
| <b>HL21</b><br><b>LOW</b>    | LFB | <p><b>Land Movement</b></p> <p>Roads and access routes impassable for a time. Emergency access into/out of large populated areas difficult or impossible; severe congestion over wide geographical</p>               | 3 | 1 | <p>Land use planning restrictions</p> <p>Building Control regulations enforced by Local Authorities.</p> <p>Construction, renovation, maintenance, and demolition standards</p>   |

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|                                   |                   | 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.  |   |   |  |
| <b>R68<br/>LOW</b>                | Local Authorities | <b>Earthquake</b><br>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<br>Specialist fire and rescue assets |
| <b>5.5 Hostile State Activity</b> |                   |  |   |   |  |
| <b>R89<br/>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  |
| <b>R95<br/>VERY HIGH</b>          | MPS               | <b>Nuclear attack by a state on the UK mainland or UK overseas interests</b><br>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  |

|                    |                   |  |   |   |  |
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| <b>R32<br/>LOW</b> | Local Authorities | <p><b>Major interference in UK democratic process</b></p> <p>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.</p> | 3 | 1 | UK Electoral processes largely not reliant on computer systems vulnerable to this type of attack |
|--------------------|-------------------|--|---|---|--|

## 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<br/>MEDIUM</b> | <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 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><br><b>HIGH</b>   | <b>Attacks on Infrastructure</b><br>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.<br>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. | 4 | 3 | UK Government's counter-terrorism Strategy (CONTEST) (summarised above)<br>Business continuity plans for loss of essential services helps to minimise disruption to users.<br>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<br>National Cyber Security Centre advises government and industry on how to secure cyber infrastructure and to respond to incidents.<br>Consequence based planning by the authorities ensuring that responses to a variety of emergencies are already planned for. |
| <b>T3</b><br><b>HIGH</b>   | <b>Attacks on Transport</b><br>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.<br>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.<br>BTP work with industry and DfT on security and provide tailored policing of the railway network.<br>Contingency plans developed by operators in conjunction with responders<br>Op Servator hostile reconnaissance disruption operations run by PSO & BTP  |
| <b>T4</b><br><b>MEDIUM</b> | <b>Cyber attacks</b><br>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.<br>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.<br>Additional outreach to businesses and public regarding cyber threats and security<br>Centre for Protection of National Infrastructure providing security and cyber security advice                  |



|                               |   |   |   |  |
|-------------------------------|---|---|---|--|
| <b>T5</b><br><b>MEDIUM</b>    | <b>Smaller Scale CBRN Attacks</b><br>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.<br>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.<br><br>Attacks could range from a small target incident, to large catastrophic events at the highest end of the spectrum, such as the widespread dispersal of a biological agent or the detonation of an improvised nuclear device. | 4 | 2 | Improving methods to detect and monitor CBRN materials, including through the border.<br>Regulating access to hazardous materials and their precursors<br>Improving and maintaining capabilities to enable emergency responders to respond effectively, rapidly, and safely<br>Provision of guidance in incidents and increasing public access to information on what to do during general and hazardous materials emergencies<br>Local and organisational CBRN response plans<br>Well-developed specialist response capabilities<br>Access to medical countermeasures and adaptability of other consequence-based plans to respond to unconventional attacks<br>Decontamination process of people and place regularly trained and tested.<br><br>Continuity plans to ensure effective civil government can continue throughout and after an incident. |
| <b>T6</b><br><b>HIGH</b>      | <b>Medium Scale CBRN Attacks</b><br>See T5 outcome description  | 4 | 3 | See T5 Controls in Place   |
| <b>T7</b><br><b>VERY HIGH</b> | <b>Larger Scale CBRN Attacks</b><br>See T5 outcome description<br>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   |

## 6. Risks Not Applicable and Removed

| ID | Risk sub-category | Rationale for Not Applicable Status |
|----|-------------------|-------------------------------------|
|----|-------------------|-------------------------------------|

|      |  |  |
|------|--|--|
| H1   | Gas Supply Infrastructure                      | Deemed not applicable to London as no sites meet this description. Flammable gas storage covered in HL25 assessment.   |
| H2   | Chemical Gas Supply Infrastructure (Pipelines) | Deemed not applicable to London due to no ethylene gas pipelines.  |
| H3   | Fuel Supply Infrastructure (installations)     | Deemed not applicable to London due to no oil refineries.  |
| H6   | Offshore Oil/Gas Platform                      | Deemed not applicable to London due to no offshore Oil or gas platforms.   |
| H19  | Coastal Flooding                               | London Coastal Flooding risk see HL19.   |
| H21  | Fluvial Flooding                               | London Fluvial Flooding risk see L21.  |
| H25  | Animal Diseases                                | London separates Zoonotic and Non-Zoonotic. See HL26a and HL26b  |
| H33  | Prison Officers Strike                         | Risk not realised as prison officers are not permitted to strike.  |
| H50  | Drought  | London specific risk; Severe Drought. See HL50.  |
| H61  | Civil Nuclear                                  | Risk not realised in London – Covered under Radiation (Emergency Preparedness and Public Information) Regulations (REPPIR)   |
| HL4  | Major pollution of inland waters               | London Risk Advisory Group agreed that this risk is to be excluded from the risk register on the grounds that it is covered under H15 (Maritime pollution) and will be included as a secondary impact in other Fire, Industrial Accidents & Pollution risks. |
| HL19 | Coastal/Tidal Flooding                         | Deemed non applicable to Sutton as it sits outside of the floodplain for the River Thames  |
| HL34 | Evacuation of Passenger Ship                   | Deemed non applicable to Sutton as no major navigable waterways pass through it  |
| HL37 | Maritime Pollution Incident                    | Deemed non applicable to Sutton as no major navigable waterways pass through it  |
| H15  | Maritime Pollution                             | Deemed non applicable to Sutton as no major navigable waterways pass through it  |

## 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 Reasonable Worst Case Scenario occurring within 12 months |
|-------|-----------------------|--|
| 1     | Low                   | Less than 0.2% chance of occurring per year                              |
| 2     | Medium Low            | Between 0.2% and 1%  |
| 3     | Medium                | Between 1% and 5%  |
| 4     | Medium High           | Between 5% and 25%   |
| 5     | High                  | More than 25%  |

### 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 as a result of the risk.  |
| Economic            | An approximate net economic cost, including both direct (eg loss of goods, buildings, infrastructure) and indirect (eg loss of business, increased demand for public services) costs.                             |
| 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

|                |   |
|----------------|---|
| 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.  |

*Based on the model risk rating matrix published in Annex 4F of "Emergency Preparedness" (HM Government, 2005)*

NOT PROTECTIVELY MARKED