

TYPE OF RISK	RISK CATEGORIES (AND SUB-CATEGORIES)	OUTCOME DESCRIPTION	LIKELIHOOD	IMPACT	RISK RATING
<b>INDUSTRIAL ACCIDENTS AND ENVIRONMENTAL POLLUTION</b>					
WMC / H1	Fire or explosion at a gas terminal as well as LPG, LNG, and other gas onshore feedstock pipeline and flammable gas storage sites	Up to 3km around site causing up to 500 fatalities and up to 1500 casualties. Gas terminal event likely to be of short duration once feed lines are isolated; event at a storage site could last for days if the explosion damaged control equipment.	Negligible	Moderate	Medium
WMC / H2	Fire or explosion at an onshore ethylene gas pipeline.	Up to 3km around site causing up to 500 fatalities and up to 1500 casualties and serious downstream impact on oil and chemical production.	Negligible	Moderate	Medium
WMC / HL1	Fire or explosion at a gas terminal or involving a gas pipeline.	Up to 3km around site causing up to 10 fatalities and 100 casualties.	Negligible	Moderate	Medium
WMC / H4	Fire or explosion at a fuel distribution site and tank storage of flammable or toxic liquids.	Up to 3km around site causing up to 150 fatalities and up to 2000 casualties. Explosions would cause primarily crush/cuts & bruises type injuries, as well as burns - fires would cause predominantly burn-type injuries.	Negligible	Moderate	Medium

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WMC / H5	Fire or explosion at an onshore fuel pipeline.	Up to 1km around site causing up to 100 fatalities and up to 500 casualties. Explosions would cause primarily crush/cuts & bruises type injuries, as well as burns - fires would cause predominantly burn-type injuries.	Negligible	Moderate	Medium
WMC / H7	Explosion at a natural gas pipeline.	Local to site causing up to 200 fatalities and up to 200 casualties. Explosions would cause primarily crush/cuts & bruises type injuries, as well as burns - fires would cause predominantly burn-type injuries.	Negligible	Moderate	Medium
WMC / H8	Toxic chemical release.	Up to 10km from site causing up to 2000 fatalities and up to 10,000 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.	Negligible	Catastrophic	Medium
WMC / H9	Toxic chemical release.	Up to 3km from site of toxic chemical release causing up to 50 fatalities and up to 2000 casualties.	Rare	Significant	High

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WMC / HL2	Industrial accident involving large toxic release e.g. from a site storing large quantities of chlorine.	Up to 3km from site causing up to 30 fatalities and up to 250 casualties.	Rare	Moderate	Medium
WMC / HL3	Industrial accident involving toxic release.	Up to 1km from site causing up to 10 fatalities and up to 100 casualties.	Rare	Minor	Low
WMC / H11	Accidental release of radioactive material from incorrectly handled or disposed sources.	Up to 5 fatalities and up to 100 contaminated people requiring medical monitoring. Many worried people may present at hospitals. Radiation may be spread over a range of several kilometres but most concentration at the point of accidental release.	Negligible	Significant	Medium
WMC / H12	Biological substance release from Control measure failure (e.g. dangerous pathogen release from containment laboratory).	Up to 10 fatalities and serious injuries or offsite impact requiring up to 1,000 casualties.	Negligible	Insignificant	Low

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WMC / H14	<p>Major contamination incident with widespread implications for the food chain, arising from:</p> <ul style="list-style-type: none"> <li>a) Industrial accident (chemical, microbiological, nuclear) affecting food production areas e.g. Chernobyl, Sea Empress oil spill, Foot and Mouth Disease.</li> <li>b) Contamination of animal feed e.g. dioxins, BSE.</li> <li>c) Incidents arising from production processes, e.g. adulteration of chilli powder with Sudan I dye.</li> </ul>	<p>Food production/ marketing implications depending on scale and area affected e.g. major shellfisheries, dairy, and livestock production areas. Potential direct animal and consumer health effects including possible fatalities and casualties. Consumer confidence affected leading to lost markets or panic buying.</p>	Possible	Moderate	High

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WMC / HL4	Major pollution of controlled waters.	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.	Possible	Moderate	High
WMC / HL5	Major land contamination incident.	Pollution incident (for example chemical spillage) leading to persistent and/or extensive effect on land quality, major damage to terrestrial ecosystems, property, amenity (i.e. tourism) value and major damage to agriculture/ commerce, serious impact on human health.	Possible	Moderate	High
WMC / HL6	Major air quality incident.	Pollution incident (for example uncontrolled emission from an industrial facility or uncontrolled release of landfill gas) leading to persistent and/or extensive effect on air quality, major damage to local ecosystem, major effect on amenity (i.e. tourism) value and serious impact on human health.	Possible	Moderate	High

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WMC / HL7	Industrial explosions and major fires.	Up to 1km around site causing up to 10 serious injuries and up to 100 casualties. Explosions would cause primarily crush/cuts & bruises type injuries, as well as burns - fires would cause predominantly burn-type injuries.	Rare	Moderate	Medium
<b>TRANSPORT ACCIDENTS</b>					
WMC / HL8	Rapid accidental sinking of a passenger vessel in or close to UK waters or on inland waterways.	Up to 50 fatalities and up to 300 casualties.	Negligible	Minor	Low
WMC / H16	Aviation accident over major conurbation.	Causing up to 800 fatalities and up 300 casualties. This represents a worst case scenario involving either two aircraft and an urban environment or one of the new super jumbo jets that will become operational in 2 years time. Injuries will range from serious burns to fractures and will have long term medical requirements. There is also likely to be loss of amenities including housing or retail or industrial facilities and subsequent impact on the economy.	Negligible	Catastrophic	Medium

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WMC / HL9	Aviation accident.	Causing up to 50 fatalities and up to 250 casualties.	Negligible	Moderate	Medium
WMC / HL10	Local accident on motorways and major trunk roads.	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.	Probable	Significant	Very High
WMC / HL11	Railway accident.	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.	Negligible	Moderate	Medium
WMC / HL12	Local accident involving transport of hazardous chemicals.	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.	Negligible	Catastrophic	Medium

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WMC / HL14	Local accident involving transport of fuel/explosives.	Up to 30 fatalities and up to 20 casualties within vicinity of accident/explosion. Area would require evacuating up to 1km radius depending on substances involved. 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.	Rare	Significant	High
WMCAdd01	Radioactive substance release following an accident involving transport of nuclear material /warheads.	Up to 4km from site causing up to 150 fatalities and up to 1500 casualties.	Negligible	Significant	Medium
<b>SEVERE WEATHER</b>					
WMC / H17	Storms and Gales	Storm force winds affecting most of the country for at least 6 hours. Most inland, lowland areas experience mean speeds in excess of 55mph with gusts in excess of 85mph.	Unlikely	Significant	Very High

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WMC / H18	Low temperatures and Heavy Snow.	Snow lying over most of the country for at least one month. Most lowland 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°C.	Possible	Significant	Very High
WMC / HL15	Heat wave.	Daily maximum temperatures above 32°C and minimum temperatures above 15°C over most of the area for at least 5 consecutive days.	Unlikely	Significant	Very High
WMC / HL18	Major local fluvial flooding.	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 1000 and less than 10,000 properties. There would be some impact on minor roads and some A roads and truck 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.	Unlikely	Moderate	High

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WMC / HL19	Major local fluvial flooding.	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 truck 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.	Possible	Moderate	High
WMC / HL20	Localised fluvial flooding (flash flooding).	Heavy localised rainfall in steep valley catchment leading to flash flooding. Likely that no flood defences in place. Possibly no flood warning service available/ suddenness of event means timely flood warnings not possible. Flooding of up to 200 properties.	Possible	Moderate	High

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<b>STRUCTURAL</b>					
WMC / HL21	Land movement (tremors and landslides).	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 landslide itself and/or in collapsed structures. Up to 5 fatalities depending on the size and location of land movement.	Negligible	Moderate	Medium
WMC / HL22	Building collapse.	Potential for a number of persons to be trapped or missing. Localised loss of power and other essential services. Local access routes affected due to road closures. Up to 5 fatalities depending on the size and construction of building and occupation rates.	Negligible	Moderate	Medium
WMC / HL23	Bridge collapse.	Roads, access routes and transport infrastructure impassable for considerable length of time. Severe congestion over wide geographical area. Emergency access into/out of large populated areas severely restricted. Potential for a number of persons to be trapped or missing.	Negligible	Moderate	Medium

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WMC / H44	Major reservoir dam failure caused by internal erosion or overtopping.	Complete destruction or serious damage to up to 200 downstream properties. Several thousand other properties could be flooded. Extent of downstream effect could reach 50-60km depending on topography. Up to 2000 fatalities could result though this would be mitigated by the extent of warning time given and evacuation taking place effectively.	Negligible	Catastrophic	Medium
<b>HUMAN HEALTH</b>					
WMC / H22	Influenza type disease (epidemic)	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).	Probable	Minor	Medium
WMC / H23	Influenza type disease (pandemic)	Pandemic likely to occur in two waves, about 3-9 months apart. Each wave likely to last 12 weeks. A quarter of the population could be affected. High number of cases and consultations (greater than 500 GP consultations per 100,000 population per week at peak) overwhelming health and other services.	Probable	Catastrophic	Very High

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		Clinical attack rate of 25% with mortality assumption of 1-3% of those infected. Age range vulnerability - all ages, including children, likely to be affected.			
WMC / H24	SARS type disease.	Based on US figures, outbreak will cause between 250-2000 casualties.	Work in Progress	Moderate	Work in Progress
WMC / HL24	Legionella/meningitis outbreak.	Localised outbreak of a disease, which could cause up to 10 fatalities and up to 50 casualties, with no variation in likelihood between localities.	Work in Progress	Work in Progress	Work in Progress
<b>ANIMAL HEALTH</b>					
WMC / H26	Zoonotic notifiable animal diseases (e.g. Highly Pathogenic Avian Influenza (HPAI), rabies and West Nile Virus).	Culling of up to 120 million poultry (HPAI) or euthanasia of up to 20 companion animals (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.	Work in Progress	Work in Progress	Work in Progress
<b>PUBLIC PROTEST</b>					
WMC / H28	Large-scale public protest.	Large scale public protests. Tens of thousands of highly motivated protesters, including a hard core of 2,000 protesters, causing physical damage, requiring a nationally co-ordinated police response.	Possible	Moderate	High

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WMC / H29	Targeted disruptive protest, e.g. fuel protest.	Nationally co-ordinated protest that could generate shortages of essential supplies, and lasts for up to 1 week.	Possible	Moderate	High
<b>INDUSTRIAL TECHNICAL FAILURE</b>					
WMC / H38	Technical failure of upstream (offshore) oil/gas network leading to a disruption in upstream oil and gas production.	Technical failure leading to 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 percent loss of gas supply to UK which, at the top end, would cause the disconnection or users with interruptible supply and would impact on power generation, possibly prompting three hour rota electricity cuts. Downstream oil would not be so adversely affected given alternative means of supply.	Unlikely	Moderate	High
WMC / H39	Accidental failure at water treatment works.	Between 10-50,000 people could be without piped water for up to 3 days.	Negligible	Moderate	Medium
WMC / H40	No notice failure of a public telephony provider.	Loss of service to up to 100,000 people for up to 5 hours.	Unlikely	Moderate	High
WMC / H41	Technical failure of electricity network.	Total shutdown of the electricity supply over whole of mainland UK, occurring during working hours and lasting for 24 hours.	Rare	Moderate	Medium

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WMC / H43	Telecommunication infrastructure – human error.	Loss of telecommunications across a UK region for up to 5 days.	Unlikely	Moderate	High
WMC / H45	Technical failure of electricity network.	Total shutdown of the electricity supply over an entire region (or Devolved Administration), occurring during working hours and lasting for 24 hours.	Unlikely	Moderate	High