



COMMUNITY RISK REGISTER

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North Yorkshire Local Resilience Forum (NYLRF) Risk Register

<p>What is included in the risk register?</p>	I M P A C T	Insignificant	No fatalities, no disruption to community, infrastructure or economy. No effects on environment.
<p>The hazards described in the North Yorkshire Community Risk Register are worst case scenarios. Including these potential incidents in the register does not mean that the NYLRF thinks that they are going to happen, or that if they did they would be as serious as the descriptions included here. The assessments relate to the risk occurring over a five year period. The scale of the risk is reflected within the outcome description in the tables that follow. The risk assessments included in the register only cover non-malicious events (i.e. hazards) rather than threats (i.e. terrorist incidents). This does not mean that we are not considering threats within our risk assessment work. However, given the sensitivity of the information supporting these risk assessments (and the potential for misuse), specific details will not be made available in the risk register. Risk assessment is not a static process and is subject to constant review. The information contained in the risk register will, as a result, be updated regularly.</p>		Minor	No fatalities, few casualties, minor damage to property. Localised minor disruptions to community services. No impact on economy or lasting effects to environment.
		Moderate	Significant casualties including fatalities, localised damage and displacement for 103 days. Short term impact on economy resulting in loss of production and clean up costs. Limited impact on the environment.
		Significant	Multiple casualties and serious injuries, significant damage to property requiring external assistance. Longer term displacements, significant impact on economy with medium term loss of production. Medium to long term impact on the environment.
		Catastrophic	Significant number of fatalities. Large are affected, extensive damage to property. Wide spread displacement, prolonged personal support required. Serious damage to infrastructure, unable to function without support. Impacts on local and regional economy, potential long term losses. Serious impact on the environment may result in permanent damage.

LIKELIHOOD	Negligible	> 0.005%	> 1 in 20,000 Chance
	Rare	> 0.05%	> 1 in 2,000 Chance
	Unlikely	> 0.5%	> 1 in 200 Chance
	Possible	> 5%	> 1 in 20 Chance
	Probable	> 50%	> 1 in 2 Chance

Methodology

The hazards have been outlined in a generic format as this is the basis of response planning within the county, which follows nationally agreed best practice. The generic hazards have been assessed for the likelihood of the event happening and the potential impact that they may have within the county. The likelihood and impact values are agreed through the multi-agency Risk Assessment Working Group on behalf of the NYLRF. When assessing the impact of the hazard, the economic, health and social implications on the community are considered.

Risk Rating

Low

Low 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 assessment shows a substantial change, prompting a move to another category.

Medium

Medium 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 these being managed under generic emergency planning arrangements.

High

High 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 need consideration after those risks classed as 'very high'. Consideration should be given to the development of ways to reduce or eliminate the risk where possible. Mitigation in the form of at least (multi-agency) general planning and training should also be put in place and the risk monitored regularly.

Very High

Very High 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 ways should be developed to reduce or eliminate the risk where possible and also that mitigation (in the form of multi-agency planning and training for these hazards) should be put in place and the risk monitored regularly. Consideration should be given to planning specifically for the risk rather than general planning.

Risk Matrix March 2011

IMPACT

Catastrophic (5)	H44a				
Significant (4)	H11 H15 H16 H49	H19 H24 H50	H14b H25 H26 H40 HL16 HL18	H21 H23 HL12 HL19	
Moderate (3)	H42 HL02 HL08 HL11 HL30 HL34 HL37	H39 H41 HL03 HL07 HL09 HL14 HL22 HL28 HL33	H17 H18 H30 H38 H43 H45 H46 H48 HL24 HL42	H14a H31 HL04 HL10 HL17 HL20	
Minor (2)	H44b H52 HL21	H12	H33		
Insignificant (1)	HL23 HL26				
	Negligible (1)	Rare (2)	Unlikely (3)	Possible (4)	Probable (5)

LIKELIHOOD

Public Risk Register 2013

NYFRS Risk Ref:	Hazard or threat category	Hazard or threat sub- category	Outcome description	Likelihood	Impact	Risk rating
H01	Industrial accidents and environmental pollution	Fire or explosion at a gas terminal as well as LPG, LNG, and other gas onshore feedstock pipeline and flammable gas storage sites.	Upto 3km around site causing upto (from 50) 500 fatalities and (150 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. Gas shortage not expected but some disconnections of the intensive users. Disruption to transport services (road and rail) locally for up to a week and provision of health services locally.	N/A	N/A	N/A
H02	Industrial accidents and environmental pollution	Fire or explosion at an onshore ethylene gas pipeline	Upto 3km around site causing upto 500 fatalities and 1500 casualties.	N/A	N/A	N/A
H03	Industrial accidents and environmental pollution	Fire or explosion at an oil refinery	Upto 3km around site causing (from 10) upto 500 fatalities (from 150 to) 1500 casualties. Depending on the location and size of the release, the fire could burn for several days. Impact on the health service plus additional medical support might be required. With the loss of one refinery for a short period the UK could still continue without any shortages, however there would be increased pressure on other plants.	N/A	N/A	N/A
H04	Industrial accidents and environmental pollution	Fire or explosion at a fuel distribution site or a site storing flammable and/or toxic liquids in atmospheric pressure storage tanks.	Upto 3km around site causing (from 10) upto 150 fatalities and (100 to) 2000 casualties. Might be disruption to air transport in the short-term until fuel supply redirected. Short-term regional excessive demands on health care services. Closure of roads in locality for a short period of time.	N/A	N/A	N/A
H05	Industrial accidents and environmental pollution	Fire or explosion at an onshore fuel pipeline.	Upto 1km around site causing upto 100 fatalities and 500 casualties	N/A	N/A	N/A
H06	Industrial accidents and environmental pollution	Fire or explosion at an offshore oil/gas platform	Local to site causing upto 200 fatalities and upto 200 casualties.	N/A	N/A	N/A
H07	Industrial accidents and environmental pollution	Explosion at a high pressure gas pipeline.	Local to site causing upto 200 fatalities and upto 200 casualties.	N/A	N/A	N/A
H08	Industrial accidents and environmental pollution	Very Large toxic chemical release	Up to 10km from the 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 dioxide or trioxide gas. Huge challenge to health care providers. Water supplies might be at risk. Contamination of land could lead to avoidance of certain foodstuffs.	N/A	N/A	N/A

NYFRS Risk Ref:	Hazard or threat category	Hazard or threat sub- category	Outcome description	Likelihood	Impact	Risk rating
H09	Industrial accidents and environmental pollution	Large toxic chemical release	Up to 3km from site of toxic chemical release causing up to 50 fatalities and up to 2000 casualties. This risk could result in environmental contamination with associated environmental impacts. Depending on the nature and extent of the contamination there could be impacts on air, land, water, animal welfare, agriculture and waste management. This risk may require remediation and /or decontamination. Excessive demands on healthcare services locally both short term and Long term. Water supplies might be at risk. Contamination of farm land could lead to avoidance of certain foodstuffs	N/A	N/A	N/A
H10	Industrial accidents and environmental pollution	Radioactive substance release from a nuclear reactor.	The consequences of an accident at a nuclear reactor are a release of radioactive material. This release could have local, regional, national and international implications, with up to 10 immediate deaths estimated on site, and with long term casualties being estimated as being of the order 1500.	N/A	N/A	N/A
H11	Industrial accidents and environmental pollution	Accidental release of radioactive material from incorrectly handled or disposed of sources.	Up to 5 fatalities and up to 100 contaminated people requiring medical monitoring. Worried people may present at hospitals. Radiation may spread over a range of several km's but most concentration where source is opened. This risk could result in environmental contamination with associated environmental impacts. Depending on the nature and extent of the contamination there could be impacts on air, land, water, animal welfare, agriculture and waste management. This risk may require remediation and /or	1	4	Medium 4
H12	Industrial accidents and environmental pollution	Biological substance release from facility where pathogens are handled deliberately (e.g. pathogen release from containment laboratory).	Up to 10 fatalities and serious injuries or off site impact requiring up to 1000 casualties.	2	2	Low 4
H14A	Industrial accidents and environmental pollution	Major contamination incident with widespread implications for the food chain, arising from: 1.Industrial accident (chemical, microbiologica, nuclear) affecting food production areas e.g. Chernobyl, Sea Empress oil spill, animal disease.	There may be direct animal and consumer health effects arising from this incident. We assume a small number of fatalities (5) and casualties (50), although the public health implications of food incidents vary widely. It should be noted that events such as these that cause an increase in exposure to human cacinogens, raise the risk of fatality even though the casualtie cannot be identified. Additionally there may be food production/marketing implications depending on the scale and area affected (e.g. major shellfisheries, dairy, livestock production areas). Consumer confidence may also be affected leading to lost markets and, where staple products (e.g. bread or milk) are affected, potential panic buying.	4	3	High 12
H14B	Industrial accidents and environmental pollution	2.Contamination of animal feed e.g. dioxins, BSE.	There may be direct animal and consumer health effects arising from this incident. We assume a small number of fatalities (5) and casualties (50), although the public health implications of food incidents vary widely. It should be noted that events such as these that cause an increase in exposure to human cacinogens, raise the risk of fatality even though the casualtie cannot be identified. Additionally there may be food production/marketing implications depending on the scale and area affected (e.g. major shellfisheries, dairy, livestock production areas). Consumer confidence may also be affected leading to lost markets and, where staple products (e.g. bread or milk) are affected, potential panic buying.	3	3	High 9

NYFRS Risk Ref:	Hazard or threat category	Hazard or threat sub- category	Outcome description	Likelihood	Impact	Risk rating
H14C	Industrial accidents and environmental pollution	Incidents arising from production processes eg adulteration of chilli powder with Sudan 1 dye or melamine contamination of milk	There may be direct animal and consumer health effects arising from this incident. We assume a small number of fatalities (5) and casualties (50), although the public health implications of food incidents vary widely. It should be noted that events such as these that cause an increase in exposure to human carcinogens, raise the risk of fatality even though the casualty cannot be identified. Additionally there may be food production/marketing implications depending on the scale and area affected (e.g. major shellfisheries, dairy, livestock production areas). Consumer confidence may also be affected leading to lost markets and, where staple products (e.g. bread or milk) are affected, potential panic buying.	3	3	High 9
H15	Industrial accidents and environmental pollution	Maritime pollution	Spillage of 100,000 tonnes of crude oil into the sea polluting up to 200km of coastline. The risk could result in environmental contamination with associated environmental impacts. Depending on the nature and extent of the contamination there could be impacts on air, land, water, animal welfare, agriculture and waste management. This risk may require remediation and/or decontamination.	1	4	Medium 4
H16	Transport accident	Aviation accident over semi-urban area	Loss of up to two aircraft and passengers, with debris over a semi-urban area.	1	4	Medium 4
H17	Severe Weather	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. Upto 50 fatalities and 500 casualties with short term disruption to infrastructure including power, transport networks, homes and businesses.	3	3	High 9
H18	Severe Weather	Low temperatures and heavy snow	Snow falling and lying over most of the area for at least 1 week. After an initial fall of snow there is further snow fall on and off for at least 7 days. Most lowland areas experience some falls in excess of 10cm, a depth of snow in excess of 30cm and a period of at least 7 consecutive days with daily mean temperature below -3C. Upto 1000 fatalities and thousands of casualties, mainly amongst the elderly and there is likely to be some disruption to transport networks, businesses, power supply and water supply, and also school closures.	4	3	Very High 12
H19	Severe Weather	Flooding; major coastal and tidal flooding affecting more than two UK regions	Major coastal regions and tidal reaches of rivers affected. Major sea surge, tides, gale force winds and potentially heavy rainfall.Excessive tide levels and many coastal and/or estuary defences overtopped or failing. Drains 'back-up'. Predicted inundation from any breaches of defences would be rapid and dynamic with minimal warning and no time to evacuate. Inundation from over-topping of defences would allow as little as 1 hour to evacuate. Widespread structural damage. Flooding of up to 300,000 properties for up to 14 days. Up to 150 fatalities, up to 2000 missing persons (missing means not accounted for during the first 48 hours before Police can reunite with family or friends) and 2000 casualties.Up to 400,000 evacuees (people requiring assistance with evacuation is less i.e. 130,000 however people may be asked by Police to evacuate from areas that will be cut off due to flood water aswell as those areas that area at risk of actual flooding) Upto 40,000 people in need of rescue or assistance in situ over a 36 hour period.	2	4	High 8

NYFRS Risk Ref:	Hazard or threat category	Hazard or threat sub- category	Outcome description	Likelihood	Impact	Risk rating
H21	Severe Weather	Flooding: Severe inland flooding affecting more than 2 UK regions..	<p>A single massive inland event or multiple concurrent regional events following a sustained period of heavy rainfall extending over two weeks (perhaps combined with snow melt and surface water flooding). The event would include severe fluvial flooding affecting a large, single urban area. Closure of primary transport routes. Some infrastructure failure. Loss of essential services (gas, electricity & telecoms) to 250,000 homes and businesses for upto 14 days. Sediment movement and disruption to water supplies. Significant regional economic damage.</p> <p>Across urban and rural areas (with a greater proportion occurring in urban areas) flooding of upto 50,000 properties (home and business) for upto 10 days. Up to 10 fatalities and 500 casualties and 20 missing persons (missing means not accounted for during the first 48 hours before Police can reunite with family or friends) upto 55,000 people needing assistance with evacuation. Up to 6,000 people in need of rescue or assistance in situ.</p>	4	4	Very High 16
H23	Human Health	Influenza type disease (pandemic)	<p>Each pandemic is different and the nature of the virus and its impacts cannot be known in advance. Previous pandemic have led to 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 in a reasonable worst case scenario. High number of cases could overwhelm health and other critical services and adversely affect business and the economy</p> <p>Pandemic Planning recognised a reasonable worst case scenario clinical attack rate of up to 50% spread over one or more ways with case fatality of up to 2.5%. This means, at the upper end of assumptions, up to some 750,000 excess deaths in the UK across the whole period of the pandemic and over 100,000 population per week at the peak. Probable peak in weeks 6 to 8 following first case, with 22% of total cases occurring at the time.</p>	4	4	Very High 16
H24	Human Health	Emerging infectious diseases	<p>Precise impact will depend upon the effectiveness of antibiotics and antivirals in fighting infection. Based upon the experience of the outbreak of Severe Acute Respiratory Syndrome (SARS) in 2002, the worst case likely impact of such an outbreak originating outside the UK would be cases occurring amongst returning travellers and their families and close contacts, with spread to health care workers within hospital setting. Short term disruption to local hospital intensive care facilities Possible disruption of several weeks to elective procedures Public concern about travel, within and beyond the UK and possible international travel restriction advice.</p>	3	3	Medium 6

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H25	Animal Health	Non-zoonotic notifiable animal diseases (e.g. FMD, Classical Swine Fever, Blue Tongue and Newcastle disease of birds)	<p>The most serious disease in this category is FMD which drives the risk and outcome descriptions</p> <ul style="list-style-type: none"> - A realistic worst case scenario might involve the culling and disposal of up to 4 million animals upto 900 infected premises across GB. - For FMD whole of GB is likely to be declared a 'controlled area' prohibiting the movement of all susceptible livestock unless licensed. - Disruption to rural communities local economies, tourism, and the environment. - Significant impact on farm incomes and allied industries. For a major outbreak many rural industries, including tourism will be affected. Impacts on tourism believed to have been overstated in previous assessments and current assessments assess this impact at 100 million pounds. - 400 million losses to agriculture and food chain industry - loss of disease free status resulting in EU and third country, import bans on livestock and livestock products from susceptible animals. - A major outbreak and realistic worse case scenarios are of much greater scale than that experienced in the most recent outbreak in 2007 but less than in 2001 due to changes in movement regimes and control policies 	3	4	Very High 12
H26	Animal Health	Zoonotic notifiable animal diseases (e.g. Highly Pathogenic Avian Influenza (HPAI), Rabies and West Nile Virus)	<p>The most serious disease in this category is Highly Pathogenic Avian Influenza HPAI which drives the risk and outcome descriptions although all these diseases can result in human death</p> <ul style="list-style-type: none"> - AI is largely disease of birds - The virus does not easily cross from birds to infect humans although there is a theoretical risk of influenza virus reassortment with people with seasonal flu become coinfectd with AI - Potential human health threat (255 deaths from 408 cases worldwide since Dec 2003) - Realistic worse case scenario based on the need to cull and dispose of up to 30 million poultry across GB - Loss of disease free status resulting in EU and thrid country import bans on poultry and captive birds and poultry products - disruption to ural communities, local economies, tourism and the enviroment - economic impact from major outbreak assessed at 60 million pounds <p>The major outbreak scenario is of much greater scale than that experienced in any of the recent outbreaks of avian influenza in the UK where the disease has been contained and has been limited to 1 or 2 infected premises plus associated contact premises</p>	3	4	Very High 12
H30	Fire and Rescue Strike	Emergency Services: loss of Fire and Rescue cover because of Industrial Action	A series of strikes by fire fighters takes place, spread over a period of two months, perhaps lasting up to 48 hours each.	4	3	Very High 12

NYFRS Risk Ref:	Hazard or threat category	Hazard or threat sub- category	Outcome description	Likelihood	Impact	Risk rating
H31	Industrial action	Significant or perceived significant constraint on the supply of fuel eg industrial action by contract drivers for fuel, or by effective fuel blockades.	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. Much would depend on whether drivers from other companies would be prepared to cross picket lines whether companies judged that they were able to maintain safe operations in the presence of picket lines or protests and the extent of the supply of fuel from other locations.	3	3	High 9
H33	Industrial action	Unofficial strike action by prison officers leading to a serious shortfall in the number of personnel available to operate and maintain control of prisons.	A single unofficial strike by prison officers (at a single prison or more widely) lasting 24 hours resulting in a serious shortfall in the number of personnel available to operate and maintain control of prisons, leading to prison riots and/or serious disruption to the CJS.	3	2	Medium 6
H35	Industrial action	Industrial action By Key rail or London underground workers	Strike action resulting in the total shutdown of either London Underground or the rail network on a national scale (eg action by key rail workers eg infrastructure workers such as signallers) for > 3 days. Greater impact if the action occurs in a co-ordinated manner.	1	4	Low 4
H37	International Events	Influx of British Nationals who are not normally resident in the UK.	Up to 10,000 British Nationals (BNs) not normally resident in the UK, returning to UK within a 4-6 week period following conventional war, widespread civil unrest or sustained terrorism campaign against British and other Western nationals.	2	2	Low 4

NYFRS Risk Ref:	Hazard or threat category	Hazard or threat sub- category	Outcome description	Likelihood	Impact	Risk rating
H38	Industrial Technical Failure	Technical failure of a critical upstream oil/gas facility, gas import pipeline or Liquefied Natural Gas import reception facility leading to a disruption in upstream oil and gas production.	Catastrophic accident destroying all or parts of a critical upstream facility and in the worst case, taking months to restore normal levels of service. This could potentially result in up to 11% loss of gas supply to UK which could impact on power generation if demand were high. As 40% of power is generated by gas fired stations then a reduction in generation might be felt. Downstream oil would not be immediately so adversely affected given alternative means of supply.	3	3	High 9
H39	Industrial Technical Failure	Failure of water infrastructure or accidental contamination with a non-toxic contaminant	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.	2	3	Medium 6
H40	Industrial Technical Failure	No notice loss of significant telecommunications infrastructure in a localised fire, flood or gas incident.	Loss of telecommunications for up to 100,000 people for up to 72 hours.	1	3	Low 3
H41	Industrial Technical Failure	Technical failure of national electricity network (Blackstart)	Total blackout for up to 3-5 days due to loss of the National Grid. 3 days is best time. If there is damage to the network (say from storms) this timescale could be extended up to 5 days. Possible loss of like support machines, civil unrest, no alarms, street lighting, gas heating, rail transport, water supplies and mobile (PMT) telecommunications etc. Back up generators available for limited time for individual business and emergency services in some instances.	3	3	High 9
H42	Transport accident	Rapid accidental sinking of a passenger vessel in or close to UK waters	500 fatalities and 1000 casualties, potentially with blockage of major sea lane or port.	1	3	Medium 3
H43	Industrial Technical Failure	Telecommunication infrastructure – human error	Widespread loss of telecommunications (including public land line and mobile networks) at a regional level for up to 3 days	1	4	Medium 4
H44A	Structural	Major reservoir dam failure/collapse	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. Whilst there are a small number of reservoirs which could potentially put thousands of lives at risk, a sensible planning assumption is for up to 200 fatalities and 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. Reservoirs should, of course, be looked at on a case by case basis and Local Authorities will have received flood maps from the Environment Agency for the 2000 or so larger reservoirs in England and Wales in late 2009. Local Authorities will also receive a list of the highest priority reservoirs in their area by spring 2010. Guidance for reservoir planning has also been circulated to Local Authorities	1	5	Medium 5

NYFRS Risk Ref:	Hazard or threat category	Hazard or threat sub- category	Outcome description	Likelihood	Impact	Risk rating
H44B	Structural	Major reservoir dam failure overtopping	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. Whilst there are a small number of reservoirs which could potentially put thousands of lives at risk, a sensible planning assumption is for up to 200 fatalities and 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. Reservoirs should, of course, be looked at on a case by case basis and Local Authorities will have received flood maps from the Environment Agency for the 2000 or so larger reservoirs in England and Wales in late 2009. Local Authorities will also receive a list of the highest priority reservoirs in their area by spring 2010. Guidance for reservoir planning has also been circulated to Local Authorities	1	3	Low 3
H45	Industrial Technical Failure	Technical failure of electricity network	Total shutdown of the electricity supply over an entire region occurring during working week and lasting for 24 hours.	3	3	High 9
H46	Industrial accidents and 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)	Up to 10 fatalities and serious injuries or off site impact resulting in up to 1000 casualties.	4	1	Low 4
H48	Severe Weather	Heat wave (ex HE18, previously HL15)	Daily maximum temperatures in excess of 32 degrees C and minimum temperatures in excess of 15 degrees C over most of the region for at least 5 consecutive days . Upto 1000 fatalities and 5000 casualties, mainly amongst the elderly. There could be disruption to power supply and transport infrastructure.	3	3	High 9
H49	International Events	Loss of drinking water supplies due to a major accident affecting infrastructure	Loss of or non-availability for drinking, of the piped water supply for a population of up to 350,000 for more than 24 hours and up to 2 weeks.	1	4	Medium 4
H50	Severe Weather	Drought	Periodic 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 SofS. The 2.4 million households in London would not be subjected to supply interruptions.	2	4	High 8

NYFRS Risk Ref:	Hazard or threat category	Hazard or threat sub- category	Outcome description	Likelihood	Impact	Risk rating
H53		Disruption to gas supply.	<p>This scenario is assumed to last for two weeks. This scenario leads to supplies of gas from non-storage and „long range“ storage being 60-70 mcm per day less than demand (before market on non-market actions reduce demand) and therefore requiring large flows from medium and short-range storage and demand-side response to balance the market</p> <p>The outcome very much depends on the circumstances in which such a shock occurs, and how the market could respond to the shock. The longer these circumstances persisted the more adverse the impact. Given the assumed two week duration and the range of supply problems, this scenario should therefore be considered as a highly-unlikely worst-case</p> <p>The outcome of the scenario is that: Short-range and medium-range storage could become depleted (or effectively rationed by the market) after one to two weeks depending on how full it was before the event occurred Gas wholesale prices would rise – perhaps progressively – and potentially to very high levels if the shock persists Certain industrial customers would have their supplies of gas interrupted. The volume of gas that has to be provided through demand-side response (DSR) increases progressively over the two week period as the deliverability of medium-range and short-range storage facilities declines. Towards the end of the two week period 20-30 mcm per day of DSR is required to balance the market</p>	1	1	Low 1
H54		Disruption to aviation as a consequence of volcanic ash	Volcanic ash incursions for up to 25 days resulting in sporadic and temporary closures of significant parts of UK airspace for up to a total of 15 days during a three month eruption period. The entire UK mainland and potentially other parts of Europe could be affected for up to 10 of these days. A single period of closure within the 3 month eruptive episode may last up to 12 consecutive days, depending on meteorological conditions.	3	2	Medium 6
HL01	Industrial accidents and environmental pollution	Fire or explosion at a gas terminal or involving a gas pipeline.	Up to 3km around site, causing up to 10 fatalities and up to 100 casualties	N/A	N/A	N/A
HL02	Industrial accidents and environmental pollution	Localised 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 250 casualties.	1	3	Medium 3
HL03	Industrial accidents and environmental pollution	Localised industrial accident involving small toxic release.	Up to 1km from site causing up to 10 fatalities and 100 casualties.	2	3	Medium 6
HL04	Industrial accidents and environmental pollution	Major pollution of controlled water	Pollution incident impacting upon controlled waters, (e.g. 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 points, major impact on amenity (i.e. tourism), serious impact on human health.	4	3	High 12

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HL07	Industrial accidents and environmental pollution	Industrial explosions and major fires	Up to 1km around site, causing up to 20 casualties, some of a serious nature. Explosions would cause primarily crush/cuts and bruise-type injuries, as well as burns.	2	3	Medium 6
HL08	Transport accident	Fire, flooding, stranding or collision involving a passenger vessel in or close to UK waters or on inland waterways, leading to the ship's evacuation	Up to 50 fatalities and up to 100 casualties	1	3	Medium 3
HL09	Transport accident	Aviation accident	Causing up to 50 fatalities and up to 250 casualties.	2	3	Medium 6
HL10	Transport accident	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.	4	3	High 12
HL11	Transport accident	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	2	2	Medium 4
HL12	Transport accident	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 rails 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.	4	4	Very High 16
HL13	Transport accident	Maritime accident or deliberate blockade resulting in blockage of access to key port, estuary, maritime route for more than one month.	Loss of port is likely to have an initial wider impact, but will quickly reduce as shippers seek alternative ports or methods of shipping. Economic impact on local dependent businesses.	N/A	N/A	N/A
HL14	Transport accident	Local (road) 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.	2	3	Medium 6

Risk ref:	Hazard or threat category	Hazard or threat sub- category	Outcome description	Likelihood	Impact	Risk rating
HL16	Severe Weather	Major local coastal / tidal flooding (affecting more than 1 region)	Sea surge, spring tides, galeforce winds, heavy rainfall affecting more than 1 region, some defences overtopped or failing at multiple locations. Flooding of 1000 to 10,000 properties for up to 14 days. Up to 20 fatalities, 300 casualties and up to 200 missing persons. Up to 50,000 people (including tourists) in coastal villages and towns evacuated from flooded sites. People stranded over a large area and up to 5,000 people in need of rescue. Up to 10,000 people needing assistance with sheltering for up to 12 months. 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 : widespread disruption for 7-14 days, salt damage, road and bridge damage, debris and contaminated water supplies and pollutants from affected businesses. Rural impacts include: widespread livestock carcasses, waterborne disease. Sewage treatment works flooded. Numerous properties destroyed. Many more uninhabitable for 12 months.	3	4	Very High 12
HL17	Severe Weather	Significant, local coastal / tidal flooding (in 1 region)	Sea surge, high tides, galeforce winds affecting the coastline and one region, a defence system overtopped or failing at a single location. Localised impact with infrastructure affected and up to 1000 properties flooded for up to 14 days. Up to 10 fatalities, 150 casualties, and up to 100 missing persons. Up to 20,000 people (including tourists) in coastal villages and towns evacuated from flooded sites. People stranded over a large area and up to 2,000 people in need of rescue. Up to 3,000 people needing assistance with sheltering for up to 12 months. Multi-agency response invoked with some local evacuation and cordoning off of affected areas. Tidal inundation would be rapid and wave impact would cause structural damage to properties. Impact on infrastructure includes: localised disruption for up to 7 days, salt damage, road damage, debris and contaminated local water supplies and pollutants from affected businesses. Rural impacts include : livestock carcasses, waterborne disease. Some properties destroyed and others uninhabitable for 12 months.	4	3	High 12
HL18	Severe Weather	Local/Urban flooding (fluvial or surface run-off)	A sustained period of heavy rainfall extending over two weeks, perhaps combined with snow melt, resulting in flash flooding and steadily rising river levels across entire counties and could threaten a large urban town. Localised flooding of 1000 to 10,000 properties for 2-7 days. Up to 15 fatalities and 150 casualties, up to 15,000 people evacuated. Up to 500 people stranded over a large area and in need of rescue. There would be major impact on road and rail links, marking them impassable for up to 5 days. Impact on infrastructure includes: some buildings collapse, water damage, road and bridge damage. Sediment movement and contamination of water supplies. Loss of essential services (gas, electricity & telecoms) to 20,000 homes for up to 14 days. Widespread disruption for 7-14 days, significant debris and pollutants from affected businesses. Up to 1000 people needing assistance with sheltering for up to 12 months. Rural impacts include: widespread livestock carcasses, waterborne disease. Sewage treatment works flooded. Up to 50 properties destroyed and many more inhabitable. Up to 2000 people needing assistance with sheltering for up to 12 months	3	4	Very High 12

NYFRS Risk Ref:	Hazard or threat category	Hazard or threat sub- category	Outcome description	Likelihood	Impact	Risk rating
HL19	Severe Weather	Local fluvial flooding	A sustained period of heavy rainfall extending over two weeks, perhaps combined with snow melt, resulting in flash flooding and steadily rising river levels within a region. Localised flooding of 100 to 1000 properties for 2-7 days. Up to 5 fatalities and 50 casualties. Up to 5000 people evacuated. Up to 200 people stranded over a large area and in need of rescue. There would be some impact on minor roads and some A roads and truck roads impassable for a time. Some main rail lines may need to be closed for a week (for repairs etc). most water ways would be closed to traffic because of strong currents and high water levels. Impact on infrastructure includes, water damage, road and bridge damage. Sediment movement and contamination of local water supplies. Localised loss of essential services (gas, electricity & telecoms) to 5000 for up to 14 days. Up to 250 people needing assistance with sheltering for up to 12 months. Substantial disruption within a	4	4	Very High 16
HL20	Severe Weather	Localised, extremely hazardous flash flooding	Heavy localised rainfall in steep valley catchments leading to extremely hazardous flash flooding (e.g. high velocities and depths). Likely that no flood defences in place. Possible no flood warning service available/ or suddenness of event means timely flood warnings not possible. Flooding of up to 200 properties.(NB: the outcome is essentially the same as H44-dam or reservoir failure).	4	3	High 12
HL21	Structural	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.	1	2	Low 2
HL22	Structural	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.	2	2	Low 4
HL23	Structural	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.	1	1	Low 1
HL24	Human Health	Legionella/meningitis outbreak	Localised outbreak of a disease which could cause up to 10 fatalities and up to 50 casualties	4	3	High 12
HL25	Industrial accidents and environmental pollution	Fire or explosion at a gas terminal as well as LPG, LNG, and other gas onshore feedstock pipeline and flammable gas storage sites.	Upto 1km around site, causing up to 50 fatalities and 150 casualties.	N/A	N/A	N/A
HL26	Industrial accidents and environmental pollution	Localised fire or explosion at an onshore ethylene gas pipeline	Up to 1km around site, causing up to 150 fatalities and 450 casualties	1	1	Low 1

NYFRS Risk Ref:	Hazard or threat category	Hazard or threat sub- category	Outcome description	Likelihood	Impact	Risk rating
HL27	Industrial accidents and environmental pollution	Localised fire or explosion at an oil refinery.	Upto 1km around site, causing upto 150 fatalities and 500 casualties.	N/A	N/A	N/A
HL28	Industrial accidents and environmental pollution	Localised fire or explosion at a fuel distribution site or tank storage of flammable or toxic liquids.	Up to 1km around site, causing up to 15 fatalities and 200 casualties.	2	3	Medium 6
HL30	Industrial accidents and environmental pollution	Localised explosion at a natural gas pipeline.	Causing up to 100 fatalities and up to 100 casualties.	1	3	Medium 3
HL31	Industrial accidents and environmental pollution	Limited radioactive substance release from a nuclear accident	Up to 1 km from site causing up to 50 fatalities and 500 casualties	N/A	N/A	N/A
HL33	Industrial accidents and environmental pollution	Forest or moorland fire	Forest or moorland fire across up to 50 hectares. Evacuation of up to 100 residential homes required. Up to 5 fatalities and 20 casualties.	2	3	Medium 6
HL34	Transport accident	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.	Up to 50 fatalities and 100 casualties	1	3	Medium 3
HL37	Transport accident	Release of significant quantities of hazardous chemicals/materials as a result of major shipping accident	Fatalities and casualties unlikely. Significant environmental / ecological damage.	1	3	Medium 3
HL42	Industrial action	Emergency Services	A number of three day strikes with significant support over a two month period affecting a single emergency service.	4	3	Very High 12
		Key For Risk Rating:				
			Very High			
			High			
			Medium			
			Low			
			New			
			Discounted			