GRAMPIAN
STRATEGIC
COORDINATING
GROUP

Emergency Response & Recovery

COMMUNITY RISK REGISTER 2008/2009

Foreword by Chair of Grampian Strategic Coordinating Group

The Grampian Strategic Coordinating Group (SCG) promotes integrated emergency planning throughout the North East of Scotland and is formed from those agencies having primary responsibility to provide a response to any major civil emergency or natural disaster. The Committee is an acknowledgement that no single agency has all the skills and resources that may be needed to deal with such occurrences and only by the sharing and coordinating of resources can the best response be delivered.

The Civil Contingencies Act 2004 places a legal duty on Category 1 responders to produce a Community Risk Register. This register has been created to provide public information about the hazards, which exist within the North East of Scotland and those control measures in place to mitigate their impact.

Chief Constable

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Grampian Area

Grampian comprises three unitary authority areas namely; Moray, Aberdeenshire and Aberdeen City Council. Health cover is provided by NHS Grampian who are responsible for the area within the Grampian boundary also recognised by Grampian Police and Grampian Fire and Rescue Service. This encompasses an area of approximately 8500 sq kilometres with a population of over 520,000.

Strategic Coordinating Groups

Integrated Emergency Management (IEM) is led by a Strategic Coordinating Group (SCG) in each of Scotland's eight Police areas. For many years a number of agencies in Grampian with a role to play in IEM, have worked closely together to plan for, and respond to, serious emergencies. This group is Grampian's Strategic Coordinating Group (Grampian SCG) which was previously known as the Grampian Joint Emergencies Executive Committee (GJEEC). Membership of Grampian SCG and its associated support groups is drawn from Category 1 and 2 responders as defined by the CCA, and other key response organisations.

The Purpose of the Community Risk Register

The Grampian CRR has been compiled by Grampian SCG in accordance with the Civil Contingencies Act 2004 and its associated Regulations and Guidance as outlined in the Scottish Executive document Preparing Scotland www.scotland.gov.uk/publications/2006/02/27140215 and as detailed in the UK Resilience website on www.ukresilience.info.

An 'Emergency' is defined in the CCA as '**an event or situation which threatens serious damage to human welfare in a place in the UK, the environment of a place in the UK, or war or terrorism which threatens serious damage to the security of the UK**'.

To constitute an emergency this event or situation must also require the implementation of special arrangements by one or more Category 1 responders.

The CRR is intended to inform the communities of Grampian of a range of potentially disruptive events that the responder agencies have considered and to confirm the state of preparedness to deal with the occurrence of such emergencies ensuring a swift return to normality. The CRR will provide the basis for the responder agencies to develop, implement and confirm emergency plans to meet the requirements of Grampian SCG.

The inclusion of a particular risk in the CRR does not necessarily indicate that Grampian SCG expect that the risk will lead to an actual event or occurrence, or occur at the scale described. The Risk Assessments have been made on credible worst case scenarios applied to identified hazards or threats that are present within the Grampian area.

How has the Community Risk Register been compiled?

The areas of potential risk based on national guidance have been reviewed by Grampian SCG and are listed in the register. Certain risk categories from the national guidance were not relevant to Grampian therefore excluded from this risk register.

An assessment has been made of the ***Likelihood*** and ***Impact*** of an event occurring, using historical and empirical evidence and projected occurrence data over a five-year period, to give a ***Risk Rating***.

- The ***Likelihood*** has been assessed following consideration of data of local, regional and nationally occurring events, and has been given a score of 1 –5 ; 1 being the lowest (negligible) and 5 being the highest (probable).
- The potential ***Impact*** has been considered against each event and its likely impact on the ***Health, Social, Economic and Environmental*** aspects of our Community. The scoring values are 1 – 5; 1 being the lowest (insignificant) and 5 being the highest (catastrophic). The risk assessment matrix can be found on page 10 of this register.
- The likelihood and impact assessments have been used to develop a ***Risk Rating*** of Low, Medium, High or Very High by use of the ***Risk Assessment Matrix*** (p10) as defined in the CCA guidance, which sets the risk level against the likelihood and impact ratings.
- A brief description of the controls currently in place within the Grampian SCG area has been provided.

The risk assessments cover non-malicious events (hazards) and malicious events (threats). Given the sensitivity of the information supporting these risk assessments and the potential for use by adversaries, specific details will not be on the published register on the internet.

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

Enquiries concerning the CRR, should in the first instance be directed in writing to the:

Civil Contingencies Coordinator
Grampian Police
Operational Planning Department
Force Headquarters
Queen Street
ABERDEEN
AB10 1ZA

LIKELIHOOD AND IMPACT SCORING SCALES

Likelihood Scoring Scale – Quantitative and Qualitative Measures

Level	Descriptor	Indicative Chance of Occurrence in 5 Year Period	General Description
1	**Negligible**	0.005% to 0.05% or 1 in 20,000 up to 1 in 2,000 chance	May occur only in very exceptional circumstances. May occur with a chance of between 1 in 100,000 to 1 in 10,000 per year at most.
2	**Rare**	Greater than 0.05%, up to 0.5% or > 1 in 2,000 and up to 1 in 200 chance	Very few recorded incidents or anecdotal evidence; and/or no recent incidents in associated organisations, facilities or communities; and/or little opportunity, reason or means to occur. May occur with a chance between one in 10,000 and 1 in 1,000 per year.
3	**Unlikely**	Greater than 0.5%, up to 5 % or > 1 in 200 and up to 1 in 20 chance	Might occur at some time; and/or few, infrequent, random recorded incidents or little anecdotal evidence; and/or few incidents in associated or comparable organisations, facilities or communities; and/or some opportunity, reason or means to occur. May occur with a chance of between 1 in 1,000 and 1 in 100 per year.
4	**Possible**	Greater than 5%, up to 50 % or > 1 in 20 and up to 1 in 2 chance	Regular recorded incidents and strong anecdotal or predictive evidence. May occur/recur with a chance of between 1 in 100 and 1 in 10 per year.
5	**Probable**	Greater than 50% or 1 in 2 chance	High level of recorded incidents and/or very strong predictive evidence. Likely to occur/recur with a chance of more than 1 in 10 per year.

Note: The likelihood scale above changes exponentially - by an order of magnitude (times 10) - per level of the scale – a logarithmic scale. This is because many of the events covered in any risk assessment will tend to be unlikely and the majority will then cluster at the lower end of a linear scale of likelihood. This makes it difficult to discriminate between event types and gives a picture of little value to planners. In addition, for many types of event it is only possible to differentiate likelihood by order of magnitude because no accurate statistical or historical data is available to support a more definitive analysis. The ">" symbol in the table means "greater than".

Descriptions of hazards such as "a one in one hundred year event" are equivalent to the likelihood for this scale of event expressed as a fractional or percentage probability for each year, i.e. for this example, a "1 in 100 per year" likelihood, or a "1% per year" likelihood of this scale of event happening. This is the format used in the general descriptions column of the above table. This yearly likelihood becomes 5 times greater (more likely) extended over a five year period – i.e. for the above example - a 1 in 100 per year likelihood becomes a 5% or 1 in 20 likelihood over five years.

IMPACT SCORING SCALE – QUALITATIVE MEASURES

Impact scoring scale – Qualitative Measures

Level	Descriptor	Categories of Impact	Description of Impact
1	Insignificant	Health	- Insignificant number of injuries or impact on health.
		Social	- Insignificant number of persons displaced and insignificant personal support required. - Insignificant disruption to community services, including transport services and infrastructure
		Economic	- Insignificant impact on local economy
		Environment	- Insignificant impact on environment.
2	Minor	Health	- Small number of people affected, no fatalities, and small number of minor injuries with first aid treatment
		Social	- Minor damage to properties. - Minor displacement of a small number of people for less than 24 hours and minor personal support required. - Minor localised disruption to community services or infrastructure for less than 24 hours.
		Economic	- Negligible impact on local economy and cost easily absorbed
		Environment	- Minor impact on environment with no lasting effects.

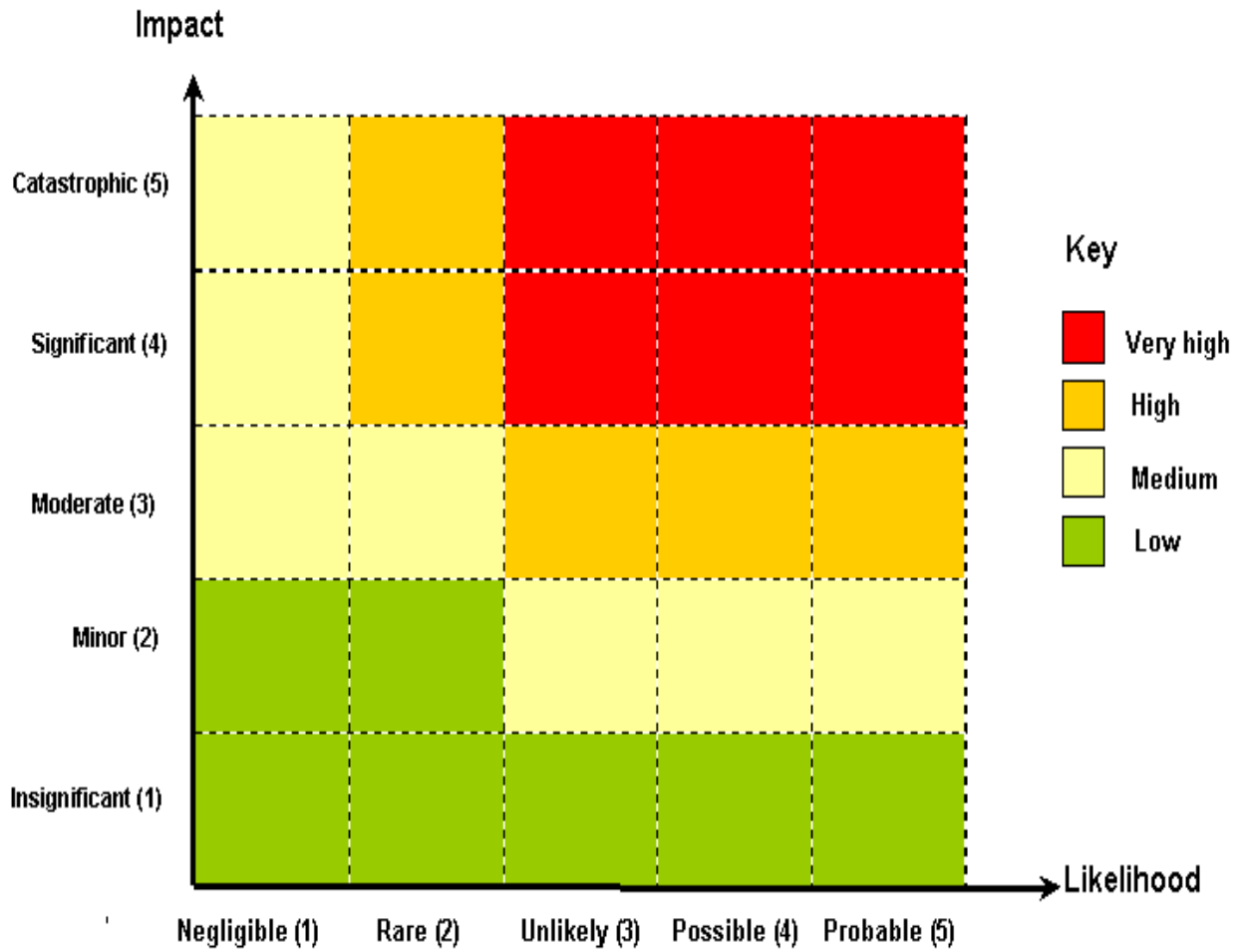
Level	Descriptor	Categories of Impact	Description of Impact
3	Moderate	Health	- Sufficient number of fatalities with some casualties requiring hospitalisation and medical treatment and activation of major accident procedures in one or more hospitals.
		Social	- Damage that is confined to a specific location, or to a number of locations, but requires additional resources. - Localised displacement of more than 100 people for 1-3 days. - Localised disruption to infrastructure and community services.
		Economic	- Limited impact on local economy with some short-term loss of production, with possible additional clean up costs.
		Environment	- Limited impact on environment with short-term or long-term-effects.
4	Significant	Health	- Significant number of people in affected area impacted with multiple fatalities, multiple serious or extensive injuries, significant hospitalisation and activation of major accident procedures across a number of hospitals.
		Social	- Significant damage that requires support for local responders with external resources. - 100 to 500 people in danger and displaced for longer than 1 week. Local responders require external resources to deliver personal support. - Significant impact on and possible breakdown of delivery of some local community services.
		Economic	- Significant impact on local economy with medium-term loss of production - Significant extra clean up and recovery costs.
		Environment	- Significant impact on environment with medium- to long-term effects.

Level	Descriptor	Categories of Impact	Description of Impact
5	Catastrophic	Health	- Very large numbers of people in affected area(s) impacted with significant numbers of fatalities and large number of people requiring hospitalisation with serious injuries with longer-term effects.
		Social	- Extensive damage to properties and built environment in affected area requiring major demolition. - General and widespread displacement of more than 500 people for prolonged duration and extensive personal support required. - Serious damage to infrastructure causing significant disruption to, or loss of, key services for prolonged period. Community unable to function without significant support.
		Economic	- Serious impact on local and regional economy with some long-term, potentially permanent, loss of production with some structural change. - Extensive clean up and recovery costs.
		Environment	- Serious long-term impact on environment and/or permanent damage.

Assessment of Impact. The impact scoring should be based on the estimations of scale provided in Annex 2 or the additional threats guidance - or as determined by the appropriate Category 1 Responder(s) and UK, Scottish or other organisations, using the approach suggested in this guidance.

The impact categories are given equal weighting and the overall impact score for each hazard or threat - for use in the risk rating matrix - is obtained by calculating the arithmetic mean (total divided by 4) of the four levels scored – i.e. one score for each category.

RISK RATING MATRIX



DEFINITIONS OF 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 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 the risk 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.

Glossary of Abbreviations

CCA	-	Civil Contingencies Act 2004
COMAH	-	Control Of Major Accident Hazard regulations
CRR	-	Community Risk Register
GFRS	-	Grampian Fire & Rescue Service
HSE	-	Health and Safety Executive
MCA	-	Maritime and Coastguard Agency
MACR	-	Major Accident Control Regulations
SCG	-	Strategic Coordinating Group
SEPA	-	Scottish Environment Protection Agency

Grampian Category 1 Responders

Moray Council
Aberdeenshire Council
Aberdeen City council
Grampian Police
Grampian Fire and Rescue Service
Scottish Ambulance Service
NHS Grampian
Scottish Environment Protection Agency
Maritime Coastguard Agency

Further information regarding "responders" can be found at www.scotland.gov.uk/publications/2006/02/27140215

Grampian SCG Members

Grampian SCG is made up of the heads of the following organisations, or senior managers working on their behalf.

Moray Council	Scottish Environment Protection Agency
Aberdeenshire Council	Maritime Coastguard Agency
Aberdeen City Council	Procurator Fiscal
Grampian Police	Scottish Utilities Contingency Planning Group
Grampian Fire and Rescue Service	HM Armed Forces
Scottish Ambulance Service	Scottish Government Civil Contingencies Unit
NHS Grampian	Animal Health

GRAMPIAN SCG EMERGENCY PLANS

Having considered all the hazards listed in the CRR, Grampian SCG maintains emergency plans based on the Risk Assessments which support each identified hazard. The risk assessments and plans contain detailed information about each hazard and, as a security precaution, they are not published in the public domain. Each plan is supported by a Liaison Group whose purpose is to; review the risk assessment, maintain the plan and exercise the plan. The plans are as follows:

Generic Emergency Response Process	Major Oil Pollution
Public Communications	Pipelines
Rest Centre & Humanitarian Assistance Centre	Aberdeen Airport
Mass Fatalities	Aberdeen Harbour
Fuel	Peterhead Harbour
CBRN/Hazmat Site Clearance	Mass Evacuation
Pandemic Flu Wider Consequence Management	Pittodrie
St Fergus COMAH	AECC
Cruden Bay COMAH	Prisons
Point Law COMAH	Flooding
Moray Distilleries COMAH	Animal Diseases
Gleaner Oils	Moray RAF Stations MACR

COMMUNITY RISK REGISTER FOR GRAMPIAN

Date of Version: 31 July 2008 | **Next review date: 30th June 2009**

GRAMPIAN STRATEGIC COORDINATING GROUP

Risk Ref. and Hazard or Threat	Hazard or Threat Sub-Category	Hazard or Threat Description and scale	Variation and Further Information	Likelihood	Impact	Risk Rating
	INDUSTRIAL TECHNICAL FAILURE					
	Generic Emergency Consequences	Intense media interest . Temporary Mortuary. Welfare & Rest Centers.				
H1	Fire or explosion at a gas LPG or LNG terminal (or associated onshore feedstock pipeline) or 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.	Risk is based on a large industrial complex, gas processing site or gas storage site near to a populated (i.e. urban) area. Impact on environment, including persistent/widespread impact on air quality.	2	3.75	High
HL7	Industrial explosions and major fires	Up to 1km around site, causing up to 20 casualties, some of a serious nature. Explosions would cause primarily crush /cuts and bruise-type injuries, as well as burns.	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 local area, the higher the likelihood (i.e. closer to 2).	2	2.5	Medium
H4	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 up to 2000 casualties.	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 assumed to be more or less evenly distributed across the country.	2	3.75	High
H5	Fire or explosion at an onshore fuel pipeline	Up to 1km around site causing up to 100 fatalities and up to 500 casualties.	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. Plant of this nature is assumed to be more or less evenly distributed across the country, although there may be 'clustering' in (e.g.) coastal and industrial areas. Clearly, with more plants of this nature in the local area, the higher the likelihood (i.e. closer to 1).	1	4	Medium
H6	Fire or explosion at a non-critical offshore oil/gas platform.	Local to site causing up to 200 fatalities and up to 200 casualties.	Piper Alpha incident was of this scale, but had no security of gas supply implications. This risk assumes a similar event, which has no impact on oil or gas supplies as this is covered in H38	2	3	High

HL2	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 up to 250 casualties.	Plant of this nature is assumed to be more or less evenly distributed across the country, although there may be 'clustering' in (e.g.) coastal and industrial areas. Clearly, with more plants of this nature in or near the local area, the higher the likelihood (i.e. closer to 3). Impact on environment, including persistent/widespread impact on air quality.	1	3.25	Medium
H11	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. 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.	Assume radioactive material is a medical source from radiotherapy machine.	1	2.5	Medium
H12	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 offsite impact requiring up to 1,000 casualties.	Assume release in an urban area. Biological agent (mainly Hazard Group 3 & 4 human & animal pathogens in accordance with the COSHH Regulations 2002) release from containment (e.g. infection of laboratory worker or animal) – example SARS release from lab in China resulted in 2 deaths & several hundred people quarantined.	3	2.5	Medium
H14	Major contamination incident with widespread implications for the food chain, arising from: (1) Industrial accident (chemical, microbiological, nuclear) affecting food production areas e.g. Chernobyl, Sea Empress oil spill, animal disease. (2) Contamination of animal feed e.g. dioxins, BSE. (3) Incidents arising from production processes, e.g. adulteration of chilli powder with Sudan I dye.	Food production/ marketing implications depending on scale and area affected e.g. major shell fisheries, dairy, livestock production areas. Potential direct animal and consumer health effects. Consumer confidence affected leading to lost markets or panic buying.	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.	4	4	Very High
H15	Maritime Pollution	Release of 100,000 tonnes of crude oil into the sea, polluting up to 200km of coastline.	A large fully laden oil tanker sinks in the approach to a UK port. Assume no loss of access to the port.	1	3.5	Medium

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.		**2** reduced to 2 as per SEPA risk assessment	**3.5**	**Very High**
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.		**2** reduced to 2 as per SEPA risk assessment	**4**	**High**
	TRANSPORT ACCIDENTS					
HL8a	Damage to a passenger vessel resulting in requirement to evacuate or abandon	Major passenger vessel which due to stranding, collision, fire or flooding requires evacuation of approx 500 - 2000 pax. Fatalities and casualties expected		**1**	**4.25**	**High**
HL37	Release of significant quantities of hazardous chemicals/materials as a result of major shipping accident.	Up to 50 fatalities and up to 250 casualties. Significant environmental/ecological damage.	Only applicable to those SCGs with a coastline or significant inland waterways. The extent of the impact would depend on substance involved, quantity, nature and location of accident.	**1 - 2** Lead:MCA		
H16	Aviation accident over semi-urban area.	Loss of up to two aircraft and passengers, with debris over a semi-urban area. Up to 600 fatalities and up to 300 casualties.	Collision of two commercial airliners - death of all passengers and crew on aircraft (600 fatalities), 300 casualties on the ground. No significant damage to key infrastructure.	**1**	**5**	**Medium**
HL9	Aviation accident	Causing up to 50 fatalities and up to 250 casualties.	Accident involving one commercial aircraft, probably on take-off or landing.	**1**	**4**	**Medium**
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.		**1**	**3**	**Medium**
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	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.	1	3	**Medium**
HL13	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.		**1**	**3**	**Medium**

HL14	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 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.		1	3.25	Medium
	SEVERE WEATHER					
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 55 mph with gusts in excess of 85 mph. Consequent damage to infrastructure (e.g. telecommunications, power, transport).		2	2.75	Medium
H18	Low temperatures and Heavy Snow	Snow lying over most of the country for at least one month.	After an initial large fall of snow, there is further snow fall on and off for at least 7 days. Most lowland areas experience some snow falls in excess of 10 cm, some drifts in excess of 50 cm and a period of at least 7 consecutive days with daily mean temperatures below -3°C.	4	3	High
H48	Heat wave (previously HL15)	Daily maximum temperatures in excess of 32°C (30oC for Scotland) and minimum temperatures in excess of 15°C over most of the UK for at least 5 consecutive days and nights.	Scotland is at the lower end of the likelihood range.	2	3	Medium
HL16	Major local coastal/tidal flooding	Sea surge, spring tides, gale force winds, heavy rainfall, 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 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 disruption to traffic 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, impact on access to agricultural land and impact to infrastructure, e.g. sewage treatment works flooded. Numerous pro	The flooding event would have some national impact for Scotland, 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 areas. Assumes: See H19 (Many of the assumptions are the same as they would be for a major UK national flood). Consequence management may require Scottish or UK national response capability.	1	5	Medium

HL17	Significant local coastal/tidal flooding	Sea surge, high tides, gale force winds affecting the coastline, a defence system overtopped or failing at a single location. Localised impact with infrastructure affectedand 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 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; disruption to traffic for up to 7 days, salt damage, road damage, debris and contaminated local water supplies and pollutants from affected businesses. Rural impacts include; widespread livestock carcasses, waterborne disease. Some properties destroyed and others uninhabitable for 12 months.	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. 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 Scotland's response capability.	**2** reduced as advised by SEPA	4	High
HL18	Major local fluvial flooding (rivers and burns)	A sustained period of heavy rainfall extending over two weeks, perhaps combined with snow melt, resulting in steadily rising river levels across entire local authority areas 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, making 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 and 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 1,000 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 uninhabitable. Up to 2,000 people needing assistanc	The flooding event would have a wide-area 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 areas, although some others are also likely to be at risk or impacted at the same time. Assumes: See H21 (Many of the assumptions are the same for a major fluvial flood as they would be for a major Scottish or UK national incident). Consequence management will require Scottish or UK national capability	**1**	**4**	**Medium**

HL19	Local fluvial flooding (rivers and burns)	A sustained period of heavy rainfall extending over two weeks, perhaps combined with snow melt, resulting in steadily rising river levels within a region. Localised flooding of 100 to 1,000 properties for 2-7 days. Up to 5 fatalities and 50 casualties. Up to 5,000 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 and telecoms) to 5,000 for up to 14 days. Up to 250 people needing assistance with sheltering for up to 12 months. Substantial disruption within a region for 7-14 days. Significant debris and pollutants clear-up needed.	The flooding event would have a less than Scottish national impact, but 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 areas. Assumes: See H21 (Many of the assumptions are the same for a significant local fluvial flood as they would be for a major wider-area flood). However, the impact may be specific to one area rather than several sites. Consequence management will be achievable within Scotland's response capability.	4	3	High
HL20	Localised, extremely hazardous, 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. (NB: the outcome is essentially the same as H44 - dam or reservoir failure).	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.	3	3	High
	STRUCTURAL					
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.	It is considered that such incidents are rare within the UK with some areas being more prone to landslides than others. Geography and climatic conditions will determine likelihood.	1		
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.	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.	1	2.75	Medium
	HUMAN HEALTH					
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).		4	3.25	Very High

H23	Influenza type disease (pandemic)	Each pandemic is different and the nature of the virus and its impacts cannot be known in advance. Previous pandemics have led to markedly different outcomes. Based on understanding of previous pandemics, a pandemic is likely to occur in one or more waves, possibly weeks or months apart. Each wave may last around 15 weeks. Up to half the population could be affected. High number of cases and consultations with healthcare providers threatening to overwhelm health and other services. All ages may be affected, but until the virus emerges we cannot know which groups will be most at risk.	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.	4	4.25	Very High
H24	Emerging infectious diseases	Based on SARS outbreak resulting in up to 100 fatalities and 2,000 casualties.	The risk is based on the 2003/4 SARS outbreak.	2	3.25	High
HL24	Non-Communicable Disease (Legionella) outbreak	Localised outbreak of a disease which could cause up to 10 fatalities and up to 50 casualties.		2	2.25	Medium
HL24	Meningitis outbreak	Localised outbreak of a disease which could cause up to 10 fatalities and up to 50 casualties.		2	2.25	Medium
	ANIMAL HEALTH					
H25	Non-zoonotic notifiable animal diseases (e.g. Foot and Mouth Disease (FMD), Classical Swine Fever, Blue Tongue and Newcastle disease of birds).	Slaughter of up to 2 million affected and exposed livestock plus the possibility of a significant number of animals culled for welfare reasons.	Assessments based on credible worst case scenario outbreak of foot & mouth disease starting in upland, extensively farmed area taking into changes to policy and current livestock movement data.	2	4	High
H26	Zoonotic notifiable animal diseases (e.g. Highly Pathogenic Avian Influenza (HPAI, Rabies and West Nile Virus).	Culling of up to 30 million poultry (HPAI).	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.	2	4	High
	INDUSTRIAL ACTION					
HL42	Loss of cover due to industrial action by workers providing a service critical to the preservation of life (e.g. emergency service workers).	A number of three-day strikes with significant support over a two month period affecting a single emergency service.	Likelihood and impact will vary between, and geographically within, emergency services.	4	1.25	Medium
H30	Loss of emergency fire and rescue cover because of industrial action	A series of strikes by fire fighters, spread over a period of two months, perhaps lasting up to 24 hours each.	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. A number of fire and rescue authorities would be self-sufficient in the provision of emergency cover.	4	2.5	High
H31	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.		4		
H33	Prison Officer strike	Prison Officer strike action for up to 48 hours in 80% of prisons.		under review		

H37	International security incident resulting in influx of British Nationals	Up to 50,000 British Nationals returning to UK within a 4-6 week period following serious regional conflict, a sustained terrorism campaign against UK and other Western nationals or an uncontrolled outbreak of pandemic 'flu.	The majority of incomers would have no UK base and l	3		
	PUBLIC PROTEST					
H29(a) Police	Mass gathering	Mass gathering with potential for fatalities and around 100 casualties with crush injuries		2	2.5	Medium
	INTERNATIONAL EVENTS					
HL43	International security or pandemic health situation resulting in influx of British Nationals	Up to 10,000 British Nationals deciding to return to UK to a single region within a 4 - 6 week period following serious regional conflict a sustained terrorism campaign against UK and other Western nationals, or an uncontrolled outbreak of pandemic 'flu'.	The majority of incomers would have no UK base and limited means to provide for themselves. May require accommodation, medical or other services. These are not non-British nationals under EC Temporary Protection Directive (TPD) arrangements.	3-4		
	INDUSTRIAL TECHNICAL FAILURE					
H39	Failure of water infrastructure or accidental contamination with a non-toxic contaminant	Up to 50,000 people could be without piped drinking water for more than 24 hours and up to 3 days.	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.	4		
H41	Technical failure of electricity network (Blackstart)	Partial or total blackout for up to 3 days. Destabilisation of the National Grid. Possible civil unrest, no alarms, street lighting, loss of life support machines, etc. Back-up generators available for limited time in some instances.	Occurs in winter. Isolated rural areas reconnected within a few hours. "Power Islands" created over first day. Most of country reconnected within 3 days but peak demand not able to be met after 3 days.	2	3.5	High
H43	Telecommunication infrastructure – human error	Widespread loss of telecommunications (including public land line and mobile networks) at a multi-SCG or Scottish national level for up to 5 days.	Assume emergency services' communication systems are also affected.	3	3.75	High
H45	Technical failure of electricity network	Total shutdown of the electricity supply over Scotland, occurring during working hours and lasting for 24 hours.		3	3.5	Very High
H49	Loss of drinking water supplies due to a major accident affecting infrastructure.	Up to 200,000 people could be without piped drinking water for more than 24 hours and up to one week.	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 impact zone may close.	1		