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Merton Borough Resilience Forum

BOROUGH RISK REGISTER

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Document History

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August 2011	1.0	First
October 2011	1.1	Partners scoring added
December 2011	1.2	Final version
April 2013	2.0	2013 Review
May 2014	3.0	Review of Severe Weather risks
May 2015	4.0	Update of assessed risk and inclusion of new risks

Distribution History

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December 2011	Ged Curran, BRF members	1.2
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Notes:

This Borough Risk Register is collectively owned by the Category 1 Responders (as defined by Schedule 1 to the Civil Contingencies Act 2004) within the Merton Borough Resilience Forum area.

London Borough of Merton Multi Agency Resilience Forum Borough Risk Register

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1 LB Merton Multi Agency Resilience Forum Membership

Agency

Category 1 Responders

Local Authority – LB Merton

Metropolitan Police Service

British Transport Police

London Fire Brigade

London Ambulance Service

NHS

Public Health England

Environment Agency

DPH Merton

Merton Clinical Commissioning Group

Category 2 Responders

Utility Companies

Transport Companies

Health & Safety Executive

Existing Non-Category 1 or 2 Central London Resilience Forum Representatives

London Fire & Emergency Planning Authority

Military Liaison

Voluntary Sector

Business Representatives

2 Introduction and Background

The Civil Contingencies Act 2004 ('The Act') places a legal duty on Category 1 responders to produce a Community 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 its ability to perform its 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 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 Community Risk Register (CRR). 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.

This guidance states that the risk assessment process is the first step in the emergency planning process in order to identify the risks applicable to their area and then plan according to the priorities identified. The process is divided into six stages; these are:

1. Contextualisation

- Define the scope of the project (relate to definition of 'emergency' in the Act – see Section 4) and the process to be followed.
- Identify stakeholders.
- Set out risk evaluation criteria and principles.
- Review or describe social, economic, cultural, infrastructural and environmental issues within local context.

2. Hazard review and allocation for assessment

Identification of those non-malicious hazards that present significant risks (ie could give rise to an emergency) in their areas over the next five years. These hazards will be identified on the basis of experience, research or other information. It should then be identified which agency will be the lead assessor to conduct the risk assessment.

- Taking into account centrally provided guidance and drawing on information provided by Category 2 responders, Category 1 responders provisionally identify and describe hazards which might give rise to an emergency in the next five years and those which will not.
- Category 1 responders provisionally agree allocation of lead assessors.
- Borough Resilience Forum (LRF) endorses hazards to be assessed and determines lead assessor responsibility.

3. Risk analysis

- Lead assessor considers the likelihood of hazards' occurrence over five-year period, drawing on generic assessments from central government, other research and knowledge of Category 1 responders.
- Lead assessor suggests the range of potential impacts arising from the hazards as well as any vulnerability surrounding these, and discusses with BRF.
- Lead assessor captures assessment details for each hazard and related reasoning within the individual risk assessment form. This generates a provisional risk statement with likelihood, impact(s) and an overall risk assessment for evaluation by BRF.

4. Risk evaluation

- BRF considers the individual risk assessment forms, compares the results to the risk criteria, and confirms or modifies these assessments as appropriate.
- Agreed assessments are collated and incorporated into BRR.
- Risk matrix is plotted for hazards.
- BRF incorporates into BRR threat statements provided by Central Government within the Local Risk Assessment Guidance, but does not assess likelihood or impact.
- BRF highlights existing capabilities and mitigation plans for the hazards and threats and:
 - considers the acceptability of risks;
 - identifies and recommends options for risk treatment for the LRF; and
 - makes recommendations to the LRF on risk priorities for hazards and threats.
- BRF reviews the BRR and risk matrix in light of the evaluation criteria, and amends as appropriate.
- BRF determines the acceptability of the risks before considering treatment.

5. Risk treatment

- Review the capability challenges posed by the risks against existing capabilities, mitigation plans or known gaps.
- Set risk priorities.
- Evaluate proposed options for additional treatment of risks and agree risk treatment plan.
- Identify officer or organisation to be responsible for implementation of actions.
- Actions communicated to appropriate working groups.

6. Monitoring and Review

Formal review of risks on a rolling three year cycle but reviewed and updated as and when appropriate including in response to annual publications of the Local Risk Assessment Guidance.

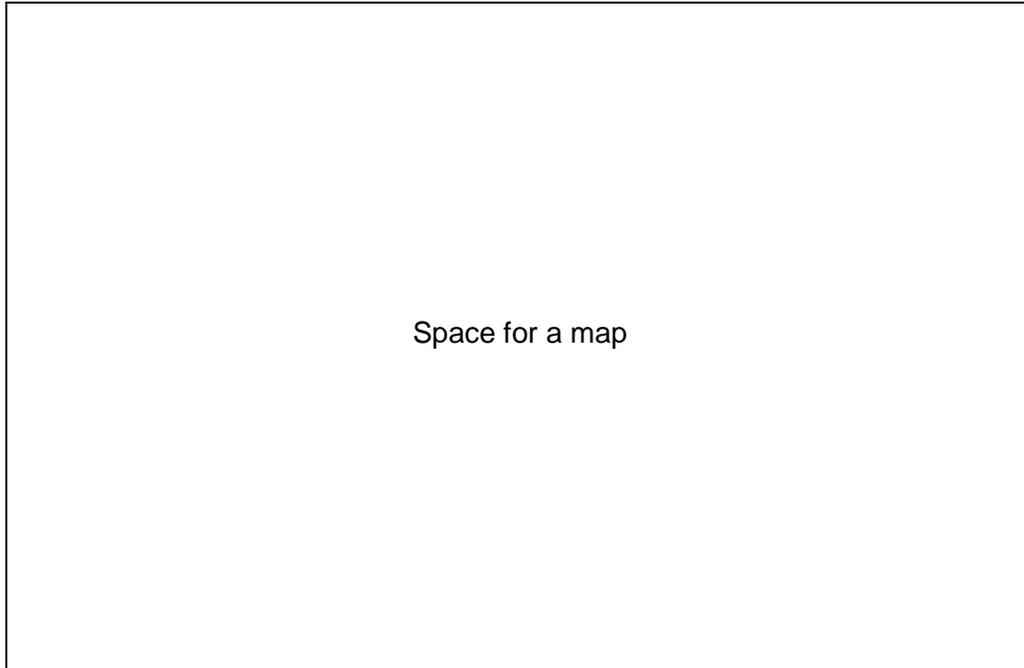
Risk assessment is not a static process and is subject to constant review. The information contained in this BRR will, as a result, be regularly updated.

7. The London Regional Risk Register

The London Regional Risk Register is the public facing version and is available to download from the [London Prepared](#) websites.

3 Contextualisation Statement

The LB Merton is part of the South West Sub-Regional Resilience Forum area, which also comprises the Royal Borough of Kingston upon Thames and the London Boroughs of Richmond, Sutton and Wandsworth.



Social Factors

Over a quarter of the population of Merton is made up of BME groups where there is a large Asian community and within the borough can be found Europe's biggest Amidhaya mosque which can accommodate over 5,000 worshippers. It has been noted that many amongst this population do not have English as their first language, which could prove problematic in the event of an evacuation emergency.

In Merton around 17% of people are over 60.

The standard of living in the SW area is above the London average. In the 2004 Index of Multiple Deprivation nowhere in this LRA was identified as being amongst the top 10% most deprived in the country.

Environmental Factors

Merton has been described as combining urban features with a suburban aspect. Rivers, which present a risk, are the Beverly Brook, the Wandle, and the Graveney. The boroughs in the SW area are highly susceptible to surface water flooding.

Economic Infrastructure

There are about 5320 businesses in Merton the majority of which are SME's, most of which are lacking business continuity plans, which would help them to cope should they experience a disruption to normal

operations. These businesses are more vulnerable should an emergency occur. Merton is very much an important part of London's economic infrastructure. Business Services is an important sector to the borough's economy and this accounts for around 27% in Merton. Wholesale and Retail is another important sector and within the LRA there are many shopping districts some of which have covered malls such as Centre Court in Wimbledon, other significant shopping centres include Colliers Wood and Abbey Mills. Major sporting venues include the All England Lawn Tennis and Croquet club, which hosts the annual Wimbledon Tennis Championships. There are a large number of licensed premises in the LRA mainly concentrated in the Wimbledon area.

Transport Infrastructure

Merton has a very well developed main line rail infrastructure. There are a total of 11 main line stations along lines such as the South West and Thameslink, which connect the borough to the other South West boroughs and to Central London. A large number of commuter trains bound for Waterloo and Victoria pass through Wimbledon. The underground infrastructure is less comprehensive but there are 5 stations in the area, including two termini.

Important roads, which have been highlighted, include the A3, which connects the M25 to Central London, the A24, and the A217. An extensive public bus network is in place across the borough and parts of the Tramlink service run into Wimbledon calling at 8 stops across the borough. There are a significant number of road and rail bridges in the area.

Hazardous Sites

There is one lower tier Control of Major Accident Hazard (COMAH) site within Merton, Reichold in Mitcham, which contains highly flammable chemicals. There are also 2 small BOC sites in Merton. Within Merton there is a Gas Holder at Western Road in Mitcham, which is listed and a significant electricity sub station at Plough Lane, which was the initial site of a major power failure in London. There is another Gas Works at Motspur Park within Kingston at the border with Merton and Sutton.

3 Borough Risk Register

(Note: **Outcome description codes:** 'H' – hazard which will require a national as well as a local response (nationally defined); 'HL' – hazards which would not ordinarily prompt a national response and would usually be dealt with locally (nationally defined); 'L' – hazards which have been added to national outcome descriptions as a result of local considerations (locally defined). 'B' – hazards which are local to the borough and to which borough teams respond. All outcome description codes are followed by a sequential numerical suffix (either nationally defined for 'H' and 'HL' codes or locally defined for 'L' codes.)

Reference Number	Hazard	Outcome Description	Likelihood	Impact	Risk Rating
Category	INDUSTRIAL ACCIDENTS AND ENVIRONMENTAL POLLUTION				
HL7	<p>Industrial explosions and major fires.</p> <p>The largest hazardous materials site in LB Merton is Reichold Uk Ltd situated within the very busy Willow Lane industrial estate. It is designated as a lower tier CoMAH site.</p> <p>Any large incident on this site is likely to become protracted and involved a large evacuation of surrounding premises and residential areas to the north and west. Unless a life risk remains, fire service operations are likely to be defensive and designed to prevent</p>	<p>Outcome Description</p> <p>Up to 1km around site, causing up to 5 fatalities and 200 casualties some of a serious nature. Explosions would cause primarily crush / cuts and bruise-type injuries, as well as burns.</p>	2	4	High

NOT PROTECTIVELY MARKED

Reference Number	Hazard	Outcome Description	Likelihood	Impact	Risk Rating
	further fire spread and protect surrounding buildings from damage- up to five fatalities and up to 200 casualties.. A major consideration would be fire water run off as the site is close to the river Wandle.				
H7 & HL30	H7 - Explosion at a high pressure natural gas pipeline. HL 30 - Localised explosion at a natural gas pipeline.	Outcome Description Local to site causing up to 200 fatalities and up to 200 casualties.	1	4	Med
		Outcome Description Causing up to 100 fatalities and up to 100 casualties.	1	4	Med
HL2 & HL3	HL2 - Localised industrial accident involving large toxic release, e.g. from a site storing large quantities of chlorine. HL3 – Localised industrial accident involving small toxic release	Outcome Description Up to 3km from site causing up to 30 fatalities and up to 250 casualties.	1	4	Med
		Outcome Description Up to 1km around site causing up to 10 fatalities and up to 100 casualties.	1	4	Med
H11	Accidental release of radioactive	Outcome Description Up to 5 fatalities and up to 100 contaminated people requiring medical monitoring. Many	1	3	Med

NOT PROTECTIVELY MARKED

Reference Number	Hazard	Outcome Description	Likelihood	Impact	Risk Rating
	material from incorrectly handled or disposed of sources.	worried people may present at hospitals. Radiation may be spread over several kilometres but most concentration where source is opened.			
H46	Biological substance release during an unrelated work activity or industrial process (e.g. Legionella release due to improperly maintained building environmental control systems).	<p>Outcome Description Up to 10 fatalities and serious injuries or offsite impact resulting in up to 1000 casualties.</p> <p>Variation & Further Information Specifically related to Legionella release from an industrial process. Inadvertent Legionella contaminant of wet cooling systems such as cooling towers and evaporative condensers, and air conditioning systems such as humidifiers and industrial air scrubbers.</p>	1	3	Med
H14	Major contamination incident with widespread implications for the food chain, arising from: <ul style="list-style-type: none"> - Industrial accident (chemical, microbiological, nuclear) affecting food production areas e.g. Chernobyl, <i>Sea Empress</i> oil spill, foot and mouth disease. - Contamination of animal feed e.g. dioxins, BSE. - Incidents arising from production processes, e.g. 	<p>Outcome Description There may be direct animal and consumer health effects arising from this incident. We assume a small number of fatalities (5) and casualties (50), although the public health implications of food incidents vary widely.</p>	1	3	Med

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Reference Number	Hazard	Outcome Description	Likelihood	Impact	Risk Rating
	adulteration of chilli powder with Sudan I dye.				
HL4	Major pollution of controlled waters. River Wandle – there is a greater risk to these waters as the river runs through industrial areas within the borough as well as upstream.	Outcome Description Pollution incident impacting upon controlled 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 point(s), major impact on amenity (i.e. tourism) value, serious impact on human health.	2	2	Med
HL33	Fire on Mitcham Common Mitcham Common is surrounded by roads which would form a natural fire break. The Surrounding area is highly populated and the common is maintained as a natural common with more areas given over to wilderness and wild life. Fire on Wimbledon Common Wimbledon common is crossed by several roads that would form	Outcome Description Fire Mitcham common up to 50 hectares. Evacuation of up to 100 residential homes required. Up to 5 fatalities and 20 casualties. Outcome Description Fire on Wimbledon common up to 50 hectares. Evacuation of properties may be required. Up to 20 casualties.	3 1	3 2	High Low

NOT PROTECTIVELY MARKED

Reference Number	Hazard	Outcome Description	Likelihood	Impact	Risk Rating
	natural fire breaks but is less residential. The common is a more maintained common.				
Category	TRANSPORT ACCIDENTS AND ENVIRONMENTAL POLLUTION				
H16 & HL9	H16 - Aviation accident over a semi-urban area. HL9 - Aviation accident.	Outcome Description Loss of up to two aircraft and passengers, with debris over a semi-urban area. Up to 600 fatalities and up to 300 casualties. Collision of two commercial airliners - death of all passengers and crew on aircraft (600 fatalities), 300 casualties on the ground. No significant damage to key infrastructure.	1	5	Med
		Outcome Description Aviation accident causing up to 50 fatalities and up to 250 casualties. Accident involving one commercial aircraft, probably on take off or landing.	1	5	Med
HL10	Local accident on motorways and major trunk roads. A3, A219, A219, A24 2012 - ORN	Outcome Description Multiple vehicle incident causing up to 10 fatalities and up to 20 casualties (internal injuries, fractures, possible burns); closure of lanes or carriageways causing major disruption and delays.	2	4	High
HL11	Railway Accident. Wimbledon and Mitcham Junction stations are the two busiest in the borough. London Underground	Outcome Description 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. Up to 5 fatalities and 50 casualties. Major disruption and impacts on local traffic.	1	4	Med

NOT PROTECTIVELY MARKED

Reference Number	Hazard	Outcome Description	Likelihood	Impact	Risk Rating
	<p>Limited (LUL-Northern Line/District Lines)</p> <p>Merton is also served with a number of LUL Stations, with a major over-ground depot at Morden. An average tube train holds around a 1000 passengers during peak hours although trains should be relatively empty because the majority of LUL stations within the Borough are at the end of the line so risk to life will be mitigated.</p> <p>Most likely scenarios defective train which could involve passengers being derailed with the possibility of some minor casualties if there was a derailment. Safety on LUL is now paramount but in the unlikely event of a serious fire, LFB operations are likely to become protracted with an incident lasting several days which is likely to have an impact on local transport and traffic with disruption to</p>		1	4	Med

NOT PROTECTIVELY MARKED

Reference Number	Hazard	Outcome Description	Likelihood	Impact	Risk Rating
	business continuity- up to five fatalities and up to 50 casualties.				
HL12	Local accident involving transport of hazardous chemicals.	<p>Outcome Description 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.</p> <p>Variation and Further Information Hazardous chemical traffic is not thought to vary significantly at local levels, so likelihood will be similar throughout. However, a high density of hazardous chemical infrastructure in area may affect likelihood scores.</p>	1	5	Med
HL14	Local (road) accident involving transport of fuel/explosives.	<p>Outcome Description Up to 30 fatalities and up to 20 casualties within vicinity of accident / explosion. Area would require evacuating up to 1 km radius depending on substances involved. Potential release of up to 30 tonnes of liquid fuel into local environment, watercourses etc. Large quantities of fire fighting media (foam) would impact on environment. Roads and access routes impassable for a time. Emergency access into / out of large populated areas difficult or impossible.</p>	1	4	Med
Category	SEVERE WEATHER				
H17	Storms & Gales.	<p>Outcome Description Storm force winds affecting most of the country for at least 6 hours. Most inland, lowland areas experience mean speeds in excess of 55 mph with gusts in excess of 85 mph. Consequent damage to infrastructure (e.g. telecommunications, power, transport).</p>	2	4	High
H18	Low temperatures and heavy snow.	<p>Outcome Description Snow lying over most of the country for at least one month. Most inland areas experience some snow falls in excess of 30cm, some drifts in excess of 1m, and a period of at least 7 consecutive days with daily mean temperatures below -3 degrees centigrade.</p>	2	3	High
H48	Heat Wave	<p>Outcome Description Daily maximum temperatures above 32C and minimum temperatures above 15C over most of the area for at least five consecutive days.</p>	1	3	Med
H50	Drought.	<p>Outcome Description</p>			

NOT PROTECTIVELY MARKED

Reference Number	Hazard	Outcome Description	Likelihood	Impact	Risk Rating
		Periodic water supply interruptions affecting 385 000 businesses in London for up to 10 months. Emergency Drought Orders in place authorising rota cuts in supply according to needs of priority users as directed by Secretary of State. The 2.24 million households in London would not be subjected to supply interruptions.	1	3	Low
	HL18 - Local / Urban flooding (fluvial or surface run-off).	Outcome Description A sustained period of heavy rainfall extending over two weeks, perhaps combined with snow melt, resulting in steadily rising river levels over a region. Localised flooding of more than 1,000 and less than 10,000 properties. There would be a major impact on minor roads and some A roads and trunk roads impassable for a time. Some main rail lines would be closed (where bridges are deemed unsafe for example). Some minor rail lines and stations would be closed. Most waterways would be closed to traffic because of strong currents and high water levels. Many of the assumptions are the same for a major regional fluvial flood as they would be for a major national incident	2	4	High
	HL19 – Local fluvial flooding	Outcome Description A sustained period of heavy rainfall extending over two weeks, perhaps combined with snow melt, resulting in steadily rising river levels over a region. Localised flooding of more than 100 and less than 1,000 properties. There would be some impact on minor roads and some A roads and trunk roads impassable for a time. Some main rail lines would be closed (where bridges are deemed unsafe for example). Some minor rail lines and stations would be closed. Most waterways would be closed to traffic because of strong currents and high water levels.	2	4	High
	HL20 - Localised, extremely hazardous flash flooding.	Outcome Description Heavy localised rainfall in steep valley catchments leading to flash flooding. Likely that no flood defences in place. Possibility no flood warning service available / suddenness of events means timely flood warnings not possible. Flooding of up to 200 properties.	1	4	Med
H54	Disruption to aviation as a consequence of volcanic ash	Outcome Description			
Category	STRUCTURAL				
HL21	Land movement (i.e. caused by tremors or landslides).	Outcome Description Roads and access routes impassable for a time. Emergency access into / out of large populated areas difficult or impossible; severe congestion over wide geographical area. Loss of power and other essential services over wide geographical area. Potential for a	1	3	Med

NOT PROTECTIVELY MARKED

Reference Number	Hazard	Outcome Description	Likelihood	Impact	Risk Rating
		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.			
HL22 & HL22a	Building Collapse.	<p>Outcome Description Collapse of low rise building, or part thereof. 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. Up to 10 fatalities and 20 casualties depending on the size and construction of building, and occupation rates.</p> <p>Outcome Description 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.</p>	1	3	Med
	Large Building Collapse.		1	4	Med
HL23	Bridge Collapse.	<p>Outcome Description Roads, access roads and transport infrastructure impassable for considerable length of time. Severe congestion over wide geographical area. Emergency access into / out of large populated areas severely restricted. Potential for a number of persons to be trapped or missing.</p>	1	4	Med
HL105	Complex Built Environments.	<p>Outcome Description 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 safety.</p>	1	4	Med
Category	ANIMAL HEALTH				
H25	Non-zoonotic Notifiable animal diseases (e.g. foot and mouth disease (FMD), classical swine fever, blue tongue and Newcastle disease of birds).	<p>Outcome Description Slaughter of up to 2 million affected and exposed livestock plus the possibility of a significant number of animals culled for welfare reasons.</p>			See guidance notes

NOT PROTECTIVELY MARKED

Reference Number	Hazard	Outcome Description	Likelihood	Impact	Risk Rating
H26	Zoonotic Notifiable animal diseases (e.g. Highly Pathogenic Avian Influenza (HPAI), rabies and West Nile virus).	Outcome Description Culling of up to 30 million poultry (HPAI) plus the possibility of wildlife being affected (Rabies). For West Nile Virus spread by viable vectors in the UK the slaughter of 20-1000 horses is a possibility.			Medium
Category	<i>HUMAN HEALTH</i>				
H22	Influenza Type Disease (Epidemic).	Outcome Description A serious epidemic of much greater severity than the usual seasonal flu. Weekly GP consultations for new episodes of flu-like illness likely to exceed 400 per 100,000 of population at the peak (compared with a peak of around 200 per 100,000 population per week in an average year).	2	3	High
H23	Influenza Type Disease (Pandemic).	Outcome Description Each pandemic is different and the nature of the virus and its impacts cannot be known in advance. Previous pandemics have led to markedly different outcomes. Based on understanding of previous pandemics, a pandemic is likely to occur in one or more waves, possibly weeks or months apart. Each wave may last around 15 weeks. Up to half the population could be affected. High number of cases and consultations with healthcare providers threatening to overwhelm health and other services. All ages may be affected, but until the virus emerges we cannot know which groups will be most at risk.	1	4	Med
H24	Emerging infectious diseases.	Outcome Description Severe Acute Respiratory Syndrome (SARS) in an acute, severe respiratory illness caused by SARS coronavirus (SARS-CoV).	1	3	Med
HL24a	Legionnaires Disease.	Outcome Description A point source outbreak of Legionnaires' disease, a serious form of atypical pneumonia caused by poorly maintained water systems.	1	3	Med
HL102	Oak Processionary Moth (OPM).	Outcome Description Infestation of Oak Processionary Moth (OPM) caterpillars to plague proportions causing severe defoliation of trees and increased numbers of people requiring medical treatment.	1	2	Low
Category	<i>INDUSTRIAL ACTION</i>				

NOT PROTECTIVELY MARKED

Reference Number	Hazard	Outcome Description	Likelihood	Impact	Risk Rating
HL42 & H30	HL42 - Loss of cover due to industrial action by workers providing a service critical to the preservation of life (such as emergency service workers). H30 - Emergency services: loss of emergency fire and rescue cover because of industrial action.	Outcome Description A number of three day strikes with significant support over a two month period affecting a single emergency service.	2	2	Med
		Outcome Description A series of strikes by fire fighters takes place, spread over a period of two months, perhaps lasting up to 24 hours each.	2	2	Med
H31	Significant or perceived significant constraint on the supply of fuel at filling stations e.g. industrial action by contract drivers for fuel, or effective fuel blockades at key refineries/terminals by protesters, due to the price of fuel.	Outcome Description Filling stations, depending on their locations, would start to run dry between 24 - 48 hours. Panic buying would exacerbate the situation. Replenishment of sites would take between 3 - 10 days depending on location.	1	3	Med
H35	Industrial action by key rail or London Underground workers.	Outcome Description Strike action resulting in the total shut down of either London Underground or the rail network on a national scale (e.g. action by key rail workers, e.g. infrastructure workers such as signallers) for > 3 days. Greater impact if action occurs in a co-ordinated manner.	2	2	Med
Category	INTERNATIONAL EVENTS				

NOT PROTECTIVELY MARKED

Reference Number	Hazard	Outcome Description	Likelihood	Impact	Risk Rating
H37	International security incident resulting in an influx of British Nationals who are not normally resident in the UK.	Outcome Description Up to 10,000 British nationals deciding to return to UK to a single region within a 4-6 week period following a serious regional conflict, a sustained terrorism campaign against UK and other Western nationals, or an uncontrolled outbreak of pandemic flu.	1	3	Med
Category	INDUSTIAL TECHNICAL FAILURE				
H38	Technical failure of a critical upstream oil/gas facility, gas import pipeline terminal, or Liquefied Natural Gas (LNG) import reception facility leading to a disruption in upstream oil and gas production.	Outcome Description Catastrophic accident destroying all or parts of an offshore facility and taking 6 months to restore normal levels of service. A fire or explosion on board a significant offshore installation could result in a 5 - 30 per cent loss of gas supply to UK which, at the top end, would impact on power generation. As 40 per cent of power is generated by gas fired stations then a reduction in generation might be felt. Downstream oil would not be so adversely affected given alternative means of supply.	1	4	Med
H39 & H49	H39 - Failure of water infrastructure or accidental contamination with a non-toxic contaminant. H49 - Loss of drinking water supplies due to a major incident affecting infrastructure.	Outcome Description Loss of or non-availability for drinking, of the piped water supply, for up to 50,000 people, for more than 24 hours and up to 3 days. Outcome Description Loss of or non-availability for drinking, of the piped water supply, for a population of up to 200,000 for more than 24 hours and up to one week.	1 1	3 3	Med Med

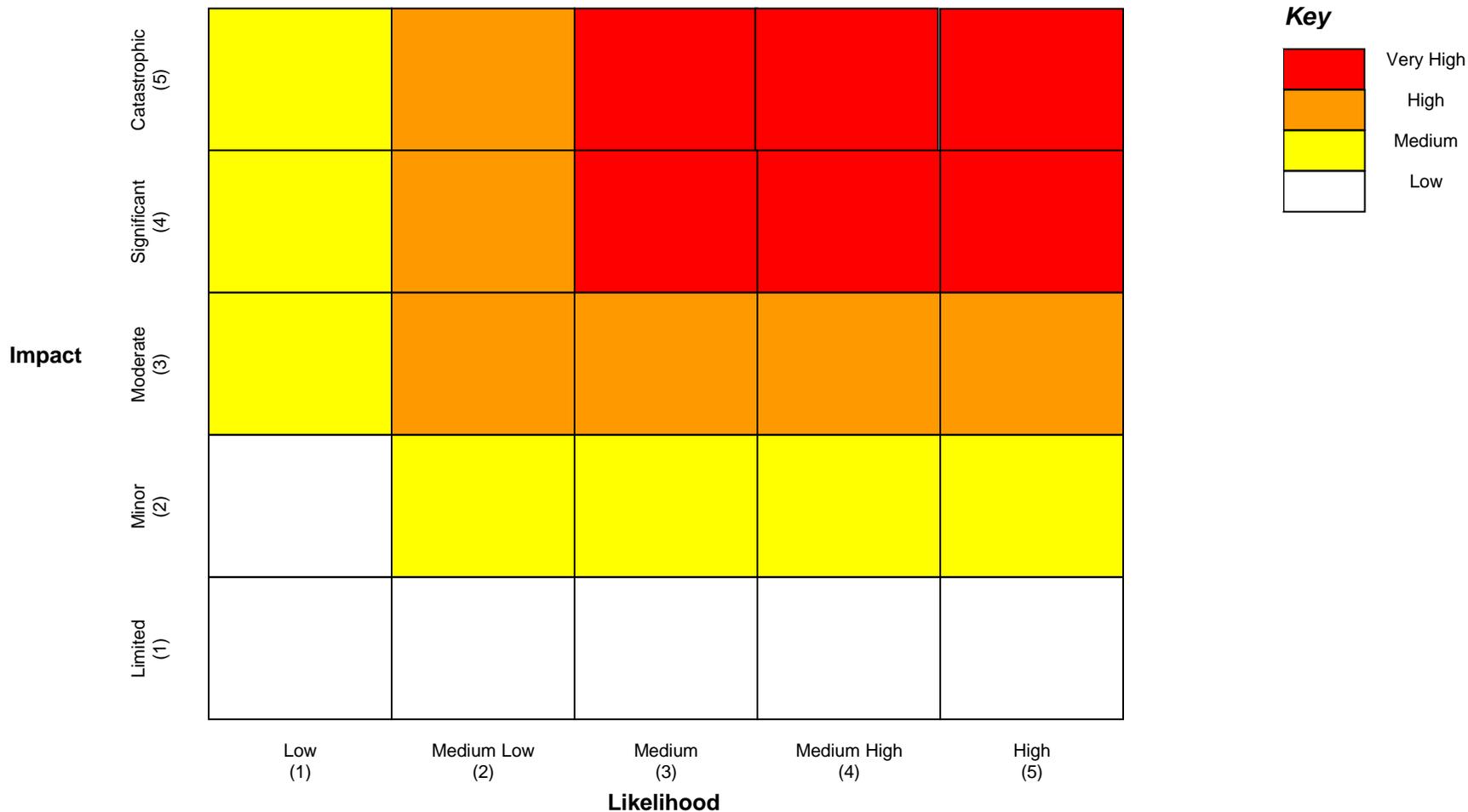
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Reference Number	Hazard	Outcome Description	Likelihood	Impact	Risk Rating
H40	No notice loss of significant telecommunications infrastructure in a localised fire, flood or gas incident.	Outcome Description Loss of service to up to 100,000 people for up to 72 hours.	1	3	Med
H41 & H45	H41 - Technical failure of national electricity network (Blackstart).	Outcome Description Following a total shutdown of the UK electricity supply system, continuous supplies of electricity should become available to all customers during the period 48 hours - 72 hours, prior to which supplies will be restored in stages but subject to intermittency. Outcome Description Total shutdown of the electricity supply over an entire region occurring during working hours and lasting for 24hours.	1	4	Med
	H45 - Technical failure of regional electricity network.		1	4	Med
H43	Telecommunication infrastructure - human error.	Outcome Description Widespread loss of telecommunications (including public land line and mobile networks) at a regional level for up to 5 days.	1	3	Med
B1	Fire in large tower block.	Outcome Description 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	3	Med
B2	Fire involving acetylene cylinders.	Outcome Description Fire in industrial/commercial unit, with oxyacetylene cylinders involved. Evacuation of 200m perimeter for 24 hours. Up to 3 fatalities, 20 casualties.	1	3	Med
B3	Major water main burst.	Outcome description 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.	2	2	Med
Category	OTHER LOCAL RISKS				
	RideLondon	Outcome description Disruption to vehicle and pedestrian traffic caused during large public cycle race. Isolation of enclosed area during race period. Major disruption but with plans to mitigate in place.	5	1	Low
H44	Major reservoir	Outcome description	1	5	

NOT PROTECTIVELY MARKED

Reference Number	Hazard	Outcome Description	Likelihood	Impact	Risk Rating
	dam failure/collapse	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, up to 1000 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.			

Summary of Risk Ratings



See Appendix 2 for an explanation of the matrix and risk categories

Appendix 1

Likelihood and Impact Scoring Scales

Impact scoring scale – qualitative measures

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 MAJAX, the automated intelligent alert notification system, procedures in one or more hospitals.

NOT PROTECTIVELY MARKED

		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 MAJAX procedures 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. • 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 (<i>eg</i> loss of goods, buildings, infrastructure) and indirect (<i>eg</i> 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:

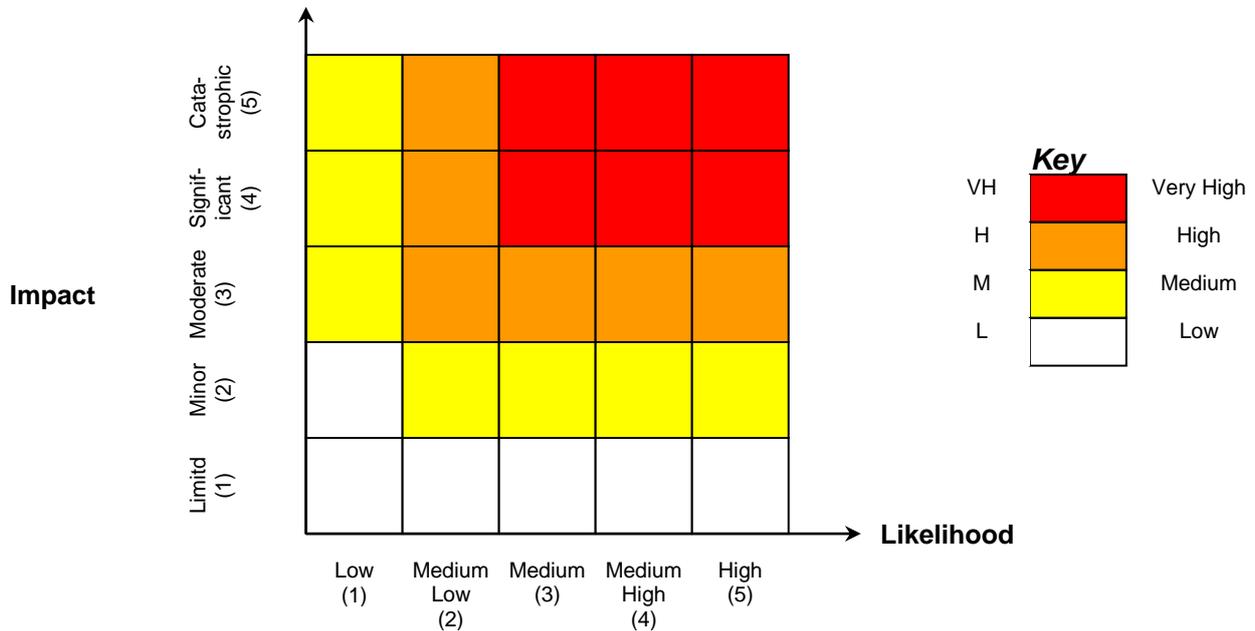
Strictly, levels 1 and 2 of the impact scale are likely to fall below the threshold for an emergency. Consequently, there may be no statutory requirement to plan for events that score 1 or 2 on the impact scale. This scale recognises that, to demonstrate a thorough analysis, Category 1 responders will 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 2
Risk Rating Matrix



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)