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**Version 1.11  
January 2010**

**South East London  
Local Resilience Forum**

**COMMUNITY RISK  
REGISTER**

**Maintained in accordance with Regulation 15(1) of The Civil  
Contingencies Act 2004 (Contingency Planning) Regulations 2005.**

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## Document History

Review Date	Version	Summary of Changes
Feb 06	1.0	N/A
June 07	1.1	Administration Review. Addition of new Hazards and amendment of revised Hazards identified within the 2006 Local risk Assessment Guidance. Revision of risk scores.
Oct 07	1.2	Administration Review. Addition of new Hazards and amendment of revised Hazards identified within the 2006 Local risk Assessment Guidance. Revision of risk scores as endorsed by the South East LRF on 22 May 2007.
Feb 08	1.3	Revision of risk scoring as endorsed by the South East LRF on 28 <sup>th</sup> September and 17 <sup>th</sup> December 2007.
May 08	1.4	Minor editing and revision of risk scoring as endorsed by the South East LRF on 18 <sup>th</sup> March 2008.
July 08	1.5	Minor editing and revision of risk scoring as endorsed by the South East LRF on 19 <sup>th</sup> June 2008.
Sept 08	1.6	H103 & HL104 replace HL1, H50 replaces HL101 and H49 added. Minor editing and revision of risk scoring as endorsed by the South East LRF 16 <sup>th</sup> September 2008.
Jan 09	1.7	HL105 added. Minor editing and revision of risk scoring as endorsed by the South East LRF 1 <sup>st</sup> December 2008.
Apr 09	1.8	Inclusion of revised risk matrix, amendments and revisions to Hazards identified within the 2008 Local Risk Assessment Guidance. Revision of risk scores as endorsed by the South East LRF 17 <sup>th</sup> March 2009.
Jul 09	1.9	Revision of risk scores as endorsed by the South East LRF 16 <sup>th</sup> June 2009.
Oct 09	1.10	Administration review
Jan 10	1.11	Revision of scores as endorsed by the South East LRF 1 <sup>st</sup> December 2010.

## Distribution History

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### Notes:

This Community Risk Register is collectively owned by the Category 1 Responders (as defined by Schedule 1 to the Civil Contingencies Act 2004) within the South East London Local Resilience Forum area.

This is a controlled document and is designed for back-to-back printing in accordance with the principles outlined in the Government's "Protective Marking System".

## South East London Local Resilience Forum Community Risk Register

This Community Risk Register (CRR) is maintained in accordance with Regulation 15(1) of The Civil Contingencies Act 2004 (Contingency Planning) Regulations 2005.

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**Exclusion Notes**

1	The main text in Section 3 of the Community Risk Register only covers non-malicious events (ie hazards) rather than threats (ie terrorist incidents). This does not mean that the South East London Local Resilience Forum is not covering threats within its risk assessment work, but given the sensitivity of the information supporting these risk assessments and the potential use by adversaries, specific details will not be made available in the public version of this register. Threat scenarios that are being considered are included in Annex 1 to Section 3 and include, for example: conventional attacks using explosives, chemical/biological/radiological attacks and electronic attacks (eg affecting utilities and communications).
2	Consequently, the content of Annex 1 to Section 3 of the Community Risk Register is subject to a RESTRICTED classification in accordance with the Government's protective marking system and is withheld from general publication under Regulation 51 of The Civil Contingencies Act 2004 (Contingency Planning) Regulations 2005.
3	Controlled copies issued to Category 1 Responders within the South East London Local Resilience Forum area (see Section 1) receive a complete copy of the South East London Community Risk Register (including Annex 1 to Section 3) which is subject to the RESTRICTED classification.

## 1 South East London Local Resilience Forum Membership

	Agency
	<b>Category 1 Responders</b>
1	Local Authorities – London Borough of Greenwich (representing LB Bexley, LB Bromley, LB Croydon, LB Lewisham)
2	Metropolitan Police Service
3	British transport Police
4	London Fire Brigade
5	London Ambulance Service
6	HM Coastguard
7	NHS (Strategic Health Authority representing Primary Care Trusts, Acute and Foundation Trusts)
8	Health Protection Agency
9	Environment Agency
10	Bexley Borough Forum
11	Bromley Borough Forum
12	Croydon Borough Forum
13	Greenwich Borough Forum
14	Lewisham Borough Forum
	<b>Category 2 Responders</b>
15	Utility Companies
16	Transport Companies
17	Health & Safety Executive
	<b>Existing Non-Category 1 or 2 South East London Local Resilience Forum Representatives</b>
18	London Resilience Team
29	British Army
20	Royal Air Force
21	Voluntary Sector
	<b>Secretariat</b>
22	London Fire & Emergency Planning Authority

## 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.

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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.
- Local Resilience Forum (LRF) endorses hazards to be assessed and determines lead assessor responsibility.
- Risk Assessment Working Group (RAWG) convenes and reviews hazards identified at LRF for confirmation or possible CRR amendment.
- RAWG confirms appropriateness of lead allocation and identifies any other agencies with key roles.
- RAWG agrees a project plan with deadlines for assessing individual or groups of hazards.

### 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 vulnerabilities surrounding these, and discusses with RAWG.
- 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 RAWG.

### 4. Risk evaluation

- RAWG 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 CRR.
- Risk matrix is plotted for hazards.

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- RAWG incorporates into CRR threat statements provided by central government within the local risk assessment guidance (LRAG), but does not assess likelihood or impact.
- RAWG 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.
- LRF reviews the CRR and risk matrix in light of the evaluation criteria, and amends as appropriate.
- LRF 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.

#### South East London Local Resilience Forum

The South East London Local Resilience Forum (LRF) includes representatives of all Category 1 and Category 2 responders<sup>1</sup> within the South East London area (see Appendix 1). It also includes representatives from agencies that are not included in the Civil Contingencies Act 2004 but are considered essential local planning partners (eg the military and the voluntary sector).

In relation to Section 3 of this CRR, the inclusion of the hazard or the particular scenario (ie the outcome description) does not mean that the LRF believes the risk will materialise, or that if it were to do so that it would be at that scale. The risk scenarios are rather reasonable worst case assumptions upon which our risk assessments are based.

The likelihood assessments relate to the risk occurring over a five-year period at the magnitude reflected within the outcome description. The magnitude is based on an assessment of a reasonable worst case scenario.

As part of the risk assessment process, the South East London LRF has been considering the likelihood and impact of a range of hazards occurring. This work – a statutory duty under the Civil Contingencies Act 2004 – is an ongoing process and examples are provided for all of the hazards to illustrate the individual assessment work that has been completed so far. Further details are available from LFB - Emergency Planning Department – see first page for contact details.

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<sup>1</sup> As defined by Schedule 1 of the Civil Contingencies Act 2004 (c.36).

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

### 3 Contextualisation Statement

The South East London Local Resilience Area (LRA) comprises the Boroughs of Greenwich, Bexley, Bromley, Croydon and Lewisham.



#### 1. Social Factors

The SE LRA has a total population approaching 1.35 million and incorporates both densely populated urban areas and areas where the population is much more dispersed. Bromley, covering 58 sq miles, is London's largest borough and with a population of around 295,500 is the second least densely populated in the capital. Bexley is one of the least densely populated boroughs and within its 25 sq miles has over 100 parks and open spaces. Croydon and Greenwich are somewhat more urbanised while Lewisham is both the smallest borough in the SE LRF area at 13.6 sq miles and the most densely populated.

Although many ethnic minority groups are represented within the area as a whole, the distribution of these groups is uneven. While in Bexley and Bromley only around 8% of the population is from ethnic minority groups, around 36% of the population of Croydon is ethnically diverse. The largest individual ethnically diverse group in Croydon is its black Caribbean community but it also has a large percentage of people of Asian ethnicity. Lewisham's black Caribbean community is the largest constituent of a 33% ethnically diverse population. In Greenwich over 100 different languages are spoken by a population which is 23% diverse.

In terms of the age of the population, Bexley and Bromley are relatively senior with around one fifth of their residents aged over 60. The other three boroughs which have a relatively young population with a higher percentage of residents aged under 20. In Croydon 27% of the population is aged 19 years or less.

The standard of living in Bromley is amongst the very best in the Capital and the borough is ranked as the third least deprived by the 2004 Index of Multiple deprivation published by the ODPM. Bexley is also ranked in the top 10 least deprived boroughs. Croydon has three areas listed in the 10% most deprived in London

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and Lewisham is the 12<sup>th</sup> most deprived borough with some distinct areas in acute need. Greenwich is the 10<sup>th</sup> most deprived borough with 24 areas in the most deprived 10%.

### 2. Environmental Factors

Greenwich and Bexley are the two boroughs within the LRA which have the potential to receive tidal flooding from the Thames. Thamesmead is an area of reclaimed marshland spanning Greenwich and Bexley and presents a major tidal flood risk from the Thames. The area contains over 21,000 commercial, community and residential properties and covers an area of 20 sq km. Although Thames tidal defences are designed to protect against a 1:1000 year return period event for the year 2030, most of the ground level behind the defence at Thamesmead falls away to create floodplain. Tidal flooding would have a serious impact in this area should it occur.

Bexley is also at risk of fluvial flooding from the Rivers Cray and Shuttle. Eltham is susceptible to localised fluvial flooding from the River Quaggy. There is a risk of fluvial flooding from the Rivers Bourne at Kenley in Croydon but recent work on the defences means the likely impact of fluvial flooding is minimal.

There are eight designated Sites of Special Scientific Interest in the SE London area:

- Lesnes Abbey
- Wansunt Pit
- Crofton Woods
- Downe Bank and High Elms
- Keston and Heyes Common
- Elmstead Pits
- Ruxley Gravel Pits
- Saltbox Hill

While Lesnes Abbey and Wansunt Pit are situated in Bexley, the other six SSSI listed above are in Bromley.

### 3. Transport Infrastructure

The over ground rail network is a prominent part of the SE's transport infrastructure (Croydon alone has twenty four stations) with Network South East and other lines such as Greenwich, Bexleyheath and the Sidcup helping to connect the five boroughs with each other and with Greater and Central London. The Eurostar passes through Bromley on its way to the South East coast while many other well developed mainline routes help provide an extensive commuter service to and from Kent. Though the underground does not run extensively through the area, it has been highlighted as a relevant part of the transport infrastructure in Greenwich and Lewisham.

Important roads which serve the area include the A2 which is six lanes in places, the A20, the A21 which runs through the heart of Bromley, the A22 and the A23 which runs the entire length of Croydon connecting it to Central London.

Other features include the Tramlink system which is especially important to Croydon and stretches into Bromley. The Docklands Light Railway runs through Greenwich and Lewisham and has stations at Cutty Sark, Greenwich, Greenwich, Deptford, Elverston Road and Lewisham where the train terminates to link with other transport links. Also in Greenwich, the presence of river traffic with the borough operating the Woolwich ferry, connecting Woolwich to Woolwich North, on behalf of Transport for London.

Though air transport is not a major feature in the area, Biggin Hill Airport can be found in the south of Bromley and Greenwich is less than a mile from the flight path of the City of London Airport.

#### **4. Economic Infrastructure**

The economy of the area consists mainly of light industry and enterprises in the Health and Education and the Wholesale and retail sectors. There are around 9,000 businesses based in Croydon with numerous office complex developments which incorporate around 60 major company head offices. Croydon has a number of shopping centres including the Whitgift centre and a busy social scene with up to 20,000 people visiting the borough's clubs, pubs and restaurants on the busiest nights. Bexley has the second largest manufacturing area in the capital at Belvedere and there are over 8,000 businesses based in Bromley. Greenwich and Lewisham have relatively smaller economies and in both boroughs Health and Education is a key sector contributing to at least 25% of their total economic output.

#### **5. Hazardous Sites**

The three top-tier Control of Major Accident Hazard (COMAH) sites located within the area are:

- Nufarm UK Ltd Chemical Processing Site  
(LB Bexley)
- Southern Gas Networks Biggin Hill  
(LB Bromley)
- Southern Gas Networks Croydon Holder Station  
(LB Croydon)

In addition, running through Bexley are two Major Accident Pipelines carrying gas at high pressure and in Croydon a number of vulnerable points have been identified along pipeline routes close to installation areas.

In Croydon there is a telecommunications mast at Beaulah Hill, a number of reservoirs and the offices of several multi-national companies. In Bexley, at certain sites, several unexploded bombs have been unearthed in recent years and the Danson Lake/Dam sits close to Danson Road and a residential area to the east.

#### **6. Other Factors**

It should be noted that Greenwich is a major tourist destination. Central Greenwich and the park is designated a World Heritage Site, often referred to as Maritime Greenwich, attracting around 8 million visitors per year with sites such as the Maritime museum.

Also situated in Greenwich are the Blackwall tunnel, a section of the Thames Tidal Flood barrier and Belmarsh high security prison.

Other factors to consider involve the extensive changes which will occur in the South East LRA over the coming years. Of particular relevance are the preparations for the Olympic Games 2012 will mean a great deal of development including the construction of an Olympic stadium and investment in the area's transport infrastructure.

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### 3 Community 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). 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.)

Risk ref.	Hazard category	Hazard sub-category	Outcome Description/ Variation and Further Information	Likelihood	Impact	Risk rating	Lead responsibility
<b>INDUSTRIAL ACCIDENTS AND ENVIRONMENTAL POLLUTION</b>							
HL25	Industrial Accident & Environmental Pollution	Fire or explosion at a flammable gas including LPG/LNG storage sites.	<p><b>Outcome Description</b> Up to 1km around site, causing up to 50 fatalities and 150 casualties.</p> <p><b>Variation &amp; Further Information</b> Event at a storage site could last for days if the explosion damaged control equipment. Impact on environment, including persistent/widespread impact on air quality.</p>	Low (1)	Moderate (3)	Medium	LFB
H2	Industrial Accident & Environmental Pollution	Fire or explosion at an onshore ethylene gas pipeline.	N/A	N/A	N/A	N/A	N/A
HL26	Industrial Accident & Environmental Pollution	Localised fire or explosion at an onshore ethylene gas pipeline	N/A	N/A	N/A	N/A	N/A

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Risk ref.	Hazard category	Hazard sub-category	Outcome Description/ Variation and Further Information	Likelihood	Impact	Risk rating	Lead responsibility
H3	Industrial Accident & Environmental Pollution	Fire or explosion at an oil refinery	N/A	N/A	N/A	N/A	N/A
HL27	Industrial Accident & Environmental Pollution	Localised fire or explosion at an oil refinery	N/A	N/A	N/A	N/A	N/A
H4	Industrial Accident & Environmental Pollution	Fire or explosion at a fuel distribution site or a site storing flammable and/or toxic liquids in atmospheric pressure storage tanks.	Up to 3km around site causing up to 150 fatalities and 2000 casualties. <b>Variation &amp; Further Information</b> A large industrial complex or fuel storage site near to a populated (i.e. Urban) area. Impact on environment, including persistent/widespread impact on air quality. Plant of this nature is presumed to be more or less evenly distributed across the country.	Low (1)	Catastrophic (5)	Medium	LFB
HL28	Industrial Accident & Environmental Pollution	Localised fire or explosion at a fuel distribution site or tank storage of flammable and/or toxic liquids.	<b>Outcome Description</b> Up to 1km around the site, causing up to 15 fatalities and 200 casualties. <b>Variation and Further Information</b> Impact on environment, including persistent/widespread impact on air quality.	Low (1)	Moderate (3)	Medium	LFB
H5	Industrial Accident & Environmental Pollution	Fire or explosion at an onshore fuel pipeline	N/A	N/A	N/A	N/A	N/A

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Risk ref.	Hazard category	Hazard sub-category	Outcome Description/ Variation and Further Information	Likelihood	Impact	Risk rating	Lead responsibility
H6	Industrial Accident & Environmental Pollution	Fire or explosion at an offshore oil/gas platform	N/A	N/A	N/A	N/A	N/A
H7	Industrial Accident & Environmental Pollution	Explosion at a high pressure natural gas pipeline.	<p><b>Outcome Description</b> Local to site causing up to 200 fatalities and up to 200 casualties.</p> <p><b>Variation and Further Information</b> Risk is based on the release point close to a populated (i.e. urban) area. Impact on environment, including persistent/widespread impact on air quality.</p> <p>Plant of this nature is assumed to be more or less evenly distributed across the country, although there may be 'clustering' in some coastal and industrial areas.</p>	Low (1)	Moderate (3)	Medium	LFB
HL30	Industrial Accident & Environmental Pollution	Localised explosion at a natural gas pipeline.	<p><b>Outcome Description</b> Causing up to 100 fatalities and up to 100 casualties</p> <p><b>Variation and Further Information</b> Risk is based on the release point close to a populated (i.e. urban) area. Impact on environment, including persistent/widespread impact on air quality.</p> <p>Plant of this nature is assumed to be more or less evenly distributed across the country, although there may be 'clustering' in some coastal and industrial areas.</p>	Low (1)	Moderate (3)	Medium	LFB

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Risk ref.	Hazard category	Hazard sub-category	Outcome Description/ Variation and Further Information	Likelihood	Impact	Risk rating	Lead responsibility
H103	Industrial Accident & Environmental Pollution	Fire or explosion at a gas LPG or LNG terminal (or associated onshore feedstock pipeline)	N/A  H103 and HL104 have been produced following the revision and streamlining of H1, HL1, H7, HL25 & HL30 (all relating to gas pipelines, storage sites and terminals) and replace H1/HL1.	N/A	N/A	N/A	N/A
HL104	Industrial Accident & Environmental Pollution	Industrial Accident & Environmental Pollution	N/A  H103 and HL104 have been produced following the revision and streamlining of H1, HL1, H7, HL25 & HL30 (all relating to gas pipelines, storage sites and terminals) and replace H1/HL1.	N/A	N/A	N/A	N/A
H8	Industrial Accident & Environmental Pollution	Very large toxic chemical release	<b>Outcome Description</b> Up to 10km from site causing up to 2000 fatalities and 10000 casualties. Toxic release could be due to loss of containment of chlorine - or of a number of other chemicals, e.g. anhydrous hydrofluoric acid, refrigerated ammonia, sulphur di-oxide (or tri-oxide) gas.  <b>Variation and Further Information</b> Chlorine release. Risk is based on a large industrial complex or bulk storage of chemicals near to a populated (i.e. urban) area.	Low (1)	Catastrophic (5)	Medium	LFB

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Risk ref.	Hazard category	Hazard sub-category	Outcome Description/ Variation and Further Information	Likelihood	Impact	Risk rating	Lead responsibility
H9	Industrial Accident & Environmental Pollution	Large toxic chemical release	<p><b>Outcome Description</b> Up to 3km from site of toxic chemical release causing up to 50 fatalities and up to 2000 casualties.</p> <p><b>Variation and Further Information</b> Chlorine release. 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, and there is 'clustering' of such sites in other parts of the country.</p>	Low (1)	Catastrophic (5)	Medium	LFB
HL2	Industrial Accident & Environmental Pollution	Localised Industrial accident involving large toxic release, e.g. from a site storing large quantities of chlorine.	<p><b>Outcome Description</b> Up to 3km from site causing up to 30 fatalities and up to 250 casualties.</p> <p><b>Variation and Further Information</b> Plant of this nature is assumed to be more or less evenly distributed across the country, although there may be 'clustering' in some coastal and industrial areas. Impact on environment, including persistent/widespread impact on air quality.</p>	Medium Low (2)	Significant (4)	High	LFB
HL3	Industrial Accident & Environmental Pollution	Localised industrial accident involving a small toxic release.	<p><b>Outcome Description</b> Up to 1km around site causing up to 10 fatalities and up to 100 casualties.</p> <p><b>Variation and Further Information</b> Plant of this nature is assumed to be more or less evenly distributed across the country, although there may be 'clustering' in some coastal and industrial areas.</p>	Medium Low (2)	Moderate (3)	High	LFB

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Risk ref.	Hazard category	Hazard sub-category	Outcome Description/ Variation and Further Information	Likelihood	Impact	Risk rating	Lead responsibility
H10	Industrial Accident & Environmental Pollution	Radioactive substance release from a nuclear reactor accident.	N/A	N/A	N/A	N/A	N/A
HL31	Industrial Accident & Environmental Pollution	Limited radioactive substance release from a nuclear accident.	<p><b>Outcome Description</b> Up to 1km from site causing up to 50 fatalities and 500 casualties</p> <p><b>Variation and Further Information</b> Clearly, with more plants of this nature in the region or local area, the higher the likelihood.</p>	Low (1)	Significant (4)	Medium	Health Protection Agency
H11	Industrial Accident & Environmental Pollution	Accidental release of radioactive material from incorrectly handled or disposed of sources.	<p><b>Outcome Description</b> Up to five fatalities and up to 100 contaminated people requiring medical monitoring. Many worried people may present at hospitals. Radiation may be spread over several kilometres but most concentration where source is opened.</p> <p><b>Variation &amp; Further Information</b> Assume radioactive material is a medical source from radiotherapy machine.</p> <p>Other possible scenarios would be loss of mobile sources in road building, in transit and in fires.</p>	Low (1)	Significant (4)	Medium	Environment Agency

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Risk ref.	Hazard category	Hazard sub-category	Outcome Description/ Variation and Further Information	Likelihood	Impact	Risk rating	Lead responsibility
H12	Industrial Accident & Environmental Pollution	Biological substance release from control measure failure (e.g. dangerous pathogen release from containment laboratory).	<p><b>Outcome Description</b> Up to 10 fatalities and serious injuries or off-site impact causing up to 1,000 casualties.</p> <p><b>Variation and Further Information</b> Assume release in an urban area. Biological agent (mainly HG3 &amp; 4 human &amp; animal pathogens) release from containment (e.g. infection of laboratory worker or animal) – example SARS release from lab in China resulted in 2 deaths &amp; several hundred people quarantined.</p>	Medium Low (2)	Significant (4)	High	Health
H46	Industrial Accident & Environmental Pollution	Biological substance release during an unrelated work activity or industrial process (e.g. Legionella release due to improperly maintained building environmental control systems)	<p><b>Outcome Description</b> Up to 10 fatalities and serious injuries or off site impact requiring up to 1000 hospital admissions.</p> <p><b>Variation and Further Information</b> Specifically related to Legionella release from an industrial process – example of Barrow 2002 (7 fatalities, ~500 hospitalisations); Inadvertent Legionella contaminant of cooling tower, hot &amp; cold water system, evaporative condenser.</p>	Medium High (4)	Moderate (3)	High	
H14	Industrial Accident & Environmental Pollution	Major contamination incident with widespread implications for the food chain.	<p><b>Outcome Description</b> Food production/ marketing implications depending on scale and area affected e.g. major shellfisheries, dairy, livestock production areas. Potential direct animal and consumer health effects. Consumer confidence affected leading to lost markets or panic buying.</p> <p><b>Variation and Further Information</b> An incident similar to that which occurred in Belgium in which animal feed is contaminated with Dioxins, resulting in contamination of animals and animal products.</p>	Medium High (4)	Minor (2)	Medium	Local Authorities

**NOT PROTECTIVELY MARKED**

<b>Risk ref.</b>	<b>Hazard category</b>	<b>Hazard sub-category</b>	<b>Outcome Description/ Variation and Further Information</b>	<b>Likelihood</b>	<b>Impact</b>	<b>Risk rating</b>	<b>Lead responsibility</b>
H15	Industrial Accident & Environmental Pollution	Maritime pollution.	<p><b>Outcome Description</b> Release of 100,000 tonnes of crude oil into the sea, polluting up to 200km of coastline</p> <p><b>Variation information and further information</b> A large fully laden oil super tanker sinks in the approach to a UK port, e.g. the Thames estuary, fully laden and with strong north-easterly winds and with the tide flowing up the Thames estuary. Assume no loss of access to the LNG terminal on the Isle of Grain.</p>	Low (1)	Minor (2)	Low	Maritime & Coastguard Agency
HL4	Industrial Accident & Environmental Pollution	Major pollution of controlled waters	<p><b>Outcome Description</b> 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.</p>	Medium (3)	Moderate (3)	High	Environment Agency
HL7	Industrial Accident & Environmental Pollution	Industrial explosions and major fires	<p><b>Outcome Description</b> Up to 1km around site, causing up to 10 serious injuries and up to 10 casualties. Explosions would cause primarily crush / cuts and bruise-type injuries, as well as burns.</p> <p><b>Variation and Further Information</b> Plant of this nature is assumed to be more or less evenly distributed across the country. Clearly, with more plants of this nature in the region or local area, the higher the likelihood (i.e. closer to 2).</p>	Medium Low (2)	Minor (2)	Medium	Local Authorities

NOT PROTECTIVELY MARKED

Risk ref.	Hazard category	Hazard sub-category	Outcome Description/ Variation and Further Information	Likelihood	Impact	Risk rating	Lead responsibility
HL33	Industrial Accident & Environmental Pollution	Forest or moorland fire	<b>Outcome Description</b> Forest or moorland fire across up to 50 hectares. Evacuation of up to 100 residential homes required. Up to five fatalities and 20 casualties.	Low (1)	Minor (2)	Low	LFB

NOT PROTECTIVELY MARKED

Risk ref.	Hazard category	Hazard sub-category	Outcome Description/ Variation and Further Information	Likelihood	Impact	Risk rating	Lead responsibility
<b>TRANSPORT ACCIDENTS AND ENVIRONMENTAL POLLUTION</b>							
H42	Transport Accidents	Rapid accidental sinking of a passenger or cargo vessel in or close to UK waters.	N/A	N/A	N/A	N/A	Maritime and Coastguard Agency
HL34 & HL8	Transport Accidents	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	<p><b>Outcome Description HL34</b> Up to 250 fatalities and 500 casualties</p> <p><b>Variation and Further Information</b> The risk is based on an accident to a medium-sized passenger ship such as a ferry. Casualty figures relate to large ferries carrying c.2000 people (passengers &amp; crew).</p>	Low (1)	Moderate (3)	Medium	Maritime and Coastguard Agency
		Rapid accidental sinking of a passenger vessel in, or close to UK waters or on inland waterways	<p><b>Outcome Description HL8</b> Up to 50 fatalities and up to 300 casualties</p> <p><b>Variation and Further Information</b> The risk is based on an accident to a smaller passenger vessel on the UK coast or inland waterways.</p>				

NOT PROTECTIVELY MARKED

Risk ref.	Hazard category	Hazard sub-category	Outcome Description/ Variation and Further Information	Likelihood	Impact	Risk rating	Lead responsibility
HL37	Transport Accidents	Release of significant quantities of hazardous chemicals/materials as a result of major shipping accident. This would have a significant impact upon the local population's health and the environment, requiring a specialist response.	<p><b>Outcome Description</b> Up to 50 fatalities and up to 250 casualties. Significant environmental / ecological damage.</p> <p><b>Variation and Further Information</b> Only applicable to those LRFs with a coastline or significant inland waterways. The extent of the impact would depend on substance involved, quantity, nature and location of accident.</p>	Low (1)	Minor (2)	Low	
H16	Transport Accidents	Aviation accident over major conurbation.	<p><b>Outcome Description</b> Loss of up to two aircraft and passengers, with debris over a semi-urban area. Up to 600 fatalities and up to 300 casualties.</p> <p><b>Variation and Further Information</b> 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.</p>	Low (1)	Significant (4)	Medium	LFB
HL9	Transport Accidents	Aviation accident	<p><b>Outcome Description</b> Aviation accident causing up to 50 fatalities and up to 250 casualties.</p> <p><b>Variation and Further Information</b></p>	Medium Low (2)	Moderate (3)	High	LFB

NOT PROTECTIVELY MARKED

Risk ref.	Hazard category	Hazard sub-category	Outcome Description/ Variation and Further Information	Likelihood	Impact	Risk rating	Lead responsibility
			Accident involving one commercial aircraft, probably on take off or landing.				
HL10	Transport Accidents	Local accident on motorways and major trunk roads	<b>Outcome Description</b> 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.	Medium High (4)	Limited (1)	Low	Metropolitan Police Service
HL11	Transport Accidents	Railway Accident	<b>Outcome Description</b> Up to 30 fatalities and up to 100 casualties (fractures, internal injuries – burns less likely). Possible loss of freight. Major disruption to rail line including possible closure of rail tunnel.	Medium High (4)	Moderate (3)	High	DfT
HL12	Transport Accidents	Local accident involving transport of hazardous chemicals	<b>Outcome Description</b> 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.  <b>Variation and Further Information</b> 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.	Low (1)	Significant (4)	Medium	LFB

NOT PROTECTIVELY MARKED

Risk ref.	Hazard category	Hazard sub-category	Outcome Description/ Variation and Further Information	Likelihood	Impact	Risk rating	Lead responsibility
HL13	Transport Accidents	Maritime accident or deliberate blockage resulting in blockage of access to key port, estuary, maritime route for more than one month	N/A	N/A	N/A	N/A	N/A
HL14	Transport Accidents	Local accident involving transport of fuel/explosives	<p><b>Outcome Description</b> 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>	Medium Low (2)	Moderate (3)	High	LFB
<b>SEVERE WEATHER</b>							
H17	Severe Weather	Storms & Gales	<p><b>Outcome Description</b> 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> <p><b>Variation and Further Information</b> England and Wales are at the lower end of the likelihood range.</p>	Medium (3)	Moderate (3)	High	Local Authority

NOT PROTECTIVELY MARKED

Risk ref.	Hazard category	Hazard sub-category	Outcome Description/ Variation and Further Information	Likelihood	Impact	Risk rating	Lead responsibility
H18	Severe Weather	Low temperatures and heavy snow	<p><b>Outcome Description</b> Snow lying over most of the country for at least one month. Most lowland areas experience some falls in excess of 30 cm, some drifts in excess of 1m, and a period of at least 7 consecutive days with daily mean temperatures below -3°C. Consequent damage to infrastructure (e.g. telecommunications, power, transport).</p> <p><b>Variation and Further Information</b> London, South West and Northern Ireland are at the lower end of the likelihood range.</p>	Medium (3)	Moderate (3)	High	Local Authority
H48	Severe Weather	Heat Wave	<p><b>Outcome Description</b> Daily maximum temperatures above 32 degrees centigrade and minimum temperatures above 15 degrees centigrade over most of the area for at least 5 consecutive days</p> <p><b>Variation and Further Information</b> Scotland is at the lower end of the likelihood range.</p>	Medium High (4)	Minor (2)	Medium	Health
H19	Severe Weather	Flooding: major coastal / tidal.	<p><b>Outcome Description</b> Major sea surge, spring tides, gale force winds, heavy rainfall, many defences overtopped or failing. Combined tidal and fluvial event. Many coastal regions affected and tidal reaches of river. Flooding of 10,000+ properties for seven days. Potential loss of life. Suddenness of failure of defences would not be possible to predict, tidal inundation would be rapid and wave impact would cause structural damage to properties. Significant economic disruption and damage.</p> <p><b>Variation and Further Information</b></p>	Medium Low (2)	Catastrophic (5)	High	Environment Agency

NOT PROTECTIVELY MARKED

Risk ref.	Hazard category	Hazard sub-category	Outcome Description/ Variation and Further Information	Likelihood	Impact	Risk rating	Lead responsibility
			<p>Assumes:                      Storm tide forecasting service shows risk of over-topping (up to 8hrs lead time).                      Rescue can only be by boat, helicopter or high-clearance vehicles.                      Emergency services affected if located in the flood zone.                      Evacuation warnings given to emergency services.                      Multiple failure of flood defence systems.                      Damage or failure (at several sites) of telecommunications, power stations, road and rail links.                      There are hospitals, schools, shops and industrial/ commercial premises in the flooded area (&amp; possibly rest centres).                      Properties' includes occupied mobile homes and caravans sites in low-lying coastal zones (summer tourists).</p>				

NOT PROTECTIVELY MARKED

Risk ref.	Hazard category	Hazard sub-category	Outcome Description/ Variation and Further Information	Likelihood	Impact	Risk rating	Lead responsibility
H21	Severe Weather	Flooding: major fluvial.	<p><b>Outcome Description</b> A sustained period of heavy rainfall extending over two weeks, perhaps combined with snow melt, resulting in steadily rising river levels over most of the country affecting all regions. Flooding of 10,000+ properties for seven to 21 days. Potential loss of life. 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). Many minor rail lines and stations would be closed. Most waterways would be closed to traffic because of strong currents and high water levels.</p> <p><b>Variation and Further Information</b> Assumes: 2 days of severe flood warnings issued. There are hospitals, schools, shops and industrial/ commercial premises in the flooded area (&amp; possibly rest centres). Damage or failure (at several sites) of telecommunications, power stations, road and rail links. Rescue can only be by boat, helicopter or high-clearance vehicles. Emergency services affected if located in the flood zone. Evacuation warnings given to emergency services (up to 12hrs lead time). Multiple failure of flood defence systems (overtopping). Hazard is not evenly distributed across the UK.</p>	Medium (3)	Catastrophic (5)	Very High	Environment Agency

NOT PROTECTIVELY MARKED

Risk ref.	Hazard category	Hazard sub-category	Outcome Description/ Variation and Further Information	Likelihood	Impact	Risk rating	Lead responsibility
HL16	Severe Weather	Major local coastal / tidal flooding.	<p><b>Outcome Description</b> Sea surge, spring tides, gale force winds, heavy rainfall affecting more than one region, some defences overtopped or failing at multiple locations. Flooding of more than 1,000 and less than 10,000 properties. Multi-agency response invoked, possible large scale evacuation required. Suddenness of failure of defences would not be possible to predict, tidal inundation would be rapid and wave impact would cause structural damage to properties. Impact on infrastructure includes disruption to traffic for one-three days, impact on access to agricultural land and impact on infrastructure, e.g. sewage treatment works flooded.</p> <p><b>Variation and Further Information</b> The flooding event would have a regional impact, translating into loss of lives, severe economic damage and need between 6 and 18 months recovery before business as usual conditions are restored. Significant mutual aid would be deployed from inland counties. Assumes: See H19 (Many of the assumptions are the same for a major regional flood as they would be for a major national flood. Consequence management will not be achievable with in a regional response capability.</p>	Medium (3)	Catastrophic (5)	Very High	Environment Agency

NOT PROTECTIVELY MARKED

Risk ref.	Hazard category	Hazard sub-category	Outcome Description/ Variation and Further Information	Likelihood	Impact	Risk rating	Lead responsibility
HL17	Severe Weather	Localised coastal / tidal flooding.	<p><b>Outcome Description</b> Sea surge, high tides, gale force winds affecting the coastline and one region, some defences overtopped or failing at a single location. Localised impact with infrastructure affected and up to 1,000 properties flooded. Flood warning service would operate effectively. Multi-agency response invoked with some local evacuation and cordoning off of affected areas. Impact on infrastructure includes disruption to traffic for one-three days, impact on access to agricultural land and impact to infrastructure e.g. sewage treatment works flooded.</p> <p><b>Variation and Further Information</b> The flooding event would have a local impact, translating into some loss of lives, some economic damage and need between up to 12 months recovery before business as usual conditions are restored. Mutual aid will be needed within a Region. Assumes: See H19 (Many of the assumptions are the same for a significant local flood as they would be for a major national flood.) However, the impact may be specific to one area rather than several sites. Consequence management will be achievable within a regional level response capability.</p>	Medium (3)	Moderate (3)	High	Environment Agency

NOT PROTECTIVELY MARKED

Risk ref.	Hazard category	Hazard sub-category	Outcome Description/ Variation and Further Information	Likelihood	Impact	Risk rating	Lead responsibility
HL18	Severe Weather	Flooding: Major Local Fluvial (Rivers and Streams)	<p><b>Outcome Description</b> 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. Consequence management will not be achievable with in a regional response capability.</p> <p><b>Variation and Further Information</b> The flooding event would have a regional impact, possibly translating into loss of lives, localised economic damage and need between 6 and 18 months recovery before business as usual conditions are restored. The depth and velocity of water flows will vary. Significant mutual aid would be deployed from neighbouring regions, although other regions are also likely to be at risk or impacted at the same time. See H21 (Many of the assumptions are the same for a major regional fluvial flood as they would be for a major national incident. Consequence management will not be achievable with in a regional response capability.</p>	Medium (3)	Significant (4)	Very High	Environment Agency

NOT PROTECTIVELY MARKED

Risk ref.	Hazard category	Hazard sub-category	Outcome Description/ Variation and Further Information	Likelihood	Impact	Risk rating	Lead responsibility
HL19	Severe Weather	Significant Local Fluvial Flooding (Rivers and Streams)	<p><b>Outcome Description</b> 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.</p> <p><b>Variation and Further Information</b> The flooding event would have a sub-regional impact, and is a real threat to lives. Localised economic damage and need between 6 and 18 months recovery before business as usual conditions are restored. The depth and velocity of water flows will vary. Significant mutual aid would be deployed from neighbouring counties but the response effort could be contained within a region. See H21 (Many of the assumptions are the same for a significant local fluvial flood as they would be for a major regional flood. However, the impact may be specific to one area rather than several sites. Consequence management will be achievable within a regional level response capability.) The depth and velocity of water flows will vary. Significant mutual aid would be deployed from neighbouring counties but the response effort could be contained within a region. Assumes: See H21 (Many of the assumptions are the same for a significant local fluvial flood as they would be for a major regional flood.) However,</p>	Medium High (4)	Moderate (3)	High	Environment Agency

NOT PROTECTIVELY MARKED

Risk ref.	Hazard category	Hazard sub-category	Outcome Description/ Variation and Further Information	Likelihood	Impact	Risk rating	Lead responsibility
			the impact may be specific to one area rather than several sites. Consequence management will be achievable within a regional level response capability.) See H21 (Many of the assumptions are the same for a significant local fluvial flood as they would be for a major regional flood.) However, the impact may be specific to one area rather than several sites. Consequence management will be achievable within a regional level response capability.)				
HL20	Severe Weather	Localised fluvial flooding (flash flooding).	<p><b>Outcome Description</b> 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.</p> <p><b>Variation and Further Information</b> Assumes: Very little time to evacuate (as little as 15 minutes). Flooding lasts less than 24 hours. Emergency services not pre-warned Extent of downstream effect could reach 30-50km. Significant local infrastructure damage - gas, electricity supplies, telecommunications, road and rail links.</p>	Medium High (4)	Moderate (3)	High	Environment Agency

NOT PROTECTIVELY MARKED

Risk ref.	Hazard category	Hazard sub-category	Outcome Description/ Variation and Further Information	Likelihood	Impact	Risk rating	Lead responsibility
H50	Severe Weather	Drought	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.	Medium Low (2)	Significant (4)	High	Environment Agency

NOT PROTECTIVELY MARKED

Risk ref.	Hazard category	Hazard sub-category	Outcome Description/ Variation and Further Information	Likelihood	Impact	Risk rating	Lead responsibility
<b>STRUCTURAL</b>							
HL21	Structural	Land movements (tremors, landslides and also including subsidence (e.g. mines collapse).	<p><b>Outcome Description</b> Roads and access routes impassable for a time. Emergency access into/out of large populated areas difficult or impossible; severe congestion over wide geographical area. Loss of power and other essential services over wide geographical area. Potential for 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><b>Variation and further information</b> Such incidents are rare within the UK with some areas being more prone to landslides than others. Geography and climatic conditions will determine likelihood.</p>	Low (1)	Moderate (3)	Medium	LFB
HL22	Structural	Building Collapse.	<p><b>Outcome Description</b> 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><b>Variation and Further Information</b> A number of such incidents annually within the UK. Some areas will be more at risk than others due to age of local building stock.</p>	High (5)	Minor (2)	Medium	Local Authorities
HL22a	Structural	Large Building Collapse	<p><b>Outcome Description</b> Collapse of a large building (high-rise block, shopping mall etc). Up to 100 fatalities depending on the size and construction of</p>	Medium Low (2)	Moderate (3)	High	Local Authorities

NOT PROTECTIVELY MARKED

Risk ref.	Hazard category	Hazard sub-category	Outcome Description/ Variation and Further Information	Likelihood	Impact	Risk rating	Lead responsibility
			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.				
HL23	Structural	Bridge Collapse	<p><b>Outcome Description</b> 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> <p><b>Variation and Further Information</b> It is considered that such incidents are rare within the UK.</p>	Low (1)	Moderate (3)	Medium	Local Authorities
H44	Structural	Major reservoir dam failure/collapse	<p><b>Outcome Description</b> Collapse without warning resulting in almost instantaneous flooding. Significant movement of debris (including vehicles) and sediment. Complete destruction of some residential and commercial properties and serious damage of up to 500 properties. Several thousand other properties could be flooded. Serious damage to or destruction of strategic infrastructure and disruption to major communication routes.</p> <p>Multiple fatalities. Up to 1000 casualties. Up to 50 missing persons and people stranded. Hazardous recovery amongst collapsed infrastructure and debris. Water supply to homes and business is lost. Up to 200 people need temporary accommodation for 2-18 months.</p>	Low (1)	Catastrophic (5)	Medium	Environment Agency

NOT PROTECTIVELY MARKED

Risk ref.	Hazard category	Hazard sub-category	Outcome Description/ Variation and Further Information	Likelihood	Impact	Risk rating	Lead responsibility
HL105	Structural	Complex Built Environments	<p><b>Outcome Description</b>                      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.</p>	Medium Low (2)	Moderate (3)	High	Local Authorities

NOT PROTECTIVELY MARKED

Risk ref.	Hazard category	Hazard sub-category	Outcome Description/ Variation and Further Information	Likelihood	Impact	Risk rating	Lead responsibility
<b>HUMAN HEALTH</b>							
H22	Human Health	Influenza Type Disease (Epidemic)	<p><b>Outcome Description</b> 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).</p>	Medium High (4)	Minor (2)	Medium	Health
H23	Human Health	Influenza Type Disease (Pandemic)	<p><b>Outcome Description</b> Each pandemic is different and the nature of the virus and its impacts cannot be known in advance. Previous pandemic 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.</p> <p><b>Variation and Further Information</b> Clinical attack rate of 25 to 50% spread over one or more waves with case fatality of up to 2.5%. This means, at the upper end of assumptions, up to some 700,000 excess deaths in the UK across the whole period of the pandemic and over 10,000 healthcare contacts per 100,000 population per week at peak. Peak in weeks 6 to 8, with 22% of total cases occurring at this time.</p>	Medium High (4)	Catastrophic (5)	Very High	Health

NOT PROTECTIVELY MARKED

Risk ref.	Hazard category	Hazard sub-category	Outcome Description/ Variation and Further Information	Likelihood	Impact	Risk rating	Lead responsibility
H24	Human Health	SARS type disease.	<p><b>Outcome Description</b> Severe Acute Respiratory Syndrome (SARS) in an acute, severe respiratory illness caused by SARS coronavirus (SARS-CoV).</p> <p><b>Variation and Further Information</b> The risk is based on the 2003/4 SARS outbreak. Local variation will be limited - higher in areas with major international transport hubs.</p>	Medium High (4)	Significant (4)	Very High	Health
HL24a	Human Health	Legionnaires Disease	<p><b>Outcome Description</b> A point source outbreak of Legionnaires' disease, a serious form of atypical pneumonia caused by poorly maintained water systems.</p>	Medium High (4)	Limited (1)	Low	Health
HL24b	Human Health	Meningococcal Disease	<p><b>Outcome Description</b> Cluster of cases of meningococcal disease caused by Neisseria Meningitidis.</p>	High (5)	Limited (1)	Low	Health
HL102	Human Health	Oak Processionary Moth (OPM)	<p><b>Outcome Description</b> Infestation of Oak Processionary Moth (OPM) caterpillars to plague proportions causing severe defoliation of trees and epidemic numbers of people requiring medical treatment.</p> <p><b>Variation and Further Information</b> The caterpillar form of the OPM can cause irritation and allergic reaction if people touch the caterpillars or if the hairs are blown by wind into people's eyes, ears, nose, throat or skin. The irritation can require medical attention especially in people with conditions such as asthma, including hospitalisation in extreme cases. The hairs can also affect animals including cats, dogs and horses. Previous outbreaks (Europe) have required small areas of countryside or villages to be quarantined.</p>	Medium (3)	Minor (2)	Medium	Local Authorities

NOT PROTECTIVELY MARKED

Risk ref.	Hazard category	Hazard sub-category	Outcome Description/ Variation and Further Information	Likelihood	Impact	Risk rating	Lead responsibility
<b>ANIMAL HEALTH</b>							
H25	Animal Health	Non-zoonotic Notifiable animal diseases (e.g. foot and mouth disease (FMD), classical swine fever, blue tongue and Newcastle disease of birds).	<p><b>Outcome Description</b> Slaughter of up to 2 million affected and exposed livestock plus the possibility of a significant number of animals culled for welfare reasons.</p> <p><b>Variation and Further Information</b> Assessments based on credible worst case scenario outbreak of foot &amp; mouth disease starting in upland, extensively farmed area taking into changes to policy and current livestock movement data.</p>	Medium Low (2)	Minor (2)	Medium	Local Authorities
H26	Animal Health	Zoonotic Notifiable animal diseases (e.g. Highly Pathogenic Avian Influenza (HPAI), rabies and West Nile virus).	<p><b>Outcome Description</b> 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.</p> <p><b>Variation and Further Information</b> Assessments consider credible worst case scenario outbreak of highly pathogenic avian influenza in the poultry industry, based on an analysis of the epidemiology of the current outbreak around the world.</p>	Medium Low (2)	Minor (2)	Medium	Local Authorities

NOT PROTECTIVELY MARKED

Risk ref.	Hazard category	Hazard sub-category	Outcome Description/ Variation and Further Information	Likelihood	Impact	Risk rating	Lead responsibility
<b>INDUSTRIAL ACTION</b>							
HL42	Industrial Action	Emergency services and other workers providing a service critical to the preservation of life (eg doctors and nurses): loss of cover due to industrial action.	<p><b>Outcome Description</b> A number of three day strikes with significant support over a two month period affecting a single emergency service.</p> <p><b>Variation and Further Information</b> Likelihood and impact will vary between, and geographically within, emergency services.</p>	Medium High (4)	Moderate (3)	High	CO
H30	Industrial Action	Emergency services: loss of emergency fire and rescue cover because of industrial action.	<p>A series of strikes by fire fighters takes place, spread over a period of two months, perhaps lasting up to 24 hours each.</p> <p><b>Variation and further information:</b> Chief Fire Officers would all deploy the emergency cover they could make available in line with an optimum response to their locally assessed risk profiles. London, and possibly other metropolitan areas, would have only thin cover. A number of fire and rescue authorities (FRAs) would be self sufficient in the provision of emergency cover.</p>	High (5)	Moderate (3)	High	LFB
H31	Industrial Action	Significant or perceived significant constraint on the supply of fuel e.g. industrial action by contract drivers for fuel.	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	Medium High (4)	Minor (2)	Medium	Metropolitan Police Service

NOT PROTECTIVELY MARKED

Risk ref.	Hazard category	Hazard sub-category	Outcome Description/ Variation and Further Information	Likelihood	Impact	Risk rating	Lead responsibility	
H33	Industrial Action	Prison Officer Strike	<b>Outcome Description</b> Prison Officer strike action, for up to 48 hours in 80% of prisons	Not assessed				
H35	Industrial Action	Industrial action by key rail or London Underground workers.	<b>Outcome Description</b> 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.	Low (1)	Minor (2)	Low	British Transport Police	
<b>INTERNATIONAL EVENTS</b>								
H37	International Events	Repatriation of British Nationals occurring as a result of an international security, pandemic health or other situation.	<b>Outcome Description</b> 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 terrorist campaign against UK and other Western nationals, or an uncontrolled outbreak of pandemic flu. <b>Variation and Further Information</b> Majority of the incoming nationals have no UK base and have no means to provide for themselves. May require medical or other services.	High (5)	Minor (2)	Medium	Local Authorities	

NOT PROTECTIVELY MARKED

Risk ref.	Hazard category	Hazard sub-category	Outcome Description/ Variation and Further Information	Likelihood	Impact	Risk rating	Lead responsibility
<b>INDUSTRIAL TECHNICAL FAILURE</b>							
H38	Industrial Technical Failure	Technical failure of upstream (offshore) oil / gas network leading to a disruption in upstream oil and gas production.	<p><b>Outcome Description</b> 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.</p>	Medium Low (2)	Significant (4)	High	LFB
H39	Industrial Technical Failure	Failure of water infrastructure or accidental contamination with a non-toxic contaminant.	<p><b>Outcome Description</b> 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.</p> <p><b>Variation and Further Information</b> Domestic, industrial, commercial and agricultural premises without piped water. Lack of water for fire fighting. Water Companies required to provide at least 10 litres per person per day until supply restored. However, could lead to suspension of services at hospitals, schools, and businesses etc which do not maintain their own on-site water storage.</p>	Medium (3)	Moderate (3)	High	LFB

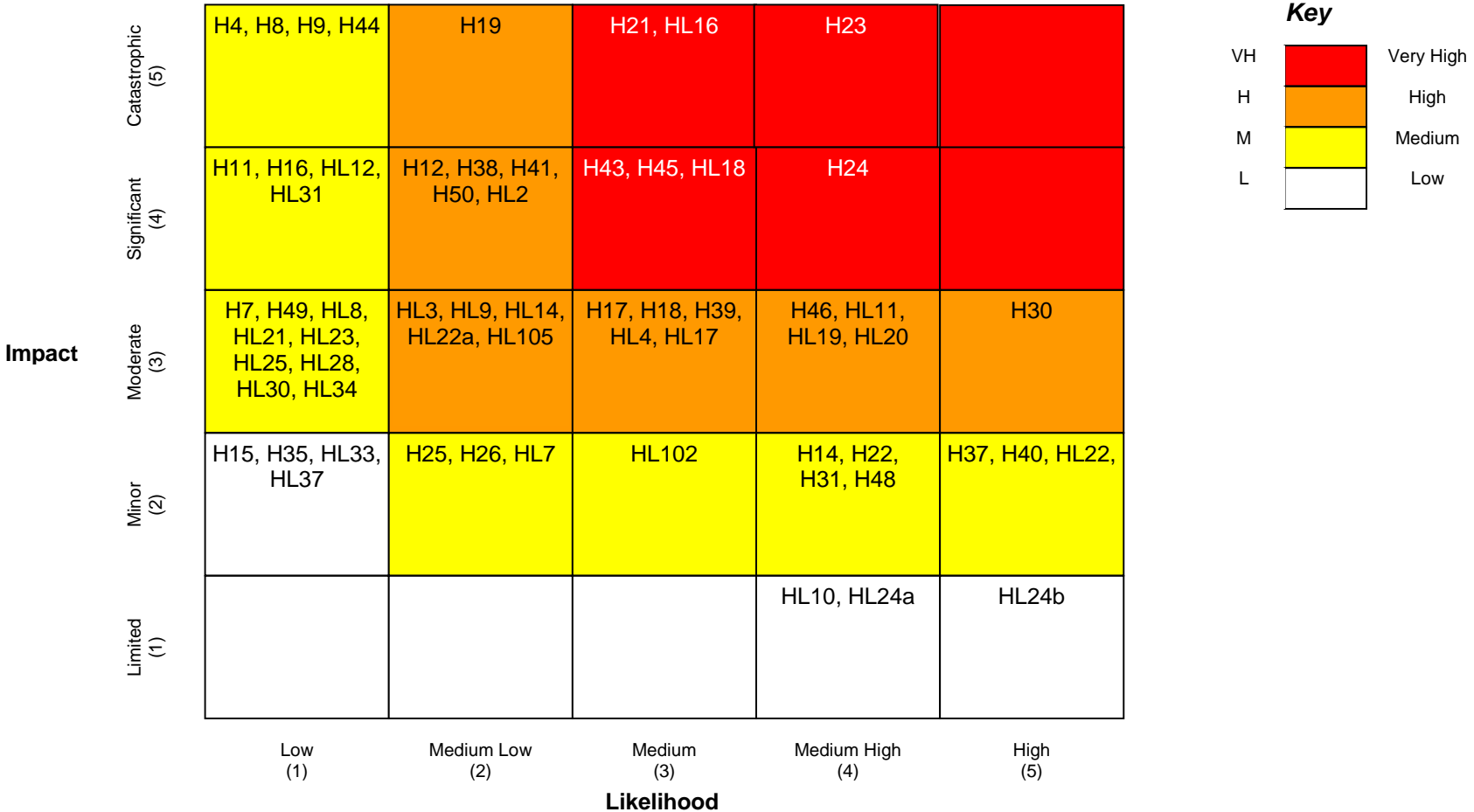
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Risk ref.	Hazard category	Hazard sub-category	Outcome Description/ Variation and Further Information	Likelihood	Impact	Risk rating	Lead responsibility
H40	Industrial Technical Failure	No notice loss of significant telecommunications infrastructure in a localised fire, flood or gas incident.	<p><b>Outcome Description</b> Loss of service to up to 100,000 people for up to 72 hours</p> <p><b>Variation and Further Information</b> Building damage to a large urban telecoms facility.</p>	High (5)	Minor (2)	Medium	Metropolitan Police Service
H41	Industrial Technical Failure	Technical failure of electricity network	<p><b>Outcome Description</b> 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.</p> <p><b>Variation and Further Information</b> Assume that no serious damage has been sustained by the electricity supply system.</p>	Medium Low (2)	Significant (4)	High	LFB
H43	Industrial Technical Failure	Telecommunication infrastructure - human error.	<p><b>Outcome Description</b> Widespread loss of telecommunications (including public land line and mobile networks) at a regional level for up to 5 days.</p> <p><b>Variation and Further Information</b> Assume emergency services' communication systems are also affected.</p>	Medium (3)	Significant (4)	Very High	LFB
H45	Industrial Technical Failure	Technical failure of electricity network	<p><b>Outcome Description</b> Total shutdown of the electricity supply over an entire region (or Developed Administration), occurring during working hours and lasting for 24hours.</p>	Medium (3)	Significant (4)	Very High	LFB

NOT PROTECTIVELY MARKED

Risk ref.	Hazard category	Hazard sub-category	Outcome Description/ Variation and Further Information	Likelihood	Impact	Risk rating	Lead responsibility
H49	Industrial Technical Failure	Loss of drinking water supplies due a major incident affecting infrastructure	<p><b>Outcome Description</b> 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.</p> <p><b>Variation and Further Information</b> Domestic, industrial, commercial and agricultural premises without piped water. Lack of water for fire fighting. Water Companies required to provide at least 10 litres per person per day until supply restored; requires a multi-agency response due to prolonged nature of outage and logistics. Could lead to suspension of services at hospitals, schools, and businesses etc which do not maintain their own on-site water storage. Food industries within the impacted zone may close.</p>	Low (1)	Moderate (3)	Medium	Environment Agency

**Summary of Risk Ratings**



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

South East London Local Resilience Forum  
Risk Assessment Working Group

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## Annex 1 – Threat Assumptions from Central Government

### Exclusion Note:

The content of Annex 1 to Section 3 of the South East London Community Risk Register is subject to a RESTRICTED classification in accordance with the Government's protective marking system and is withheld from general publication under Regulation 51 of The Civil Contingencies Act 2004 (Contingency Planning) Regulations 2005.

Controlled copies issued to Category 1 Responders within the South East London Local Resilience Forum area (see Section 1) receive a complete copy of the South East London Community Risk Register (including Annex 1 to Section 3) which is subject to the RESTRICTED classification.

## 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"> <li>Limited number of injuries or impact on health.</li> </ul>
		Social	<ul style="list-style-type: none"> <li>Limited number of persons displaced and insignificant personal support required.</li> <li>Limited disruption to community services, including transport services and infrastructure.</li> </ul>
		Economic	<ul style="list-style-type: none"> <li>Limited impact on local economy.</li> </ul>
		Environment	<ul style="list-style-type: none"> <li>Limited impact on environment.</li> </ul>
2	Minor	Health	<ul style="list-style-type: none"> <li>Small number of people affected, no fatalities, and a small number of minor injuries with first aid treatment.</li> </ul>
		Social	<ul style="list-style-type: none"> <li>Minor damage to properties.</li> <li>Minor displacement of a small number of people for &lt; 24 hours and minor personal support required.</li> <li>Minor localised disruption to community services or infrastructure &lt; 24 hours.</li> </ul>
		Economic	<ul style="list-style-type: none"> <li>Negligible impact on local economy and cost easily absorbed.</li> </ul>
		Environment	<ul style="list-style-type: none"> <li>Minor impact on environment with no lasting effects.</li> </ul>
3	Moderate	Health	<ul style="list-style-type: none"> <li>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.</li> </ul>

**NOT PROTECTIVELY MARKED**

		Social	<ul style="list-style-type: none"> <li>• Damage that is confined to a specific location, or to a number of locations, but requires additional resources.</li> <li>• Localised displacement of &gt; 100 people for 1-3 days.</li> </ul>
		Economic	<ul style="list-style-type: none"> <li>• Limited impact on local economy with some short-term loss of production, with possible additional clean-up costs.</li> </ul>
		Environment	<ul style="list-style-type: none"> <li>• Limited impact on environment with short-term or long-term effects.</li> </ul>
4	Significant	Health	<ul style="list-style-type: none"> <li>• 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.</li> </ul>
		Social	<ul style="list-style-type: none"> <li>• Significant damage that requires support for local responders with external resources.</li> <li>• 100 to 500 people in danger and displaced for longer than 1 week. Local responders require external resources to deliver personal support.</li> <li>• Significant impact on and possible breakdown of some local community services.</li> </ul>
		Economic	<ul style="list-style-type: none"> <li>• Significant impact on local economy with medium-term loss of production.</li> <li>• Significant extra clean-up and recovery costs.</li> </ul>
		Environment	<ul style="list-style-type: none"> <li>• Significant impact on environment with medium- to long-term effects.</li> </ul>
5	Catastrophic	Health	<ul style="list-style-type: none"> <li>• 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.</li> </ul>
		Social	<ul style="list-style-type: none"> <li>• Extensive damage to properties and built environment in affected area requiring major demolition.</li> <li>• General and widespread displacement of more than 500 people for prolonged duration and extensive personal support required.</li> <li>• Serious damage to infrastructure causing significant disruption to, or loss of, key services for prolonged period. Community unable to function without significant support.</li> </ul>
		Economic	<ul style="list-style-type: none"> <li>• Serious impact on local and regional economy with some long-term, potentially permanent, loss of production with some structural change.</li> <li>• Extensive clean-up and recovery costs.</li> </ul>
		Environment	<ul style="list-style-type: none"> <li>• Serious long-term impact on environment and/or permanent damage.</li> </ul>

**Explanation of categories of impact**

<b>Category</b>	<b>Explanation</b>
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 (eg loss of goods, buildings, infrastructure) and indirect (eg 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:**

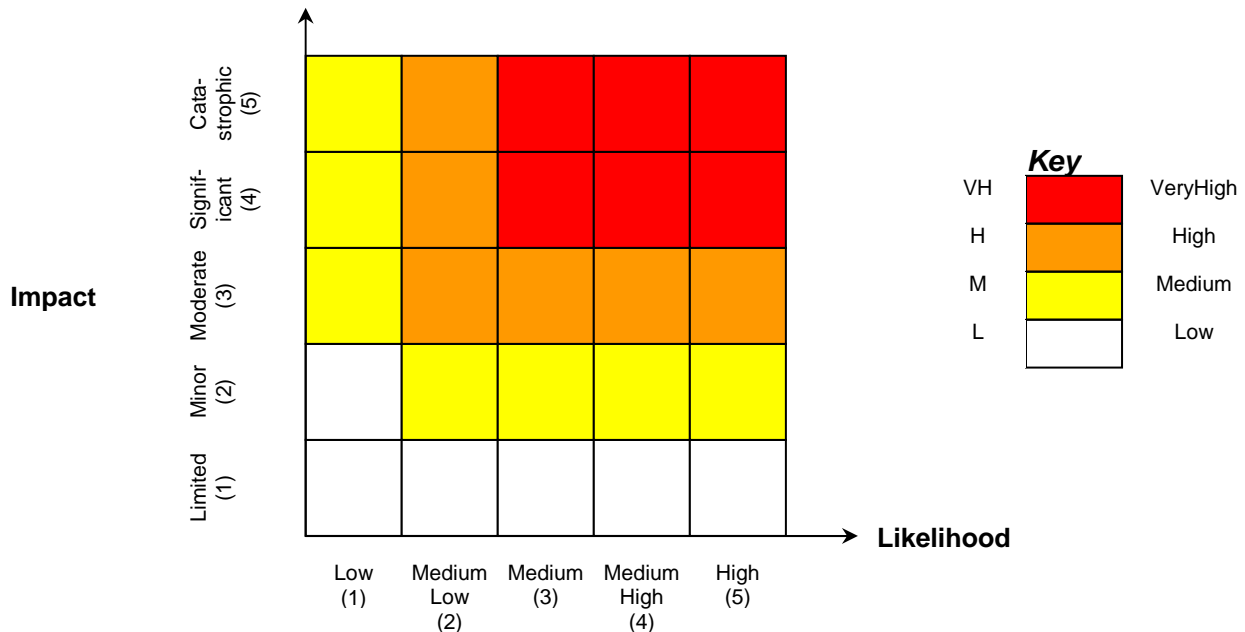
Strictly, levels 1 and 2 of the impact scale are likely to fall below the threshold for an emergency. Consequently, there may be no statutory requirement to plan for events that score 1 or 2 on the impact scale. This scale recognises that, to demonstrate a thorough analysis, Category 1 responders will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