

Version 5.0

February 2019

London Borough of Camden

Borough Risk Register

This Borough Risk Register is collectively owned by the Category 1 Responders (as defined by Schedule 1 to the Civil Contingencies Act 2004) for the London Borough of Camden.

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Document History		
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Distribution History		
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Members Agencies of the Borough Resilience Forum			
Category 1 Responders			
London Borough of Camden – Local Authority		London Fire Brigade	
Metropolitan Police Service		London Ambulance Service	
British Transport Police		NHS England (London)	
Public Health England		Environment Agency	
Health Protection Agency			
Category 2 Responders			
UK Power Networks	National Grid	Thames Water	Network Rail
Eurostar	Transport for London	Health & Safety Executive	Camden Clinical Commissioning Group
British Red Cross			

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Introduction

Risk assessment is a core capability for London which underpins the work of the London Resilience Forum. The assessment of risk contained in the London Risk Register drives the development of work to prevent, mitigate, respond to and recover from those scenarios.

The London Risk Register is made publically available to assist communities and businesses in developing their own emergency and business continuity arrangements and is used as a basis for the creation of Borough Risk Registers in most boroughs across London. It is available from the London Resilience website.

Borough Risk Register

The Camden Borough Risk Register is used by the Camden Borough Resilience Forum to prioritise resilience activities towards those risks judged to have a higher rating. It provides additional information not available in the London Risk Register for the purpose of developing local arrangements.

The risks included in the London Risk Register and in this Borough Risk Register represent 'reasonable worst case scenarios' and their inclusion in the register does not mean that they are going to happen, or that if they did do that they would be as serious as the descriptions included here. The Reasonable Worst Case scenarios are nationally developed and informed by historical and scientific data, modelling and trend surveillance and professional expert judgment.

Each risk is assigned a score for impact and likelihood. Impact is ranked from Limited (1) to Catastrophic (5) and likelihood by how likely a risk is to happen over the next 5 years. These scores are combined to give an overall risk rating.

The Camden Borough Risk Register is structured to follow closely the format and content of the London Risk Register 2018 so that it takes full advantage of the work carried out by the experts in the London Risk Advisory Group.

For each hazard identified there is a hazard number matching that is used in the London Risk Register 2018.

Camden's Borough Risk Register differs from the London Risk Register 2018 in two respects:

- If the local risk in the borough is assessed by the Borough Resilience Forum to be higher or lower than the rating provided in the London Risk Register 2018
- If the direct impacts of a risk would be realised exclusively outside of the borough

The Camden Borough Risk Register has been created for use by professional partners as well to provide information about hazards identified to the public and businesses, who may refer to this when managing their own community and business resilience.

The UK National Risk Register of Civil Emergencies provides an outline of risk affecting the UK as a whole.

About Camden

The London Borough of Camden is a North London Borough, and has boundaries with the London Boroughs of Westminster, Islington, Barnet, Brent, Haringey and the City of London.

Social Factors

Camden is an inner London borough, relatively small in size and densely populated with 110 people per hectare, compared with 57 people per hectare in London. The population is estimated at 240,000 residents in mid-2017, which is forecast to grow by 10% to 257,700 in the next ten years.

Whilst the Camden population is relatively young, with 67% of the population aged under 45 years, people over 75 years old are expected to be one of the fastest growing groups, increasing by 36% (4,800 people) over the same period, suggesting an increase in the vulnerable population.

It is estimated that in Camden, where there is a substantial Bangladeshi community, around 163 different languages are spoken. There is also a substantial “White Other” population that is likely to be heterogeneous.

Environmental Factors

Camden is mainly heavily urbanised containing areas of business, residential areas and some open spaces. Camden is 71% ‘built environment’ with business centres such as Holborn and Euston, large residential districts including Hampstead and Highgate and open spaces such as Hampstead Heath, Parliament Hill and Kenwood.

Economic Infrastructure

Camden accounts for some 36% of jobs in the North Central groups of boroughs (Camden, Islington, Haringey, Hackney, Barnet and Enfield). There are 33,000 businesses that are mainly located in the key business centres of Holborn and Euston.

Transport Infrastructure

In Camden, there are three major stations in close proximity along the Euston Road corridor- Kings Cross, St. Pancras and Euston. Camden has 17 underground stations. The Channel Tunnel Rail Link is another feature of the transport infrastructure: It passes under Hackney and Islington before surfacing and crossing into Camden to terminate at St. Pancras. Under development is the new HS2 line which will terminate at Euston.

In the inner London region the road infrastructure is comprehensive and includes sections which fall inside the Congestion Charge Zone. Arterial routes run through the borough and congestion can be severe at times. A comprehensive bus service runs through the borough.

Below-Surface Infrastructure

Camden has a substantial underground network in addition to that used for underground transportation. The London Borough of Camden leases tunnel space to National Grid (gas), UK Power Networks (electricity), Thames Water (water) and numerous telecommunications companies.

Hazardous Sites

There are no top-tier Control of Major Accident Hazards (COMAH) sites located in Camden. Although not falling in to the category of Hazardous Sites, there are additional sites of interest within Camden; along the Euston Road corridor in Camden there are three major railway stations; Kings Cross, St. Pancras and Euston. Close to these stations are other sites such as the British Library and the Frances Crick Institute.

Surrounding Boroughs

The London Borough of Camden is part of the North Central Sub Regional Resilience Forum area which also comprises the London Boroughs of Islington, Haringey, Hackney, Barnet and Enfield.

Source's: GLA 2016-based 'Camden Development, Capped AHS', © GLA, 2018 ; BBC: <https://www.bbc.co.uk/news/uk-41901294> Alasdair Rae from the University of Sheffield using data from Corine and Ordnance Survey

1. Navigating the Borough Risk Register

Following the format of the London Risk Register, the Borough's Risk Register is organised into the following categories:

Natural Hazards

Human Health Incidents

Flooding

Volcanic Hazards

Severe Weather

Severe Space Weather

Severe Wildfires

Animal Health Incidents

Major Accidents / Incidents

Major Industrial Accidents / Environmental Pollution

Infrastructure Technical Failures

Major Structural Accidents

Major Transport Accidents

Disruptive Industrial Action

Public Disorder

Malicious Attacks

Attacks on Crowded Places

Unconventional Attacks

Attacks on Infrastructure

Cyber Security

Attacks on Transport System

Borough Risk Register: High-Level Summary

Impact	5	H9 large toxic chemical release	X5 catastrophic unconventional attack	H41 national electricity failure	H23 pandemic flu	
	4	H44 major reservoir failure ; H11 radiation exposure ; H16 aviation accident over semi-urban area	H50 drought ; HL12 local transport accident of hazardous chemicals ; H38 disruption in upstream oil and gas production ; H14 major food contamination incident	H45 regional electricity failure	H56 severe space weather	
	3	HL30 localised explosion at natural gas main ; HL22a large building collapse ; HL23 bridge collapse	HL28 localised fire at fuel site ; HL14 local transport accident of fuel ; HL105 complex built environments ; H39 non-availability of piped water supply ; HL11 railway accident ; HL9 aviation accident ; X6 cyber security (infrastructure) ; HL26a non-zoonotic notifiable animal diseases ; HL26b zoonotic notifiable animal diseases	H22 surface water flooding ; H55 volcanic eruption overseas ; H17 storms and gales ; H18 low temperatures ; HL21 land movement ; HL3 localised industrial accident ; X2 attacks on infrastructure ; X4 small scale unconventional attacks ; H35 industrial action in rail workers	H24 infectious diseases ; L19 flooding from other sources ; H48 heatwave ; X1 attacks on crowded places	HL42 industrial action in emergency services ; X3 attacks on transport system
	2	HL12 laboratory biological substance release	H58 & HL3 severe wildfire ; HL7 industrial explosion ; H40 loss of telecommunications ; HL9b small aircraft incident	H31 fuel supply constraint	H54 aviation disruption due to volcanic ash ; H46 industrial biological substance release ; HL4 major pollution of inland waters ; H37 influx of nationals	HL22 building collapse
	1			H57 public disorder	HL10 local accident on major roads	X7 cyber security (data confidentiality)
		1	2	3	4	5
Likelihood						

Each risk is assigned a Risk ID which is nationally consistent and relates to a more detailed and protectively marked, Individual Risk Assessment

Risk ID	Outcome Description / Variation and Further Information	Impact Score	Controls in Place	Review Dates
H – National	Describes the key consequences of the risk, provides	Of the risk	Existing risk management	Date of last review and date of
HL – Local Response	additional detail around local variation from national	consequences	arrangements	next scheduled review
L – Locally Applicable	planning assumptions			

Ref ID	Risk Sub-Category (Lead Assessor)	Outcome Description / Variation and Further Information	Likelihood	Impact	Controls in Place	Last Review
			Risk Rating			Next Review
Title of Risk Category						

Risk Category	Likelihood Score	Risk Rating
	Of the risk occurring in the	Scale based on likelihood and impact
	Next 5 years	

Included within the Borough Risk Register is a further column for additional Local Commentary

Borough Risk Register

Ref ID	Risk sub-category (Lead Assessor)	Outcome-Description / Variation and Further Information	Likelihood	Impact	Controls in Place	Last Review	Camden Responders Commentary
			Risk Rating			Next Review	
Human Diseases / Human Health Incidents							
H23	Influenza Type Disease (Pandemic) (Public Health England)	A worldwide outbreak of influenza occurs when a novel flu virus emerges with sustained human to human transmission. Up to 50% of the population may experience symptoms, which could lead to up to 750,000 fatalities in total in the UK. Absenteeism would be significant and could reach 20% for 2-3 weeks at the height of the pandemic, either because people are personally ill or caring for someone who is ill, causing significant impact on business continuity. Each pandemic is different and the nature of the virus and its impacts cannot be known in detail in advance. Based on understanding of previous pandemics, a pandemic is likely to occur in one or more waves, possibly weeks and months apart. Each wave may last between 12-15 weeks.	4	5	<ul style="list-style-type: none"> NHS Vaccination Programme (Seasonal and provision for pandemic specific) Specific NHS capacity and response planning Comprehensive surveillance systems London Resilience Partnership Plans 	February 2019	Updated to reflect London

		<p>All ages may be affected, but we cannot know until the virus emerges which groups will be most at risk. There is no known evidence of association between the rate of transmissibility and severity of infection, meaning it is possible that a new influenza virus could be both highly transmissible and cause severe symptoms. Pandemics significantly more serious than the RWCS are therefore possible.</p> <p>The impact of the countermeasures in any given pandemic is difficult to predict as it will depend on the nature of the virus and the RWCS assumes countermeasures are not effective.</p> <p>Whilst not explicitly stated in every case, H23 would likely compound the effects of the vast majority of risks in the NRA as all sectors would experience staffing pressures.</p>	Very High			February 2020	
H24	Emerging Infectious Diseases (Public Health England)	<p>Over the past 30 years, more than 30 new or newly recognized diseases have been identified. Most of these have been zoonoses, i.e. diseases that are naturally transmissible, directly or indirectly, from animals to humans. It is highly probable that such an infection will arise in another country and possible that it could arrive in the UK before it is identified, but it is also possible that one may arise in the UK.</p> <p>Severe Acute Respiratory Syndrome (SARS), a newly emerging severe respiratory infection, spread to infect over 8,000 people worldwide within an eight month period before it was contained in early 2004. An emerging or re0emerging infection would not</p>	4	3	<ul style="list-style-type: none"> • NHS Vaccination Programme • Specialist capability and capacity planning in NHS trusts • Comprehensive surveillance systems and response arrangements • London Resilience Partnership Plans 	February 2019	Updated to reflect London

		<p>necessarily be spread by the respiratory route (as are influenza and SARS/MERS), but could instead be transmitted directly between people through the gastro-intestinal (e.g. E. Coli) or blood routes (e.g. Ebola), or indirectly via vectors such as insects (Zika virus).</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 settings. However, it is unlikely to present a wider threat to the UK through sustained spread.</p>	High			February 2020	
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Flooding							
L19	Flooding from other sources (Environment Agency)	A rapid increase in volume of water in a localised area due to either; heavy rainfall, groundwater emergence or a burst water main which overwhelms the local drainage or river system, collects in low lying areas resulting in flooding of property or infrastructure.	4	3	<ul style="list-style-type: none"> • Flood and Water Management Act 2010 • Land Drainage Act 1991 • Water Resources Act 1991 • Environment Agency • Floodline and public warnings • Met Office, National Severe Weather Warning Service • Flood Guidance Statements 	February 2019	Updated to reflect London
			High			February 2020	
H44	Major Reservoir Dam Failure / Collapse (Environment Agency)	Collapse without warning resulting in almost instantaneous flooding. Significant movement of debris 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. Up to 200 fatalities,	1	4	<ul style="list-style-type: none"> • Reservoirs Act 1975 • Water Act 2003 • Regular Statutory Inspections • Met Office National Severe Weather Warning Service 	February 2019	Updated to reflect London

		up to 1,000 casualties. Up to 50 missing persons and people stranded. Hazardous recovery amongst collapsed infrastructure and debris. Up to 200 people need temporary accommodation for 2-18 months. Extent of downstream effect could reach 50-60km. Significant damage to gas, electricity supplies, telecommunications, road and rail links.	Medium		<ul style="list-style-type: none"> London Resilience Partnership Plans 	February 2020	
H22	Surface Water Flooding (Local Authorities)	<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. These events result in a pocket of exceptionally high rainfall in the South East. The event includes rain gauges in London and just outside of London recording exceptional levels of rainfall over a short duration.</p> <p>The most severe impacts occur in the London Local Resilience Forum (LRF) area, although further impacts also occur in Hertfordshire and the Thames Valley (over £100 million property damages in each). Over 314,000 people are located in residential areas, of which 25,000 are identified as more vulnerable and potentially requiring assistance. Total damage to property amount to £1.6 billion affecting a total 108,000 properties. In addition, there may be over 200,000 people in the flooded area during the day due to the high working population: 184,000 weekday workers are located in 10,000 business modelled to flood in the London LRF. Severe disruption to critical infrastructure and transport, including the closure of around 17 underground stations and 73 railway stations is expected. 427km of road and 218km of railway are estimated to be impacted.</p>	3	3	<ul style="list-style-type: none"> Flood and Water Management Act 2010 Metropolis Management (Thames River Prevention of Floods Amendment Act 1879) EA Flood Warning Direct service Met Office National Severe Weather Warning Service London Resilience Partnership Plans Existing and planned Flood Defences 	February 2019	Added in to reflect London risk 2018
			High			February 2020	

Volcanic Hazards							
H54	Disruption to aviation as a consequence of volcanic ash	Volcanic ash incursions for up to 25 days resulting in sporadic and temporary closures of significant parts of UK airspace for up to a total of 15 days during a 3 month eruption period. The entire UK mainland and potentially other parts of Europe could be affected for up to 10 of these days. A single period of closure within the 3 month eruptive episode may last for up to 12 consecutive days, depending on meteorological conditions.	4	2	<ul style="list-style-type: none"> Met Office Volcanic Ash Advisory Centre forecasting CAA Volcanic Ash Safety Regime Airline response plans 	February 2019	Updated to reflect London 2018
			Medium			February 2020	
H55	Severe Effusive (Gas Rich) Volcanic Eruption Overseas	A severe volcanic eruption, generating large amounts of gas, aerosol and ash over a 5 month period affecting the UK and Northern Europe.	3	3	<ul style="list-style-type: none"> Met Office forecasting Category 1 & 2 responder Business Continuity Plans Excess Deaths Framework Health Sector surge and escalation plans 	February 2019	Updated to reflect London 2018
			High			February 2020	

Severe Weather							
H17	Storms and Gales (Local Authority)	Storm force winds affect multiple regions for at least 6 hours during a working day. Most inland and lowland areas experience mean speeds in excess of 55mph and gusts in excess of 85mph. Although the storm will be over in less than a day, disruption to infrastructure including power, communications, transport networks, homes and	3	3	<ul style="list-style-type: none"> Regular inspections of trees and highways for maintenance. Met Office National Severe Weather Warning Service Met Office Hazard Manager service Responder specialist resources 	February 2019	No Change

		<p>businesses could last for 1-4 days and for up to 5 days in remote rural locations.</p> <p>There may be a number of casualties and fatalities, mainly due to falling trees, structures or other debris.</p> <p>Some social disruption and economic impacts are likely, due to disruption to transport networks, power supplies, telecommunications links and water supplies, predominantly from fallen branches, trees and other debris. Storms may also have an effect on agriculture as crops could be destroyed.</p>	High			February 2020	
H18	<p>Low Temperatures and Heavy Snow</p> <p>(Local Authority)</p>	<p>For at least one week, multiple regions of the UK (London being one), are subjected to low temperatures and snow (falling and lying) over substantial areas of low-lying land, (below 300m). After an initial fall of snow, there is further snowfall on and off for at least 7 days. Most lowland areas experience some falls in excess of 10cm at a time, with overall snow depth in excess of 30cm. This would coincide with a period of at least 7 consecutive days with a daily mean temperature below -3C.</p> <p>This would affect vulnerable communities, particularly older people and those with pre-existing conditions, such as cardiovascular and respiratory disease. An increase in falls, injuries (e.g. fractures)</p>	3	3	<ul style="list-style-type: none"> • Highways Act 1980 • Railways and Transport Act 2003 • Government's 'Snow Code' • Specific plans for traffic management and transport resilience • Coordination of gritting and salt stocks • Met Office National Severe Weather Warning Service • Responder specialist resources • RE:NEW retrofitting programme 	February 2019	No Change

		<p>and hypothermia would be expected due to the prolonged period of cold, snow and ice.</p> <p>There will be a large number of excess morbidity/mortality deaths with potentially thousands of casualties and fatalities. This will place significant pressure on health and social care services.</p> <p>Considerable social disruption, along with economic impacts, may affect transport networks, power supplies, telecommunications links and water supplies. Schools and businesses would be hampered by the disruption. School closures would have consequential effects on staffing levels in other sectors, thereby exacerbating the economic impact. The agricultural sector may suffer loss of livestock.</p>	High			February 2020	
H50	Drought (Environment Agency)	Periodic water supply interruptions affecting 385,000 businesses in London for up to 12 months. Emergency Drought Orders in place and authorising rota cuts in supply according to needs of priority users as directed by Secretary of State.	2	4	<ul style="list-style-type: none"> Water Resources Act 1991 Floods and Water Management Act 2010 Progressive restraints on consumption to preserve supply for critical services Storage reservoirs 	February 2019	Maintained as Camden
			High			February 2020	
H48	Heatwave (Health)	Daily maximum temperatures in excess of 32C and minimum temperatures in excess of 15C over most of a region for at least 5 consecutive days where maximum temperatures exceed 32C. Up to 1,000 fatalities and 5,000 casualties, mainly amongst the elderly. There could be disruption to power supply, telecommunications links and transport infrastructure within the 2 weeks.	4	3	<ul style="list-style-type: none"> Health and Safety at Work Act 1974 Public Health Act Heatwave Plan for England London Resilience Partnership Plans Climate Change Adaption Strategy for London Heat-Health Watch – annually June to September Air Quality forecasts 	February 2019	Updated to reflect London
			High			February 2020	

Structural Incidents							
HL21	Land Movement (London Fire Brigade)	<p>Caused by Landslides or tremors. Roads and access routes impassable for a time. Emergency access into/out of large populated areas difficult or impossible; severe congestion over wider geographical area.</p> <p>Loss of power and other essential services over wider geographical area. Potential for a number of persons to be trapped or missing either in landslides itself and/or in collapsed structures. Up to 5 fatalities depending on the size and location of land movement.</p> <p>Such incidents are rare within the UK with some areas being more prone to landslides than others.</p>	3	3	<ul style="list-style-type: none"> • Land use planning restrictions • Building Control regulations enforced by Local Authorities • Construction, renovation, maintenance and demolition standards 	February 2019	Updated to reflect London
			High			February 2020	

Severe Space Weather							
H56	Severe Space Weather (GLA)	<p>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.</p> <p>Up to 10% of the current operational satellite fleet may have temporary outages lasting hours to several days, including disruption to the Global Navigation Satellite Systems (GNSS, e.g. GPS). This could result in a small increase in casualties and fatalities as the emergency services use automated dispatch systems based upon GNSS.</p> <p>Aviation disruption could last several days as a result of:</p> <ul style="list-style-type: none"> • Increased error rate in electronic control systems; • Temporary loss of high frequency radio and satellite communication; • Increased aircraft separation due to degradation of GPS augmentation services; and • Increased exposure of passengers and crew to elevated levels of radiation. <p>Increase in error rate in ground-based unprotected digital control systems e.g. computers, internet, mobile phones etc.</p> <p>Interruptions lasting up to three days to L-band communications including civilian mobile satellite communication and satellite broadcasting. Terrestrial broadcasting could be indirectly affected due to a dependency on GPS timing.</p>	4	4	<ul style="list-style-type: none"> • Electricity Industry monitoring and analysis of GIC • Space Weather is assessed as part of the Daily Hazards Assessment • National Grid design standards and response arrangements • Alternative positioning, navigation and timing signal systems • Forecasting through Met Office Space Weather Operations Centre 	February 2019	Updated to reflect London 2018
			Very High	February 2020			

Severe Wildfires							
H58 and HL33	Severe Wildfire and Forest or Moorland Fire (London Fire Brigade)	<p>Severe wildfire spreading over an area of 1500 hectares at an urban-rural interface and lasting for 7-10 days.</p> <p>At any one time during the incident period, a fire front covering 20 hectares will burn with significant potential to put firefighters at risk, with a further 100 hectares of vegetation smouldering and/or creeping and carrying the risk of a secondary burn-back.</p> <p>Fatality numbers low (under 10) and casualty numbers between 50 and 100, as a result of respiratory complaints and burns.</p> <p>Dense smoke would spread for a distance of 3-5 miles (minimum) resulting in short to medium term closures of motorways (2x12 hours) and major arterial roads and railways lines.</p>	2	2	<ul style="list-style-type: none"> • London Fire Brigade borough specific rural strategies • Specialist firefighting equipment and resources 	February 2019	Updated to reflect London

	<p>Smoke rising to a higher altitude could also cause disruption to incoming flight paths if the fire is close to a major airport.</p> <p>Disruption to electricity, fuel and telecommunications is possible and a possibility of water contamination as a result of dissolution of ash and burn particulates into ground and reservoir supplies.</p> <p>There may also be significant natural environmental impacts as a result of damage to Special Protection Areas (SPA), Special Areas of Conservation (SAC) and Sites of Special Scientific Interest (SSSI) and a large release of carbon and greenhouse gases.</p> <p>Evacuation of 3,000 people from an affected area.</p> <p>Firefighting may require mutual aid, including use of National assets such as High Volume Pumps and specialist officers.</p>	Medium		February 2020	
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Animal Diseases / Animal Health Incidents							
HL26a	<p>Non-zoonotic Notifiable Animal Diseases</p> <p>(Local Authority)</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.</p> <p>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	3	<ul style="list-style-type: none"> • Animal Health Act 1982 • Animal Health Act 2002 • Other secondary legislation and EU directives • National disease control strategies 	<p>February 2019</p> <p>February 2020</p>	<p>Updated to reflect London</p> <p>Managed in line with statutory framework</p>
			Medium				

HL26b	Zoonotic Notifiable Animal Diseases (Local Authority)	The most significant disease in this category is Highly Pathogenic Avian Influenza. The major outbreak scenario is of much greater scale than that experienced in any of the recent outbreaks of avian influenza in the UK, where the disease has been contained and has been limited to one or two infected premises plus associated contact premises. Need to cull and dispose of up to 30 million poultry across UK. Loss of disease free status resulting in EU and third country import bans on poultry, captive birds and poultry products. Disruption to communities, local economies, tourism and the environment. Economic impacts for a major outbreak assess at £60 million.	2	3	<ul style="list-style-type: none"> Animal Health Act 1982 Animal Health Act 2002 Other secondary legislation and EU directives National disease control strategies 	February 2019	Updated to reflect London Managed in line with statutory framework
			Medium			February 2020	

Major Industrial Accidents / Industrial and Environmental Pollution Incidents							
HL3	Localised Industrial Accident Involving Small Toxic Release (London Fire Brigade)	Up to 1km from site causing up to 10 fatalities and up to 100 casualties.	3	3	<ul style="list-style-type: none"> Control of Major Accident Hazards Regulations 2005 (COMAH) Regulatory Reform (Fire Safety) Order 2005 London Resilience Partnership Plans 	February 2019	Updated to reflect London
			High			February 2020	

H46	<p>Biological Substance Release During an Unrelated Work Activity / Industrial Process</p> <p>(Public Health England)</p>	<p>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.</p>	4	2	<ul style="list-style-type: none"> • Health and Safety at Work Act 1974 • Control of Substances Hazardous to Health Regulations 2002 • The notification of Cooling Towers and Evaporative Condense Regulations 1992 require the notification of wet cooling towers and evaporative condensers to local authorities • Management of Health and Safety at Work Regulations 1999 • Reporting of Injuries Diseases and Dangerous Occurrences Regulations • HSC Approved Code of Practice and Guidance 2001 (not fully complied with) 	February 2019	Updated to reflect London
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			Medium		<ul style="list-style-type: none"> • HSE and Local Authority inspections of cooling towers; (not uniform) • HSC The control of legionella bacteria in water systems, Approved Code of Practice and Guidance November 2013 • Notifiable disease. Local HPT follows national guidance for the management of single cases and clusters. • NEW HSE Guidance for Spa Pools. • Reporting of incident to HSE with subsequent investigation and enforcement if relevant. • NHS and PHE response to patients and to investigate and protect Public Health. • Local Authority and other partners as relevant. 	February 2020	
HL4	Major Pollution of Inland Waters (Environment Agency)	<p>Pollution incident impacting upon inland waters (for example, could be caused by chemical spillage or release of untreated sewage) leading to persistent and/or extensive effect on water quality, major damage to aquatic ecosystems, closure of potable abstraction, major impact on amenity (i.e. tourism) value, serious impact on human health.</p> <p>Major sewage pollution could occur as the result of a failure of electric supply.</p>	4	2	<ul style="list-style-type: none"> • Environment Act 1995 • Water Resources Act 1991 • Environmental Protection Act 1990 • Pollution Prevention and Control Act 1999 • Control of Major Accident Hazards Regulations 1999 • The Environmental Permitting Regulations (England and Wales) 2010 	February 2019	Maintained as Camden

			Medium		<ul style="list-style-type: none"> • Groundwater Regulations 1998 • Anti-Pollution Works Regulations 1999 • Environmental Permitting Regulations 2010 • Inspections and compliance monitoring undertaken by appropriate regulatory body • 24 hour incident hotline and response system • Pollution control equipment and resources 	February 2020	
HL12	Local Accident Involving Transport of Hazardous Chemicals (London Fire Brigade)	Up to 50 fatalities and up to 500 casualties (direct injuries from the accident would be similar to road or rail accidents; indirect casualties are possible, if substance covers wide area). The extent of the impact would depend on substance involved, quantity, nature and location of accident. The assumption is based on phosgene / chlorine.	2	4	<ul style="list-style-type: none"> • Carriage of Dangerous Goods by Rail Regulations 1996 • Packaging, Labelling and Carriage of Radioactive Material by Rail Regulations 2002 • Radioactive Material (Road Transport) regulations 2002 	February 2019	Updated to reflect London
			High		<ul style="list-style-type: none"> • Air Navigation (Dangerous Goods) Regulations 1994 • Merchant Shipping (Dangerous Goods and Marine Pollutants) Regulations 1990 • Specialist Emergency Services and other responder equipment and resources 	February 2020	
H9	Large Toxic Chemical Release (London Fire Brigade)	Up to 3km from site of toxic chemical release causing up to 50 fatalities and up to 2,000 casualties from a large industrial complex or bulk storage of chemicals near to a populated (i.e. urban) area. There are some sites of this nature within the M25. Depending on the nature and extent of the	1	5	<ul style="list-style-type: none"> • Control of Major Accident Hazards Regulations 2005 (COMAH) • Regulatory Reform (Fire Safety) Order 2005 	February 2019	Updated to reflect London

		contamination there could be impacts on air, land, water, animal welfare, agriculture and waste management. This risk might require decontamination. Excessive demands on health care services locally both short and long term. Risk to water supplies and contamination of farm land could lead to avoidance of foodstuffs.	High		<ul style="list-style-type: none"> Emergency Services and other responder specialist resources London Resilience Partnership Plans 	February 2020	
HL28	Localised Fire or Explosion at a Fuel Distribution Site or Tank Storage of Flammable and/or Toxic Liquids. (London Fire Brigade)	Up to 1km around the site, causing up to 15 fatalities and 200 casualties. Impact on environment, including widespread impact on air quality.	2	3	<ul style="list-style-type: none"> Control of Major 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 	February 2019	Updated to reflect London
			Medium			February 2020	
HL12	Biological Substance Release from Facility where Pathogens are Handled Deliberately (Health)	A pathogen is inadvertently released from a containment laboratory in an urban area that causes up to 5 fatalities, up to 500 hospital admissions and a further 1,500 non-hospital cases. The agent released is a genetically modified version of a highly pathogenic strain of avian H5N1 influenza resulting in an agent that is slightly less virulent but more transmissible to humans. Prior to modification, the parental virus would be classified as a Hazard Group (HG) 3 pathogen. It is released in an urban area as a result of a failure of containment measures,	1	2	<ul style="list-style-type: none"> Animal Health Act 1981 Specified Animal Pathogens Order 1998 Health and Safety at Work Act 1974 Control of Substances Hazardous to Health Regulations 2000 Management of Health and Safety at Work Regulations 1999 	February 2019	Updated to reflect London

		<p>possibly by a lab worker not following correct procedures.</p> <p>Full symptoms take several days to emerge and the virus is passed on through close contact and through the strain's limited airborne transmission route. The RWCS assumes that the infected worker stays home, self-medicates and is perhaps cared for by a family member as they become more ill, but does not notify their workplace that they may have been infected with H5N1, further delaying identification of the containment loss</p>	Low		<ul style="list-style-type: none"> • Reporting of Injuries Diseases and Dangerous Occurrences Regulations • Carriage of Dangerous Goods (Classification, Packaging and Labelling) Regulations • Genetically Modified Organisms (Contained Use) Regulations 2000 • Regulation, audit and enforcement of legislation by HSE • London Resilience Partnership Plans 	February 2020	
HL14	Local (road) Accident Involving Transport of Fuel / Explosives (London Fire Brigade)	<p>Up to 30 fatalities and up to 20 casualties within vicinity of accident/explosion. Area would require evacuating up to 1km radius depending on substances involved.</p> <p>Potential release of up to 30 tonnes of liquid fuel into local environment, watercourses etc. Large quantities of firefighting media (foam) could impact on environment. Roads and access routes impassable for a time. Emergency access into/out of large populated areas becomes difficult or impossible.</p>	2	3	<ul style="list-style-type: none"> • Carriage of Dangerous Goods by Rail Regulations 1996 • Packaging, Labelling and Carriage of Radioactive Material by Rail Regulations 2002 • Radioactive Material (Road Transport) Regulations 2002 • Air Navigation (Dangerous Goods) Regulations 1994 • Merchant Shipping (Dangerous Goods and Marine Pollutants) Regulations 1990 • Specialist Emergency Services and other responder equipment and resources 	February 2019	Updated to reflect London
			Medium			February 2020	
HL7	Industrial Explosions and Major Fires	Up to 1km around site, causing up to 20 casualties, some of a serious nature. Explosions would cause primarily crush / cuts and bruise-type injuries, as well as burns.	2	2	<ul style="list-style-type: none"> • Legislation: Control of Major Accident Hazards (COMAH) Regulations 1999 	February 2019	Updated to reflect London

	(London Fire Brigade)		Medium		<ul style="list-style-type: none"> Regulatory Reform (Fire Safety) Order 2005 Building design and fire protection systems to prevent or limit the spread of fire Emergency Services and other responder specialist resources 	February 2020	
HL30	Localised Explosion at a Natural Gas Main (London Fire Brigade)	Causing up to 100 fatalities and up to 100 casualties.	1	3	<ul style="list-style-type: none"> Pipeline Safety Regulations 1996 Regulatory and industry measures including provision of maps for excavation Emergency Services and other responder specialist resources 	February 2019	Updated to reflect London
			Medium			February 2020	
H11	Radiation Exposure from Stolen Goods (Environment Agency)	<p>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 in the vicinity of where the source was removed from its shielding may seek medical reassurance at doctor's surgeries and hospitals.</p> <p>Limited environmental contamination but possibly a difficult recovery operation because of high dose rates around the radiation source and restricted access.</p>	1	4	<ul style="list-style-type: none"> Radioactive Substances Act 1993 High Activity Sealed Source Regulations 2005 Arrangements for safe handling and disposal of radioactive sources Radiation of detectors at high risk sites Environment Agency inspections of all major sources Emergency Services specialist resources London Resilience Partnership Plans 	February 2019	Maintained as Camden
			Medium			February 2020	

H14	Major Contamination Incident with Widespread Implications for the Food Chain (Local Authority)	<p>There may be direct animal and consumer health effects arising from this incident. Assume a small number of fatalities (5) and casualties (50), although the public health implications of food incidents vary widely. Additionally, there may be food production / marketing implications, depending on the scale and area affected. Consumer confidence may also be affected leading to lost markets and, where staple products (e.g. bread or milk) are affected, potential panic buying.</p> <p>Could arise from:</p> <ol style="list-style-type: none"> 1. Industrial accident (chemical, microbiological, nuclear) affecting food production area e.g. Chernobyl, Sea Empress oil spill, animal disease 2. Contamination of animal feed e.g. dioxins, BSE 3. Incidents arising from production processes, e.g. adulteration of chilli powder with Sudan I dye or melamine contamination of milk 	2	4	<ul style="list-style-type: none"> • EC Directives and Regulations: <ul style="list-style-type: none"> • Regulation (EC) 852/2004 • Regulation (EC) 853/2004 • Regulation (EC) 854/2004 • Food Safety Act 1990 • Imports monitored • Local Authority Environmental Health Sampling • Public Health England monitoring and surveillance • Food Standards Agency plans 	February 2019	<p>Updated to reflect London</p> <p>Managed in line with statutory framework</p>
			High			February 2020	

Major Industrial Accidents / Major Structural Accidents							
HL22a	Large Building Collapse (Local Authority)	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 a number of persons to be trapped or missing. Localised loss of power and other essential services. Local access routes affected due to road closures.	1	3	<ul style="list-style-type: none"> • Building Control regulations enforced by Local Authorities • Construction, renovation, maintenance and demolition standards and enforcement • Emergency Services and other responders specialist resources • London Resilience Partnership Plans 	February 2019	No Change
			Medium			February 2020	
HL105	Complex Built Environments (Local Authority)	A consequence of a major incident affecting large buildings / complex built environments. Incidents in these facilities have the potential to trigger a complex chain of events that lead to serious consequences for public.	2	3	<ul style="list-style-type: none"> • Health and Safety at Work Act 1974 • Management of Health and Safety at Work Regulations 1999 • Fire and Rescue Services Act 2004 and 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 • London Resilience Partnership Plans 	February 2019	No Change
			Medium			February 2020	
HL22	Building Collapse	Potential for a number of persons to be trapped or missing. Localised loss of power and other essential services. Local access routes affected due to road closures.	5	2	<ul style="list-style-type: none"> • Building Control regulations enforced by Local Authorities 	February 2019	No Change

	(Local Authority)	Up to 5 fatalities and 20 casualties depending on the size and construction of building, and occupation rates. A number of such incidents annually within London.	Medium		<ul style="list-style-type: none"> Construction, renovation, maintenance and demolition standards and enforcement Emergency Services and other responders specialist resources London Resilience Partnership Plans 	February 2020	
HL23	Bridge Collapse (Local Authority)	Roads, access roads and transport infrastructure impassable for considerable length of time. Severe congestion over wide geographical area.	1	3	<ul style="list-style-type: none"> Building Control regulations enforced by Local Authorities Highways Act Regular inspections Height and weight restrictions and signs reduce the likelihood of an incident London Resilience Partnership Plans 	February 2019	Remain same as previous version
		Emergency access into / out of large populated areas severely restricted. Potential for a number of persons to be trapped or missing.	Medium			February 2020	

Major Industrial Accidents / Technical Failures							
H41	Technical Failure of National Electricity Network – Blackstart (London Fire Brigade)	<p>Total blackout for up to 5 days with prolonged disruption for up to 14 days due to loss of the National Grid. Possible loss of life support machines, civil unrest, no alarms, street lighting, gas heating, rail transport, water supplies and mobile telecommunications etc. Backup generators available for limited time for individual businesses and emergency services in some instances.</p> <p>Most of the country reconnected within 3 days, London late on in the process. Peak demand not able to be met after three days.</p>	3	5	<ul style="list-style-type: none"> Testing and maintenance regime National Emergency Plans London Resilience Partnership Plans 	February 2019	Updated to reflect London
			Very High			February 2020	

H45	<p>Technical Failure of Electricity Network due to Operational Error or Bad Weather Causing Damage to the System</p> <p>(London Fire Brigade)</p>	<p>Total shutdown of the electricity supply in Greater London occurring during working week and lasting for 24hours. Damage to distribution overhead lines meant that many customers remained without a supply for several days before repairs could be completed.</p> <p>An event of this kind occurred in October 1987 when severe storms led to the electricity transmission network in the South East being shut down.</p>	3	4	<ul style="list-style-type: none"> • Testing and maintenance regime National Emergency Plans • Mutual aid resources available • London Resilience Partnership Plans 	February 2019	Updated to reflect London
			Very High			February 2020	
H38	<p>Disruption in Upstream Oil and Gas Production</p> <p>(London Fire Brigade)</p>	<p>Catastrophic accident destroying all parts of a critical upstream facility and, in the worst case, taking months or more to restore to normal levels of service. This could potentially result in <11% loss of gas supply to the UK which could impact on power generation if demand were high. As 40% of power is generated by gas fired stations then a reduction in generation might be felt. Downstream oil would not be immediately so adversely affected given an alternative means of supply.</p>	2	4	<ul style="list-style-type: none"> • National Emergency Plan for Fuel • National Blackstart Plan • London Resilience Partnership Plans 	February 2019	Updated to reflect London
			High			February 2020	
H39	<p>Non-availability of piped water supply</p> <p>(London Fire Brigade)</p>	<p>Non-availability of piped water supply to domestic, industrial, commercial and agricultural premises, for a population of up to 350,000 for more than 24 hours and up to 2 weeks. Fire tenders cannot be refilled from fire hydrants within the affected area. Severe logistical difficulties in resupply of bottled water / bowsers even using mutual aid from other water companies. Suspension of hospital and school services. Food industries within the impacted zone may close.</p> <p>Human population given priority over animals and livestock.</p>	2	3	<ul style="list-style-type: none"> • Water Industry Act 1991 • Security and Emergency Measures Direction 1998 • Water companies mutual aid arrangements in place • London Resilience Partnership Plans 	February 2019	Updated to reflect London
			Medium			February 2020	

H40	No notice loss of significant telecommunications infrastructure in a localised fire, flood or gas incident. (Metropolitan Police Service)	Loss of fixed and mobile telecommunications (both voice service and internet access) for up to 100,000 people for up to 72 hours. Mainly household customers would be affected; the impact on businesses would depend on the extent of resilience purchased. Service impacts would vary – for both mobile and landline the geographical area affected should be restricted to that served by the exchange. An outage to landline voice is likely also to affect landline data (and vice versa). A mobile data outage would not necessarily affect voice traffic (and vice versa).	2	2	<ul style="list-style-type: none"> • Civil Contingencies Act 2004 • Telephone provider demand and network capacity management strategies • National Emergency Alert for Telecoms • London Resilience Partnership Plans 	February 2019	Updated to reflect London
			Medium			February 2020	

Major Transport Accidents / Incidents							
HL11	Railway Accident (British Transport Police)	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.	2	3	<ul style="list-style-type: none"> • 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 and 1993 • The Railway Safety Levy Regulations 2006 • Transport Act 2000 • Health and Safety at Work (etc) Act 1974 • The Railway (Safety Case) Regulations 2000 • Improved inspection regimes to detect track defects • Train Protection Warning Systems • ATOC Guidance and Directives • Specialist Emergency Services and other responder resources 	February 2019	No change
			Medium			February 2020	
HL9	Aviation Accident (London Fire Brigade)	Aviation accident causing up to 50 fatalities and up to 250 casualties. Accident involving one commercial aircraft, probably on take-off or landing.	2	3	Stringent controls on aircraft entering UK Airspace including the mandatory use of Aircraft Collision Avoidance systems on heavy aircraft	February 2019	Updated to reflect London

			Medium		<ul style="list-style-type: none"> UK flight separation rules CAA Maintenance and Flight safety standards Airline maintenance regimes London Resilience Partnership Plans 	February 2020	
H16	Aviation Accident Over a Semi-Urban Area (London Fire Brigade)	Collision of two commercial airliners – death of all passengers and crew on aircraft (600 fatalities), up to 50 fatalities and 300 casualties on the ground. Significant debris field but no significant damage to key infrastructure.	1	4	Stringent controls on aircraft entering UK Airspace including the mandatory use of Aircraft Collision Avoidance systems on heavy aircraft <ul style="list-style-type: none"> UK flight separation rules CAA Maintenance and Flight safety standards Airline maintenance regimes London Resilience Partnership Plans 	February 2019	Updated to reflect London
			Medium			February 2020	
HL10	Local Accident on Motorways and Major Trunk Roads (Metropolitan Police Service)	Multiple vehicle incident causing up to 10 fatalities and up to 20 casualties; closure of lanes or carriageways causing major disruption and delays.	4	1	<ul style="list-style-type: none"> Road Traffic Act 1988 Road Vehicle (Construction and Use) Regulations 1986 Traffic Management Act 2004 VOSA patrols to enforce legislation London Resilience Partnership Plans 	February 2019	
			Low			February 2020	
HL9b	Small Aircraft Incident	A light aircraft is an aircraft that has a maximum gross take-off weight of 12,500lb (5,670kg) or less. Many light aircraft are used commercially for passenger and freight transport, sightseeing, photography, and other similar roles as well as	2	2	Stringent controls on aircraft entering UK Airspace including the mandatory use of Aircraft Collision Avoidance systems on heavy aircraft	February 2019	Updated to reflect London 2018

		personal use. This covers an accident involving one commercial aircraft, probably on take-off or landing.	Medium	<ul style="list-style-type: none"> • UK flight separation rules • CAA Maintenance and Flight safety standards • Airline maintenance regimes • London Resilience Partnership Plans 	February 2020	
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Disruptive Industrial Action							
HL42	Loss of Cover Due to Industrial Action by Workers Providing a Service Critical to the Preservation of Life (LRG)	A number of three day strikes with significant support over a two month period affecting a single emergency service	5	3	<ul style="list-style-type: none"> • Police Act (1996) • RCN Code on Industrial Action • Standards of conduct, performance and ethics for nurses and midwives • Alternative emergency cover protocols for the Fire Brigade • Organisational Business Continuity Arrangements 	February 2019	Updated to reflect London 2018
			High			February 2020	
H31	Significant or Perceived Significant Constraint on Fuel Supply at Filling Stations (Metropolitan Police Service)	<p>Actual or threatened significant disruption to the distribution of fuel by road, including as a result of industrial action by fuel tanker drivers.</p> <p>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. High throughput sites such as supermarket filling stations and motorway sites would likely run out of fuel within 24 hours. Oil depots, for example those supplying the emergency services and critical supply chains, would also face reduced deliveries</p>	3	2	<ul style="list-style-type: none"> • Legal requirements re: conduct of industrial disputes • Stocks of contingency fuel to varying degrees • National Emergency Plan for Fuel • London Resilience Partnership Plans 	February 2019	As per BRF guidance 2014, the Local Authority are the lead agency, with MPS owning the risk of any associated public disorder. Updated to reflect London

		<p>and it is likely that they would progressively begin to run short of fuel. Food haulage companies would run out of fuel within approximately 10 days.</p> <p>In the event of panic-buying the impact on forecourts would be significantly more severe. During a ballot for a national strike of tanker drivers, for example, buying peaked just above double usual volumes for a short period in spring 2012. This level of panic-buying would lead to more rapid forecourt stock-outs which might be more severe if increased buying behaviour were to last for 2 days or more. Replenishment of sites following a disruption could take up to 2 weeks.</p>	Medium			February 2020	
H35	<p>Industrial Action by Key Rail or London Underground Workers.</p> <p>(British Transport Police)</p>	Strike action resulting in the shutdown of ¾ of the London Underground or near total shut down of the national rail network (e.g. action by key rail workers) for greater than 3 days. Greater impact if action occurs in a coordinated manner.	3	3	<ul style="list-style-type: none"> • 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 	February 2019	No change
			Medium			February 2020	
H33	National Strike by Prison Officers	Unofficial strike lasting more than 24 hours and resulting in a shortfall in personnel available to operate prisons, resulting in likely indiscipline and disruption to the Criminal Justice	TBC		This risk is yet to be assessed by London Risk Advisory Group. Nationally this is considered a LOW risk.	TBC	Awaiting guidance

Public and Crowd Events							
<p>London is host to a wide number and variety of public events which attract people from all over the world. These events are subject to specific risk management measures through Safety Advisory Groups coordinated by relevant Local Authorities. Whilst events do not constitute an emergency in their own right, they provide the potential for one or more of the risks in the London Risk Register to occur. The London Risk Advisory Group therefore encourages all event organisers to consult the available guidance to help ensure safe events in London.</p> <p>Further guidance: Green Guide to Safety at Sports Grounds and Purple Guide to Health Safety and Welfare at Music and Other Events</p>							
H37	Influx of Nationals not Normally resident in the UK (Local Authority)	Up to 10,000 British Nationals not normally resident in the UK, returning to the UK within a 3-4 week period following conventional war, widespread civil unrest or sustained terrorism campaign against British and other Western Nationals.	4	2	<ul style="list-style-type: none"> Local Authority emergency planning arrangements however response to this risk coordinated through FCO at a national level. Heathrow TravelCare access to specialist services Voluntary sector support to FCO response 	February 2019	No change
			Medium			February 2020	
H57	Public Disorder	Large scale public disorder in multiple sites in a single city occurring concurrently over several days.	3	1	<ul style="list-style-type: none"> Riot Damages Act 1886 Public Order Act 1986 Central command for large scale public events Dedicated police training and response capability 	February 2019	Updated to reflect London 2018
			Medium			February 2020	

Attacks on Crowded Places							
X1	Attacks on Crowded Places	<p>Crowded places remain an attractive target for a terrorist attack.</p> <p>Crowded places by their nature are easily accessible and offer the prospect for an impact beyond the loss of life alone. Attacks are often (but not always) carried out without prior warning.</p>	4	3	<ul style="list-style-type: none"> Work of counter terrorism security advisors to raise awareness and provide training Physical security measures where appropriate Emergency services response plans Emergency services specialist resources 	February 2019	Updated to reflect London 2018
			High			February 2020	

Attacks on Infrastructure							
X2	Attacks on Infrastructure	<p>Many of the impacts which could result from industrial accidents, technical failure or severe weather could also result from a terrorist attack on infrastructure.</p> <p>The risk and impact vary according to the criticality of the infrastructure assets affected. Cyber-attacks are not incorporated in this risk assessment (see subsequent section).</p>	3	3	<ul style="list-style-type: none"> • Business continuity plans for loss of essential services helps minimise disruption • 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. 	February 2019	Updated to reflect London 2018
			High			February 2020	

Attacks on Transport System							
X3	Attacks on Transport System	Conventional attacks on transport systems are judged to be the more likely (however the likelihood of them affecting any one individual is still extremely low). This is supported by evidence from around the world. Attacks on transport can take different forms and result in different levels of impact. Stringent security measures are in place at airports. Most rail and underground systems are more open and therefore attractive potential targets. To date no attack against maritime interest in the UK has been mounted by terrorists.	5	3	<ul style="list-style-type: none"> Regulation and security processes of individual public transport sectors Contingency plans developed by operators in conjunction with responders 	February 2019	No change
			High			February 2020	

Unconventional Attacks (Small Scale and Catastrophic)							
X4	Small Scale Unconventional Attacks	Mass impact terrorist attacks, whilst unlikely, cannot be ruled out. The likelihood of terrorists successfully undertaking an attack against a nuclear or chemical facility or obtaining chemical, biological, radiological (CBR) or nuclear materials remains low, but not negligible. If such attacks were successful, their potential impact on the UK would be severe and significantly greater than a conventional attack. The potential impacts of an incident involving CBR agents will depend on a range of factors including type and quantity of CBRN materials used. This could range from small-scale (assassination or poisoning) to mass-impact (widespread dispersion and contamination) which is reflected in the scores.	3	3	<ul style="list-style-type: none"> Well-developed specialist response capability Access to medical-countermeasures 	February 2019	Updated to reflect London 2018
			High			February 2020	
X5	Catastrophic Unconventional Attack		2	5		February 2019	
			Very High			February 2020	

Cyber Security							
X6	Cyber Security (Infrastructure)	<p>Increasing reliance on cyber space brings new opportunities and new threats. The very openness of the networks presents a vulnerability of compromise or damage to networks from the actions of hackers, criminals or foreign intelligence services.</p> <p>The two assessments cover risks of cyber-attack against infrastructure and cyber-attacks resulting in a loss of data confidentiality. Impacts of both types of cyber-attack could include economic and societal disruption.</p>	2	3	<ul style="list-style-type: none"> National Cyber Security Programme Additional outreach to businesses and public regarding cyber threats and security National Cyber Crime Unit Centre for Protection of National Infrastructure providing security advice 	February 2019	Updated to reflect London 2018
			Medium			February 2020	
X7	Cyber Security (Data Confidentiality)	<p>While terrorists can be expected to continue to favour high-profile physical attacks, the possibility that they might also use cyber space to facilitate or mount an attack is growing.</p>	5	1	<ul style="list-style-type: none"> National Cyber Security Programme Additional outreach to businesses and public regarding cyber threats and security National Cyber Crime Unit Centre for Protection of National Infrastructure providing security advice 	February 2019	
			Low			February 2020	

Borough Risk Register							
B1	Fire in Large Tower Block	Fire in large residential housing block (medium or high rise). Evacuation of up to 100 residential homes required. Up to five fatalities and 20 casualties.	1	2	<ul style="list-style-type: none"> Following recent fire safety work carried out between LFB and Camden Council this risk has been reduced 	February 2019	
			Low			February 2020	
B2	Fire Involving Acetylene Cylinders	Fire in industrial / commercial unit, with oxyacetylene cylinders involved. Evacuation of 200m perimeter for 24 hours. Up to 3 fatalities, 20 casualties.	2	1	<ul style="list-style-type: none"> LFB has made changes to procedures which reduces the impact 	February 2019	
			Low			February 2020	
B3	Major Water Main Burst	Burst in trunk main. Flooding to up to 30 properties and evacuation. Major road closures. Localised loss of water supplies for up to 12 hours.	3	3	<ul style="list-style-type: none"> Due to large numbers of basement properties there is an increased impact on residents 	February 2019	
			Medium			February 2020	

N.B. These assessments are not yet currently supported by the London Risk Advisory Group. They are local assessments based on recommended outcome descriptions from LFB Emergency Planning in 2019.

London Risk Register – Risks That Are NOT Applicable to Camden

Ref ID	Risk Sub-Category	Rationale for Not Applicable to Camden
H4	Fire / Explosion at a fuel distribution or storage site toxic liquids in atmospheric pressure storage tanks.	LFB have none recorded
HL28	Localised fire or explosion at a fuel distribution site or tank storage of flammable or toxic liquids	LFB have 6 registered sites (3 of which are large)
H7	Explosion at a high pressure gas pipeline.	Assessed as not applicable in Camden – none recorded.
HL2	Localised industrial accident involving large toxic release, e.g. from a site storing large quantities of chlorine.	Now incorporated into H4, H9 and HL3
H15	Marine pollution.	Assessed as not applicable as Camden not near the sea.
HL34	Fire, flooding, stranding or collision involving a passenger vessel in or close to UK waters leading to the ship's evacuation or partial evacuation at sea.	Assessed as not applicable as Camden not near the sea.
HL8	Fire, flooding, stranding or collision involving a passenger vessel in or close to UK waters or on inland waterways, leading to the ship's evacuation.	Assessed as applying to boats too big for Regents Canal and therefore not applicable to Camden.
HL16	Local coastal / tidal flooding (affecting more than one region).	Assessed as not applicable to Camden as there are no above ground rivers and below ground rivers are not part of the drainage system. Covered by updated H21
HL17	Local coastal / tidal flooding (in one region)	
HL19	Local fluvial flooding	

Ref ID	Risk Sub-Category	Rationale for Not Applicable to Camden
H1	Fire or explosion at a gas LPG or LNG terminal or flammable gas storage site	Deemed not applicable to Camden as no sites meeting this description. Flammable gas storage covered in HL25 assessment
H10	Radioactive substance release from a nuclear reactor	Deemed not applicable to Camden due to no nuclear reactors
H103	Fire or explosion at a gas LPG or LNG terminal (or associated onshore feedstock pipeline)	The nearest gas terminal to a London LRF is Bacton, Norfolk, therefore this risk is not applicable to Camden
H2	Fire or explosion at an onshore ethylene gas pipeline	Deemed not applicable to Camden due to no ethylene gas pipelines
H3	Fire or explosion at an oil refinery	Deemed not applicable to Camden due to no oil refineries
H8	Very large toxic chemical release	No such facilities within Camden area
H19	Major coastal and tidal flooding affecting more than two UK regions	Assessed as not directly applicable in Camden as it is not near to tidal water albeit mutual aid may be requested by Local Boroughs. HL16 and HL17 covered by updated H19.
H5	Fire or explosion at an onshore fuel pipeline	Not applicable to Camden
H21	Fluvial flooding	Not applicable to Camden

Ref ID	Risk Sub-Category	Rationale for Not Applicable to Camden
H30	Loss of fire cover due to industrial action	Removed from the NRA as the impact was reduced to 0, merged into HL42 assessment
HL24a	Legionnaires Disease	Removed 2013: Advice from Public Health England is that this would be dealt with using normal outbreak arrangements
H24b	Meningococcal Disease	Removed 2013: Advice from Public Health England is that this would be dealt with using normal outbreak arrangements
H25	Non-zoonotic notifiable animal diseases	NRA merged H25 and H26, animal diseases, but LLAG decided to retain the split of zoonotic and non-zoonotic, now captured in HL26a and HL26b
H26	Zoonotic notifiable animal diseases	
H42	Rapid accidental sinking of a passenger vessel in or close to UK waters	This outcome covered in Risk Assessment for HL34 and HL8
H49	Loss of drinking water supplies due to a major accident affecting infrastructure	Removed from the NRA – combined into H39
H6	Fire or explosion at an offshore oil / gas platform	Deemed not applicable to Camden due to no offshore oil or gas platforms
HL25	Fire or explosion at a flammable gas terminal including LPG / LNG storage sites.	Not applicable to Camden
HL1	Fire or explosion at a gas terminal or involving a gas pipeline	Covered by H7 and HL30 assessment

Ref ID	Risk Sub-Category	Rationale for Not Applicable to Camden
HL102	Oak Processionary Moth	Removed 2013: Advice from Public Health England is that there is minimal human health risk and this can therefore be removed from the Camden Risk Register
HL37	Release of significant quantities of hazardous chemicals / materials as a result of a major shipping accident.	Assessed as not applicable in Camden as it is not near to shipping.
HL104	Fire or explosion at a gas LPG or LNG terminal (or associated onshore feedstock pipeline)	The nearest gas terminal to a London LRF is Bacton, Norfolk, therefore this risk is not applicable to Camden
HL13	Maritime accident or deliberate blockage resulting in blockage of access to key port, estuary, maritime route for more than one month	This risk deemed not applicable to Camden by London Risk Advisory Group
HL18	Local / urban flooding fluvial or surface run-off	Covered by updated H21 fluvial flooding risk (which reflects the NRA)
HL20	Flash flooding	Removed 2014: Advice from Environment Agency that Camden doesn't have the geography for this risk
HL27	Localised fire or explosion at an oil refinery	Deemed not applicable to Camden due to no oil refineries
HL31	Limited radioactive substance release from a nuclear accident	Deemed not applicable to Camden due to no nuclear reactors
H4	Fire / explosion at a fuel distribution or storage site toxic liquids in atmospheric pressure storage tanks	Not applicable to Camden

Appendix 1: The 6 Stage Risk Assessment Process

1. Contextualisation

This is provided at the beginning of the document and summarises a range of factors which influence the assessment of both likelihood and impact of risks in Camden

2. Hazard Identification and Allocation for Assessment

Using London-risk as their basis, Camden Borough Resilience Forum identifies the threats and hazards that could give rise to an emergency within Camden in the next 5 years

3. Risk Analysis

Drawing on guidance from Government, other research and local knowledge, the lead assessor from the Borough Resilience Forum considers the likelihood of the risk over the next five-year period

4. Risk Evaluation

The analysis is ratified by the Forum and collated in the Borough Risk Register

5. Risk Treatment

Gaps in capability, compared to the Reasonable Worst Case Scenario risks are assessed periodically by the Borough Resilience Forum. Options for additional risk management are developed

6. Monitoring and Review

Risk assessment is not a static process and is subject to constant review. At a minimum, each risk should be formally reviewed on a 2 year cycle alongside an annual update and re-publication of the Borough Risk Register

Appendix 2: Likelihood and Impact Scoring Scales – Qualitative Measures as Stated in the London Risk Register

Level	Descriptor	Categories of Impact	Description of Impact
1	Limited	Health	<ul style="list-style-type: none"> Limited number of injuries or impact on health
		Social	<ul style="list-style-type: none"> Limited number of persons displaced and insignificant personal support required Limited disruption to community services, including transport services and infrastructure
		Economic	<ul style="list-style-type: none"> Limited impact on local economy
		Environment	<ul style="list-style-type: none"> Limited impact on environment
2	Minor	Health	<ul style="list-style-type: none"> Small number of people affected, no fatalities, and a small number of minor injuries with first aid treatment
		Social	<ul style="list-style-type: none"> Minor damage to properties Minor displacement of a small number of people for <24 hours and minor personal support required Minor localised disruption to community services or infrastructure <24 hours
		Economic	<ul style="list-style-type: none"> Negligible impact on local economy and cost easily absorbed
		Environment	<ul style="list-style-type: none"> Minor impact on environment with no lasting effects
3	Moderate	Health	<ul style="list-style-type: none"> Sufficient number of fatalities with some casualties requiring hospitalisation and medical treatment and activation of Major Incident arrangements, the automated intelligent alert notification system, procedures in one or more hospitals
		Social	<ul style="list-style-type: none"> Damage that is confined to a specific location, or to a number of locations, but requires additional resources Localised displacement of >100 people for 1-3 days
		Economic	<ul style="list-style-type: none"> Limited impact on local economy with some short-term loss of production, with possible additional clean-up costs
		Environment	<ul style="list-style-type: none"> Limited impact on environment with short-term or long-term effects
4	Significant	Health	<ul style="list-style-type: none"> Significant number of people in affected area impacted with multiple fatalities, multiple serious or extensive injuries, significant hospitalisation and activation of Major Incident arrangements across a number of hospitals
		Social	<ul style="list-style-type: none"> Significant damage that requires support for local responders with external resources 100 to 500 people in danger and displaced for longer than 1 week. Local responders require external resources to deliver personal support Significant impact on and possible breakdown of some local community services
		Economic	<ul style="list-style-type: none"> Significant impact on local economy with medium-term loss of production Significant extra clean-up and recovery costs
		Environment	<ul style="list-style-type: none"> Significant impact on environment with medium to long term effects
5	Catastrophic	Health	<ul style="list-style-type: none"> Very large numbers of people in affected area(s) impacted with significant numbers of fatalities, large number of people requiring hospitalisation with serious injuries with longer-term effects
		Social	<ul style="list-style-type: none"> Extensive damage to properties and built environment in affected area requiring major demolition General and widespread displacement of more than 500 people for prolonged duration and extensive personal support required

		<ul style="list-style-type: none"> • Serious damage to infrastructure causing significant disruption to, or loss of, key services for prolonged period. Community unable to function without significant support
	Economic	<ul style="list-style-type: none"> • Serious impact on local and regional economy with some long-term, potentially permanent, loss of production with some structural change • Extensive clean-up and recovery costs
	Environment	<ul style="list-style-type: none"> • Serious long-term impact on environment and / or permanent damage

Explanation of Categories of Impact

Category	Explanation
Health	Encompassing direct health impacts (numbers of people affected, fatalities, injuries, human illness or injury, health damage) and indirect health impacts that arise because of strain on the health service
Social	Encompassing the social consequences of an event, including availability of social welfare provision; disruption of facilities for transport; damage to property; disruption of a supply of money, food, water, energy or fuel; disruption of an electronic or other system of communication; homelessness, evacuation and avoidance behaviour; and public disorder due to anger, fear, and / or lack of trust in the authorities
Economic	Encompassing the net economic cost, including both direct (e.g. loss of goods, buildings, infrastructure) and indirect (e.g. loss of business, increased demand for public services) costs
Environment	Encompassing 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

Note:

Strictly, levels 1 and 2 of the impact scale are likely to fall below the threshold for an emergency. Consequently, there may be no statutory requirement to plan for events that score 1 or 2 on the impact scale. This scale recognises that, to demonstrate a thorough analysis, Category 1 responders will wish to include in their risk assessment certain risks with impacts at these levels.

Likelihood Scoring Scale

Level	Descriptor	Likelihood Over 5 Years	Likelihood Over 5 Years
1	Low	>0.005%	>1 in 20,000 chance
2	Medium Low	>0.05%	>1 in 2,000 chance
3	Medium	>0.5%	>1 in 200 chance
4	Medium High	>5%	>1 in 20 chance
5	High	>50%	>1 in 2 chance

Based on the model likelihood and impact scoring scales published in Annex 4D of “Emergency Preparedness” (HM Government, 2005)

Appendix 3: Risk Rating definitions – Qualitative Measures as Stated in the London Risk Register

Definitions of Nationally Approved Risk Ratings	
Very High (VH) Risk	These are classed as primary or critical risks requiring immediate attention. They may have a high or low 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) Risk	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) Risk	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) Risk	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)

Appendix 4: Full Risk Matrix

Impact	5					
	4					
	3					
	2					
	1					
		Low	Medium Low	Medium	Medium High	High
		Likelihood				