Appendix B1

Sligo Local Authorities Risk Assessment Document

Risk Assessment Document
Of
Sligo Local Authorities

Title:	**Risk Assessment Document**
Version:	4
Date:	June 2011
Status:	Active
Prepared By:	A/ Senior Assistant Chief Fire Officer, Major Emergency Management
Approved By:	**Sligo Local Authorities** **Major Emergency Management Committee**

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1. Introduction - Document History

Review Date	Version	Summary of Changes
Sept 2007	0.0	Initial draft following risk assessment meetings
Sept – Dec 2007	0.0	Draft for meetings of Regional Working Group meetings
Oct – Dec 2007	0.0	Draft for meetings of Major Emergency North West Region Risk Sub Group meetings
Feb 2008	0.0	Amendments following completion of Major Emergency Regional Risk Assessment document
July 2008	1.0	Final Draft for distribution and discussion to Sligo Local Authority Management Team and Major Emergency Development Committee. Approved by MEDC
January 2009	2.0	Transfer of Individual Hazard Record Sheets into Risk Assessment Document
January 2011	3.0	Update on Risk Hazard Record Sheets
June 2011	4.0	Update on Risk Hazard Record Sheets

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Introduction

The new approach to Major Emergency Management involves a five-stage systems approach including:

- Hazard Analysis / Risk Assessment
- Mitigation / Risk Management
- Planning and Preparedness
- Co-ordinated Response; and
- Recovery

Hazard Analysis / Risk Assessment is a process where the hazards facing the community are identified and assessed in terms of the risk which they pose.

Initially, Sligo Local Authority is responsible for undertaking the risk assessment process from its own perspective. The information from each Principal Response Agency[1] (PRA's) was provided to the North West Region Major Emergency Regional Working Group (NWR ME RWG)[2] who undertook to produce a regional risk assessment from an inter-agency perspective. The relevant outcomes from the regional process were then incorporated into Sligo Local Authority's Major Emergency Plan.

The primary purpose of the Risk Assessment is to establish priorities for Major Emergency Planning.

Framework Requirement

The Framework for Major Emergency Management requires that:

> Each Principal Response Agency shall, in association with its partner principal response agencies, carry out a risk assessment in accordance with the procedures set down in Section 2 of the Framework for Major Emergency Management and The Guide to Risk Assessment in Major Emergency Management. The initial risk assessment shall be reviewed and updated annually, or as circumstances require.

[2] The Major Emergency North West Region consists of the three counties of Donegal, Leitrim and Sligo and the Regional Steering and Working Groups consists of representatives of the Principal Response Agencies (PRA's) in this region.

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The Risk Assessment process[3] comprises four stages:

1. Establishing the Context
2. Hazard Identification
3. Risk Assessment
4. Recording potential hazards on a risk matrix

Risk Assessment Methodology

The initial draft of the Major Emergency Risk Assessment for Sligo Local Authority was undertaken by the Fire Service by Tommy Gallagher, Assistant Chief Fire Officer.

The County Manager, Mr. Hubert Kearns authorised an expert panel of senior Sligo Local Authority staff to provide input and assistance to the Risk Assessment process.

Risk Assessment Workshops were held as following;

- 10th – 12th September 2007 in National Civil Defence HQ, Roscrea at which a recommended national template was discussed then on a local level,
- 13th Sept 2007 document submission by Sligo Fire Station Officer Tom O'Boyle for risks in Sligo area,
- 14th September 2007 in Aras An Chontae by Sligo Local Authority Major Emergency Development Committee, chaired by Director of Service, Ms. Dorothy Clarke.
- 17th September 2007 in Sligo Fire Station Workshop Lecture Room for full time fire staff,
- 19th September 2007 at Enniscrone Fire Station,
- 01st October 2007 at Sligo Fire Station, discussion of risks with four Senior Fire Officers,
- 11th October 2007 at Sligo Fire Station, discussion of risks with all retained Sligo firefighters,

Regional Risk Assessment Meetings were held as follows;

- Major Emergency Regional Working Group 27th July 2007 in HSE building, Manorhamilton.
- Major Emergency Regional Working Group 21st Sept. 2007 in HSE building, Manorhamilton, where PRA's gave presentations of Risks in their area.
- Sub Group of Major Emergency Regional Working Group for Regional Risk Analysis 05th October, 2007 in HSE building, Manorhamilton,

[3] Risk Assessment process as defined in "A guide to Risk Assessment in Major Emergency Management" document on www.mem.ie website.

- Major Emergency Regional Working Group 09th Nov. 2007 in HSE building, Manorhamilton,
- Major Emergency Regional Working Group 14th Dec. 2007 in HSE building, Manorhamilton,
- Major Emergency Regional Working Group 29th Feb. 2008 in HSE building, Manorhamilton,

In addition to above a risk analysis of Sligo County was prepared for submission for the North Western Incident Command Vehicle in January 2008.

Regional Major Emergency Meetings of the inter-agency North West Regional Working Group have reviewed individual PRA risk management documents, which have resulted in updates to versions 3 & 4.

Section 1 - Establishing the Context

The purpose of this stage is to describe the characteristics of County Sligo, as this will influence both the likelihood and impact of a major emergency. Establishing the context enables a better understanding of the vulnerability and resilience of the area to emergencies. The context of the County Sligo is summarised in the following table across four main areas:

- Social context
- Environment
- Infrastructure
- Hazardous sites

Social **Population-major centres**	**County Sligo 60,894** **Sligo Town 19,402**	- Disability –10% - Elderly (>65 yrs) – 13% - Children (<15yrs) – 20%

Primary Economic Drivers	**Industry**	Recent years have seen Sligo develop as a major industrial, commercial and residential centre supporting a Regional Airport, a railway terminus, a port, two expanding third-level colleges and a General Hospital. No other centre in the Northwest presents the same array of institutions and organisations, so asserting its regionally important role and function. Important employment centres in industry that have developed in the County include Sligo City, Tubbercurry and Grange. Currently there are 47 companies located in four IDA business parks in County Sligo. Sligo City, with a critical mass of labour and skills, underpinned by its ease of access and availability of infrastructure and services, has developed as the key location for industry in County Sligo. IDA Ireland has national responsibility for securing new investment from overseas in manufacturing and international services and for encouraging existing foreign enterprises in Ireland to expand. IDA's Business Park in Sligo has the necessary telecommunications, utilities infrastructure and buildings/site options to cater for the needs of multinational clients. Enterprise Ireland is the organization with responsibility for marketing, technology, business development and training initiatives of Irish Industry. It has developed a wide range of programmes to meet clients identified needs. Both agencies have regional offices in Sligo, located at Finisklin Business Park. FAS - The National Employment / Training Authority has a regional training centre in Sligo providing apprentice and adult training in basic and advanced industrial skills designed to meet the needs of local business. Its employment placement service provides a comprehensive recruitment and placement service for employers and also provides a range of incentives to new industry. Workspace - There are a number of Enterprise Centres throughout the county providing high quality multi-purpose workspace.
	Tourism	County Sligo is part of the North-West Region of Ireland. County Sligo is a popular tourist destination with its fine coastline and many lakes and beaches. Attractions also include yachting, surfing, horseriding, golfing and angling. Some of the main visitor attractions include: • Yeats County • The Coleman Irish Music Centre • Sligo Folk Park • Carrowmore Megalithic Site • Markree Castle

		• Gilligans World – Fairy Theme Park • Benbulben
	Agriculture	The agriculture industry accounts for 8% employment of the County.
	Fishery	Fishing remains an important industry in the North West with angling tourism primarily in County Sligo. The region has several fisheries; from lakes, rivers, tributaries and the sea. **Rivers (Angling)** Easkey, Drumcliffe, Owenmore, Moy **Lakes (Angling)** Glencar Lake, Lough Gill, Lough Arrow
	Education	County Sligo is well served with primary and second level schools. Third level education is available at the Institute of Technology, Sligo which offers full time certificate, diploma and degree courses in engineering, science and business and humanities as well as block-release and partime courses. Postgraduate studies to Masters and Ph.D. level are also available. The college has a student population in excess of 4500 and is designated as the National Centre for Toolmaking and Tool Design. A Business Innovation Centre has been developed on the Campus through which the resources of the college are made available to Industry. This houses both R & D projects run by academics and start up companies run by entrepreneurs. The Institute of Technology works closely with Industry to ensure a consistent supply of qualified graduates. St. Angela's College, linked to NUI Galway is a third level institute of higher learning specialising in innovative educational programmes including social and economic studies, nursing, food studies, tourism and leisure, business and marketing. St. Angela's Food Centre provides a range of services to the Food Industry including Product Development, Sensory and Microbiological Analysis as well as up to date information on Science and Technology and E.U. legislation.
Principle Emergency Services	**An Garda Síochána**	There are 5 Garda Districts in the Sligo/Leitrim division namely Sligo Town, Ballymote, Carrick-on-Shannon, Manorhamilton and Ballyconnell.

	HSE	Sligo has a full range of public and private personal health services. Extensive medical and specialist facilities are available at the 300 beds Regional Hospital which includes a Training School for Nursing. There are many general practitioners, consultants, opticians and dental surgeons in private practice.
	Fire Service	**1 Divisional Headquarters** Sligo Town **3 Additional Retained Fire Stations:** - Ballymote - Tobercurry - Enniscrone **Personnel (Full-Time)** 1xChief Fire Officer, 2 x Senior Assistant Chief Fire Officers, 2xAssistant Chief Fire Officers, 1 x Assistant Fire Officers, 1 Temporary Graduate Engineers, 1 x Full-Time Station Officer, 1 x Fitter Mechanics and 3 administrative and clerical staff. **Personnel (Retained) - 50** 4 Station Officers 7 Sub-Station Officers 1 Driver Mechanics 38 Fire-fighters **Vehicle Fleet** Water tenders - 8 No (4 A1 & 1 A2, 3 spares) Hydraulic Platform - 1No Water Carriers - 1No Emergency Tenders - 2No (1 with off road capability) 4X4 Jeeps - 2No (1No x Land Rover Crew cab & 1No Toyota Land Cruiser) Mobile Workshops - 1No

<u>Environment</u> **Geographical characteristics**	**Area**	County Sligo has an area of 1,836 sq. km
	Forests	There are no Coillte Forest parks in County Sligo. There are 7 recreational sites – Deerpark, Dooney Park, Gleniff, Hazel Wood, Lissadell, Slish Wood, Union Wood
	Main Rivers	Garavogue and Moy
	Mountains	Benbulben, Knocknarea, Bricklieve, Ox Mountains
	Islands	Coney island is accessible by land at low tide, it is believed locally that its more famous namesake in New York was named after the irish island by a Sligo sea captain. The mud flats provide water feeding grounds for the Brent goose, as well as wild duck and waders.

Adjacent counties	Leitrim Roscommon Mayo	
Infrastructure Transport types	**Roads**	Regional and local roads make up 95% of County Sligo's road network. Continuing improvements to the National Primary and Secondary road network will enable the catchment area of County Sligo to expand - particularly south to parts of Mayo and Roscommon, via the N17 and N4, and north to Donegal, via the N15. Improvements to the N16 will enhance connections to Enniskillen and, in addition, the Trans-European Network1 cross-border route will improve links to Belfast and Northern Ireland. Sligo's extensive non-national road network comprises 214 km of regional roads and 2,280 km of local roads. The main primary routes from Sligo are; N4/M4 Sligo, Collooney, Mullingar, Dublin. (pt. dual carriageway, pt. motorway). N15/A5 Sligo, Donegal, Derry. N16/A4/M1 Sligo, Manorhamiliton, Enniskillen, Belfast. (part motorway). N17 Sligo, Collooney, Tubbercurry, Galway. N59 Sligo, Ballisodare, Easkey, Enniscorone, Ballina. Average of 8 fatalities / year on Sligo Roads over the years 2002 - 2006.
	Rail	Rail infrastructure in County Sligo consists of: • the Sligo-Dublin line, used mainly for inter-city services; • the disused line from Collooney to Bellaghy/Charlestown, which forms the northern section of the Western Rail Corridor, potentially linking Sligo and Galway/Limerick, with on ward connections to Cork, Waterford and Rosslare. The Sligo-Dublin rail line is a key strategic transportation link for the North-West. The frequency of service between Sligo and Dublin is now five trains per day and it is expected that new intercity trains will operate every two hours, all day. There are local, community-led proposals to develop a commuter rail service on the existing mainline between Ballymote and Sligo, with stops at Collooney and Ballysadare and scope for

		extensions to Boyle and Carrick-on-Shannon.
	Shipping	Extensive terminal and container handling facilities are available at most Irish Ports. Sligo Port has facilities for ships up to 2000dwt.
	Airport	Sligo Regional Airport is located at Strandhill, 8 km from Sligo City. Aer Arann provides two daily flights in each direction between Dublin and Sligo. The Airport has a 1200-metre long runway, capable of handling airliner and executive aircraft. The 30-minute flight time between Dublin and Sligo is of benefit to commuters, tourists and business interests. The Airport is owned and managed by Sligo North-West Airport Co. Ltd., which is developing a high-quality business park on adjacent lands and examining the feasibility of extending the runway to cater for a wider range of modern aircraft.
Electricity Supply	**ESB**	The Electricity Supply Board (ESB) now proposes to reinforce the high-voltage electricity infrastructure in Counties Sligo, Roscommon and Leitrim, by providing a new 220 kV line from the existing Flagford 220 kV station in Co. Roscommon, near Carrick-on-Shannon, to a new 220/110 kV substation in east Sligo, together with associated 110 kV line developments. This reinforcement will improve quality of supply and provide security and capacity of supply to service future industrial, commercial and domestic development. Work on the project commenced during 2004 and is programmed for completion by mid-2006.
Water supply		The Sligo Local Authorities are responsible for the management of eight water treatment plants and thirty wastewater treatment plants throughout the county. This work involves the maintenance of 1,200 kilometres of water supply pipelines and the daily supply of 8.5 million gallons of drinking water to the required EU standard. Many schemes will be progressed or completed under the 2006 Water Services Investment Programme, including the Non-Domestic Water metering Project, the Kilsellagh Dam Modification project and the Sligo Main Drainage Wastewater Treatment Plant.
Gas supply	**Bord Gais**	Currently no areas are connected to the national gas grid in County Sligo.
Hazardous Sites (Seveso II) There are currently No Upper Tier OR Lower Tier Seveso Sites in County Sligo.	**Upper tier** **Lower Tier**	None None

Section 2 – Hazard Identification

The purpose of this stage is to identify the generic hazards, including any particular hazard specific to County Sligo. Generally, hazards fall into four categories:

- Natural
- Transportation
- Technological
- Civil

Table 2(a) – Natural Hazards

Category	**Type**
Meteorological (NM)	Storm / Severe Gales
	Heavy Snow Severe Cold / Frost
Hydrological (NH)	Flooding
Geological (NG)	Geological
Other (NO)	Forest Fires

Table 2(b) – Transportation Hazards

Category	**Type**
Aviation (TrA)	Aircraft Collision / Loss
Rail (TrRa)	Mainline / Suburban Line
Road (TrRo)	Road Traffic Accident
Water (TrW)	Marine / Estuary Inland

Table 2(c) – Technological Hazards

Category	**Type**
Industrial Accidents (TeI)	Explosion / Fire Gas / Toxic Emission
Explosions (TeE)	Gas Pipeline
	Bomb
Fires (TeF)	
Building Collapse (TeB)	
Chemical (TeC)	Industrial Site
	Transportation
Pollution / Contamination (TeP)	Water Pollution

Table 2(d) – Civil Hazards

Category	**Type**
Civil Disorder/Disturbance (CC)	
Major Crowd Safety (CMC)	
Terrorism (CT)	Bombs
Mass Shooting (CMS)	

Loss of critical infrastructure (CL)	Power Supply Natural Gas Communications
Water Supply (CW)	Contamination / Shortage
Epidemics and pandemics (CE)	Pandemic Influenza
Animal disease (CA)	Foot & Mouth Disease

Natural Hazards [4]

Category	Type	Sub-type	Irish Examples	International Examples
Meteorological	Storm / Severe Gales	Hurricane / Cyclone	Storm on Christmas Eve 1997	
		Tornado (local)		
	Heavy Snow	Blizzards	Jan 1982	
	Severe Cold / Frost	Icy Roads Hypothermia		
	Thunder and Lightning Storms			
	Dense / persistent fog			
	Heat Wave / Drought			Heat Wave France 2003
Hydrological	Flooding	Coastal / Tidal	SE Coast Nov 2004 Dublin Nov 2002	UK / NL 1953
	Heavy Rain	Inland	Clonmel Nov 2004	Prague 2002
Geological	Earthquake			Kobe 1995 Turkey 1999 Bam, Iran 2003
	Tsunami		Ireland 1750s	SE Asia Dec 04
	Volcano			Krakatoa 1887 Mount St Helens
Other	Landslide		Polathomais 2003 Derrybrien 2003	Aberfan 1967
	Land Cave in			
	Reservoir / Dam-burst			
	Forest / Wilderness fire		Donegal Easter 2003	Portugal / France 2003
	Space debris / meteor etc			

[4] Taken from "A Framework for Major Emergency Management – A guide to Risk Assessment in Major Emergency Management"

Transportation Hazards[5]

Category	Type	Illustrative Example	Irish Examples	International Examples
Aviation	Aircraft collision/ loss	Mid-air	Air-India 1985	Lockerbie 1997
		Low-speed (near Airport)	Shannon 1953	British Midland 1989
		Airport incident		Frankfurt 1998 Paris CdeG 2003
	Aviation security	Hijacking		
Rail	Mainline		Cherryville 1983 Buttevant 1982 Roscommon	
	DART/ Suburban			
	Tram			
	Haz Mat/ Goods			
	Tunnel / Bridge			Mont Blanc, Kaprun etc. tunnel fires; Germany, Austria, Switzerland.
Road	Multiple vehicle RTA			
		Bus		
		Motorway		
		Tunnel		
	Hazmat			
	Bridge		Rathcoole 2004	
Water	Marine	Ferry	Rosslare Ferry Feb 2003	Swedish Ferry Zeebrugge 1987
		Port	Dublin Bay collision	
	Inland Waterways	Pleasure craft/ cruises		Marchioness London 1987
		Pollution	Kowloon Bridge 1986 Princess Eva Feb 2003	Braer Spanish Coast 2003

[5] Taken from "A Framework for Major Emergency Management – A guide to Risk Assessment in Major Emergency Management

Technological Hazards[6]

Category	Type	Illustrative Example	Irish Examples	International Examples
Industrial Accidents	Explosions		Hicksons 1994	Toulouse 2004 Flixboro 1974 Seveso 1976
	Petrochemical Fires			Wales
	Industrial Fires	LPG tank fire	Belmullet 1999	
	Gas Emission			Bhopal 1984
	Fluid Emission	Pipeline leak Fire-water run-off		Sandoz 1986
Explosions	Domestic	Natural gas explosion	Raglan House 1984	Belgium 2004
	Bomb		Omagh 1998 Dublin 1974	Madrid 2004
	LPG		Edgeworthstown 1995	BLEVEs
	Pipelines/Platforms			Piper Alpha 1988
Fires			Stardust 1981 Bundoran 1980 Whiddy 1979	Gothenberg 1998 Netherlands 2000
Building Collapse			Raglan House 1984	
Chemical		Accident at site		
		Transportation accident		
		Weapons		
	Biological	Leak/ Weapons	Anthrax scares 2001	
	Nuclear Accident			Chernobyl 1986 Three Mile Island 1990
	Radiological	Fire at storage site/ dirty bomb		
Pollution/ Contamination	Air/Water Pollution		Hicksons 1994	Basil Fire 1986
	Space Debris			
	Mining			

[6] Taken from "A Framework for Major Emeregency Management – A guide to Risk Assessment in Major Emergency Management

Civil Hazards[7]

Category	Type	Illustrative Example	Irish Examples	International Examples
Civil Disorder / Disturbance			Lansdowne Road Intl Soccer 1995	G8 summits
Major Crowd Safety	(movement, crushing etc)	Pop Concerts Sports events Fireworks displays Airshows	Lansdowne Road 2005	Ibrox 1971 Belgium
Terrorism	Bombs	Car-bombs	Dublin/Monaghan 1974	
		Bombs in buildings		
		Fire-bombing		
	CBRN as weapons			
	Disruption	Bomb scares		
Mass shooting				Dunblane 1996 Columbine 1999
Loss of Critical Infrastructure	Energy and Power Supply	Electricity		Canada Italy London
		Natural Gas		
		Fuel Oil		
		Communications	PSTN: Mobiles: Web	
Food Situation Crisis		Food Contamination		
Water Supply		Shortage Contamination		
Epidemics and pandemic		Communicable diseases	SARS threat	Flu pandemics
Animal Disease		Foot & Mouth 2001		Avian Influenza

[7] Taken from "A Framework for Major Emergency Management – A guide to Risk Assessment in Major Emergency Management

Section 3 – Risk Assessment

Categories of Impact and Likelihood

Risk Assessment is measured by judging the IMPACT of an event against the LIKELIHOOD of this event taking place. (Ref: Framework)

Risk Assessment is measured by judging the IMPACT of an event against the LIKELIHOOD of this event taking place. The Framework document details the grading of these factors into categories shown below (Tables 1 and 2).

Table 1 – Classification of Likelihood

Ranking	Classification	Likelihood
1	Extremely Unlikely	May occur only in exceptional circumstances; Once every 500 or more years
2	Very Unlikely	Is not expected to occur; and/or no recorded incidents or anecdotal evidence; and/or very few incidents in associated organisations, facilities or communicates; and / or little opportunity reason or means to occur; May occur once every 100-500 years.
3	Quite Unlikely	May occur at some time; and /or few, infrequent, random recorded incidents or little anecdotal evidence; some incidents in associated or comparable organisations worldwide; some opportunity, reason or means to occur; may occur once per 10-100 years.
4	Likely	Likely to or may occur; regular recorded incidents and strong anecdotal evidence and will probably occur once per 1-10 years
5	Very Likely	Very likely to occur; high level of recorded incidents and/or strong anecdotal evidence. Will probably occur more than once a year.

Source – Major Emergency Framework Document Guidance Document 1 "A guide to risk assessments in major emergency management"

Table 2 – Classification of Impact

Ranking	Classification	Impact	Description
1	Minor	Life, Health, Welfare	Small number of people affected; no fatalities and small number of minor injuries with first-aid treatment.
		Environment	No contamination, localised effects
		Infrastructure	<0.5M Euros
		Social	Minor localised disruption to community services or infrastructure (<6 hours).
2	Limited	Life, Health, Welfare	Single fatality; limited number of people affected; a few serious injuries with hospitalisation and medical treatment required. Localised displacement of a small number of people for 6-24 hours. Personal support satisfied through local arrangements.
		Environment	Simple contamination, localised effects of short duration
		Infrastructure	0.5-3M Euros
		Social	Normal community functioning with some inconvenience.
3	Serious	Life, Health, Welfare	Significant number of people in affected area impacted with multiple fatalities (<5), multiple serious or extensive injuries (20), significant hospitalisation. Large number of people displaced for 6-24 hours or possibly beyond; up to 500 evacuated. External resources required for personal support.
		Environment	Simple contamination, widespread effects or extended duration
		Infrastructure	3-10M Euros
		Social	Community only partially functioning, some services available.
4	Very serious	Life, Health, Welfare	5 to 50 fatalities, up to 100 serious injuries, up to 2000 evacuated
		Environment	Heavy contamination, localised effects or extended duration
		Infrastructure	10-25M Euros
		Social	Community functioning poorly, minimal services available
5	Catastrophic	Life, Health, Welfare	Large numbers of people impacted with significant numbers of fatalities (>50), injuries in the hundreds, more than 2000 evacuated.
		Environment	Very heavy contamination, widespread effects of extended duration.
		Infrastructure	>25M Euros
		Social	Serious damage to infrastructure causing significant disruption to, or loss of, key services for prolonged period. Community unable to function without significant support.

Source – Major Emergency Framework Document Guidance Document 1 "A guide to risk assessments in major emergency management"

Having assessed risk based on the above criteria, the perceived risk is plotted onto a risk matrix (table 3). The position of the risk within the matrix will determine whether mitigation strategies, preparedness and planning, or no current action is required (table 4).

Note: Each category of the local risk assessment detailed has been allotted an abbreviated reference. The references on the risk matrix are identified on the page opposite.

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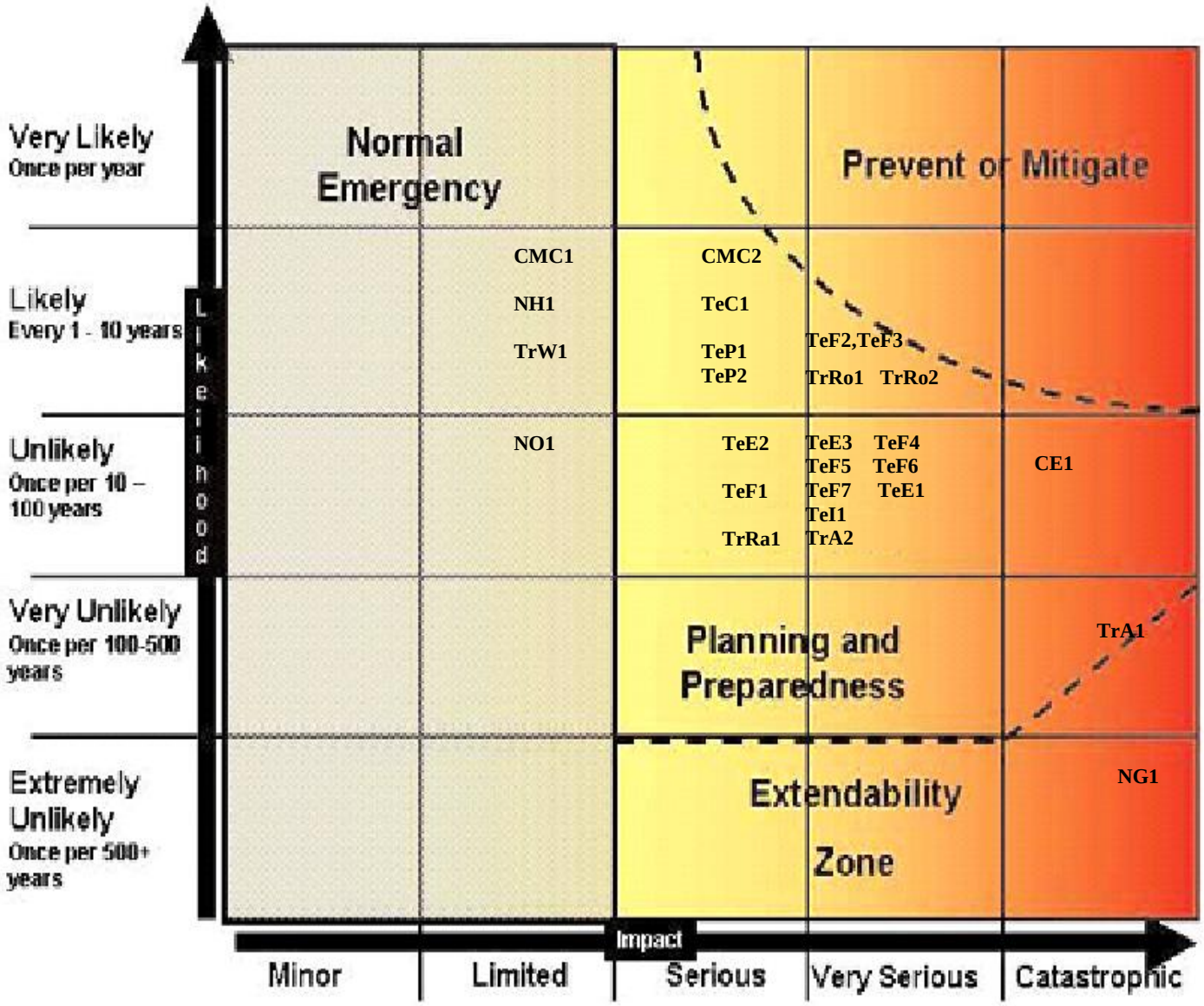
Sligo Risk Matrix Zones



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LEGEND

Natural Hazards (Reference = N)

NH1	- Flooding
NG1	- Tsunami
NO1	- Landslides

Transportation Hazards (Reference = Tr)

TrA1	- Aviation
TrA2	- Sligo Airport
TrRa1	- Railway
TrRo1	- Major RTA
TrRo2	- HAZMAT
TrW1	- Marine emergency

Technological Hazards (Reference = Te)

TeC1	- Industrial Chemical
TeE1	- Underground (Car Park) Explosion Acetylene
TeE2	- Explosion
TeE3	- Garages
TeF1	- Discos
TeF2	- Sligo Hospital
TeF3	- Nursing Homes
TeF4	- Hotels
TeF5	- Theatres/Cinemas
TeF6	- Large Residential
TeF7	- Caravan Parks
TeI1	- Sligo Port
TeP1	- Water Pollution
TeP2	- Oil Pollution

Civil Hazards (Reference = C)

CE1	- Influenza Pandemic
CMC1	- Crowds
CMC2	- WRC

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Operational Risks within and near County Sligo

Industrial:

Pharmaceutical	Sligo Town
Biological	Sligo Town
Solvent based Printing	Sligo Town
Food Production	Tubbercurry/Sligo Town
Plastic Moulding	Sligo Town
Rubber Processing	Sligo Town
Electrical & Optical Equipment	Sligo Town

Infrastructure:

Hydroelectrically Works	Ballyshannon
Wind Farms	Enniscronne, Ox Mountains, Monasteraden
Five National Primary Roads	Sligo Town and County
Rail Network	Dublin to Sligo Line 4 times per day Passenger + Cargo
Sligo Port	Bulk Fuel store (including oil, gas & coal).shipping tanker delivery and collection of bulk materials (scrap metal, timber, coal, fuel, etc.) Cruise liners small cruisers.
Marine	Lough Gill Cruises, Rosses Point Marina, Mullaghmore Harbour, Enniscronne Harbour, Raghly Harbour, Aughris Head Pier and Milk Harbour.
Strandhill Airport:	Flights to Dublin Daily Flights to Manchester four times a week Coast Guard Helicopter Based Private Small Aircraft (planes & Helicopters) Flying School.

Environment:

Coastal County	Vulnerable to High Tide flooding
Forestry	Forest Fires, Gorse Fires
Mountains and Hills	Landslides
Weather	Full brunt of storms and wind from sea

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Operational Risks within and near County Sligo contd..

Social:

Population	Sligo Town 19,000, increases to nearly 45,000 during working hours. County population of 60,000
Sporting Facilities	GAA Stadium, capacity 17,000. Soccer Stadium 5,100. Sligo Race Course capacity 2,000 Sligo IT running track capacity 500-1000 standing only. Cleveragh Sporting Complex capacity 200-300
Night Clubs	4 night clubs each with capacity of 1000+
Hotels	19 Hotels with function room capacity from 150 to 1000.
Motorsport	Connaught Motor Club National Rally each January (single Stage) and July (multi stage) 10,000 – 12,000 Spectators Rally Ireland, Staging Biannual World Rally Champion ship event, Based in Sligo and Covering eight Counties. Estimated 150,000 spectators.
Tourism	Most up to date figure taken in 2003 of 137,000
Education:	Sligo IT 4000-5000 Students St.Angela's College 500-1000

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7. Hazard Record Sheets

Individual Hazard Record Sheets are shown in Framework page structures below.

HAZARD INDENTIFICATION – NATURAL HAZARDS

Ref.	Category/ Sub-category	Hazard/Threat	Potential Outcome description	Relative Risk areas of Sligo	Likelihood	Impact	Risk Rating
NM1	Natural - Meteorological	Storm/Gale or meteorological conditions Both coastal and inland areas can be affected by high winds. This can be complicated by heavy rain or snow	Damage to property. Local Flooding Loss of critical infrastructure Displacement and/or fatalities may occur.	All areas.	Unlikely	Serious	Planning and Preparedness
NM2	Natural - Meteorological	Heavy Snow or Severe Cold/Ice	Damage to property. Loss of critical infrastructure Risk of Hypothermia and possible loss of life. Increased potential for Road Traffic Collisions.	All areas and in particular high-lying areas of County.	Unlikely	Serious	Planning and Preparedness
NH1	Natural – Hydrological	Flooding	Damage to property. Displacement of communities Possible loss of life Loss of critical infrastructure. Water supply contamination.	Low-lying and coastal areas of County	Likely	Limited	Planning and Preparedness
NG1	Natural – Geological	Tsunami	Damage to property. Displacement of communities Possible loss of life Loss of critical infrastructure. Water supply contamination. Destruction of forest & woodland, crop damage,	Coastal areas and inland low-lying of County	Extremely Unlikely	Catastrophic	Planning and Preparedness
NO1	Natural - Other	Landslide	Damage to property. Displacement of communities. Loss of critical infrastructure. Water supply contamination.	High-lying and low-lying areas of County.	Unlikely	Limited	Planning and Preparedness

			Environmental destruction. Fatalities may occur.				
NO2	Natural – Other	Forest Fire	Destruction of forest & woodland, crop damage, Contamination of watercourses. Damage to property.	Forestry planted areas and high lands	Unlikely	Limited	Planning and Preparedness

HAZARD INDENTIFICATION – TRANSPORTATION HAZARDS

Ref.	Category/ Sub-category	Hazard/Threat	Potential Outcome description	Relative Risk areas of Sligo	Likelihood	Impact	Risk Rating
TrA1	Transportation – Aviation	Aircraft collision/loss	Multiple fatalities and casualties. Damage to property. Loss of critical infrastructure.	Sligo Airport. Potentially anywhere in County	Very Unlikely	Catastrophic	Planning and Preparedness
TrA2	Transportation – Aviation	Aircraft collision/loss at or near Sligo Airport	Multiple fatalities and casualties. Damage to property. Loss of critical infrastructure.	Sligo Airport. Potentially anywhere in County area	Unlikely	Very Serious	Planning and Preparedness
TrRa1	Transportation – Rail	Rail Crash	Multiple fatalities and casualties. Damage to property. Loss of critical infrastructure.	Rail Network	Unlikely	Serious	Planning and Preparedness
TrRo1	Transportation – Road	Multi-vehicle collision or bus crash	Multiple fatalities and casualties. Closure of road	Road Network	Likely	Very Serious	Planning and Preparedness
TrRo2	Transportation – Road	Hazmat	Multiple fatalities and casualties. Closure of road	Road Network	Likely	Very Serious	Planning and Preparedness
TrW1	Transportation – Marine	Commercial vessel sinking or running aground. Hazards include local and international ferries.	Multiple fatalities and casualties. Contamination of coastal waters.	All coastal areas and harbour.	Likely	Limited	Planning and Preparedness

HAZARD INDENTIFICATION – TECHNOLOGICAL HAZARDS

Ref.	Category/ Sub-category	Hazard/Threat	Potential Outcome description	Relative Risk areas of Sligo	Likelihood	Impact	Risk Rating
TeC1	Technological – Chemical	Accident at site	Multiple fatalities. Multiple casualties. Evacuations of large numbers of people may be required. Damage to property Pollution of air and watercourses.	Industrial Sites	Likely	Serious	Planning and Preparedness
TeE1	Technological – Explosions	Underground (Car park) Explosion Acetylene	Multiple fatalities. Multiple casualties. Evacuations of large numbers of people may be required. Damage to property Pollution of air.	All areas	Unlikely	Catastrophic	Planning and Preparedness
TeE2	Technological – Explosions	Explosion	Multiple fatalities. Multiple casualties. Evacuations of large numbers of people may be required. Damage to property Pollution of air and watercourses.	All areas	Unlikely	Serious	Planning and Preparedness
TeE3	Technological – Explosions	Garages	Multiple fatalities. Multiple casualties. Evacuations of large numbers of people may be required. Damage to property Pollution of air and watercourses.	All areas	Unlikely	Very Serious	Planning and Preparedness
TeF1	Technological – Fire	Disco	Multiple fatalities. Multiple casualties. Evacuations of large numbers of people may be required. Damage to property Pollution of watercourses from run-off.	All areas	Unlikely	Serious	Planning and Preparedness
TeF2	Technological – Fire	Hospital	Multiple fatalities. Multiple casualties. Evacuations of large numbers of people may be required. Damage to property Pollution of watercourses from run-off.	All areas	Likely	Very serious	Planning and Preparedness

HAZARD INDENTIFICATION – TECHNOLOGICAL HAZARDS

Ref.	Category/ Sub-category	Hazard/Threat	Potential Outcome description	Relative Risk areas of Sligo	Likelihood	Impact	Risk Rating
TeF3	Technological – Fire	Nursing Home	Multiple fatalities. Multiple casualties. Evacuations of large numbers of people may be required. Damage to property Pollution of watercourses from run-off.	All areas	Likely	Very serious	Planning and Preparedness
TeF4	Technological – Fire	Hotel	Multiple fatalities. Multiple casualties. Evacuations of large numbers of people may be required. Damage to property Pollution of watercourses from run-off.	All areas	Unlikely	Very serious	Planning and Preparedness
TeF5	Technological – Fire	Theatre/Cinema	Multiple fatalities. Multiple casualties. Evacuations of large numbers of people may be required. Damage to property Pollution of watercourses from run-off.	All areas	Unlikely	Very serious	Planning and Preparedness
TeF6	Technological – Fire	Large Residential	Multiple fatalities. Multiple casualties. Evacuations of large numbers of people may be required. Damage to property Pollution of watercourses from run-off.	All areas	Unlikely	Very serious	Planning and Preparedness
TeF7	Technological – Fire	Caravan Park	Multiple fatalities. Multiple casualties. Evacuations of large numbers of people may be required. Damage to property Pollution of watercourses from run-off.	All areas	Unlikely	Very serious	Planning and Preparedness
TeI1	Technological – Industrial Accidents	Sligo Harbour	Multiple fatalities. Multiple casualties. Evacuations of large	All areas	Unlikely	Very Serious	Planning and Preparedness

			numbers of people. Damage to property Pollution of watercourses from run-off.				

HAZARD INDENTIFICATION – TECHNOLOGICAL HAZARDS contd..

Ref.	Category/ Sub-category	Hazard/Threat	Potential Outcome description	Relative Risk areas of Sligo	Likelihood	Impact	Risk Rating
TeP1	Technological – Water Pollution	Pollution of Water Course or Coastal Waters	Possible fatalities and casualties. Damage to environment and plants and animals.	All areas	Likely	Serious	Planning and Preparedness
TeP2	Technological – Oil Pollution	Pollution of Water Course or Coastal Waters	Possible fatalities and casualties. Damage to environment and plants and animals.	All areas	Likely	Serious	Planning and Preparedness

HAZARD INDENTIFICATION – CIVIL HAZARDS

Ref.	Category/ Sub-category	Hazard/Threat	Potential Outcome description	Relative Risk areas of Sligo	Likelihood	Impact	Risk Rating
CE1	Civil- Pandemic Flu	Outbreak of flu pandemic	Multiple fatalities Multiple casualties. Serious disruption of essential services. Large scale absenteeism by workforce	All areas worldwide	Unlikely	Catastrophic	Mitigation
CMC1	Civil-	Crowd Safety	Single fatality. Limited no. of casualties. Minor damage to property	All areas	Likely	Limited	Planning and Preparedness
CMC2	Civil-	WRC Rally Ireland	Multiple fatalities. Multiple casualties.. Evacuations of large numbers of people may be required. Damage to property	All areas	Likely	Serious	Planning and Preparedness

Hazard Record Sheets

INDIVIDUAL HAZARD RECORD SHEET – NM1

HAZARD CATEGORY		**SUB-CATEGORY**
Natural		Meteorological (Storm / Severe gales)
Hazard Description		**Hazard Location**
Storm / Severe Gales affecting most of the Country for at least 6 hours. Lowland areas experience means speeds in excess of 55 mph with gusts in excess of 85 mph		County Sligo
Prepared by:		**Approved by:**
Sligo Fire Service		Major Emergency Management Committee

1. Overview of Hazard

The North-West Coast of Ireland is one of the windiest areas in Europe with wind gusts in excess 90 knots (100+ mph) occurring annually in some coastal locations.

Criteria for Severe Weather warning (Wind):
Gusts expected in excess of 110 km/hr (70mph).

2. Key Historical Evidence

Christmas Eve 1997

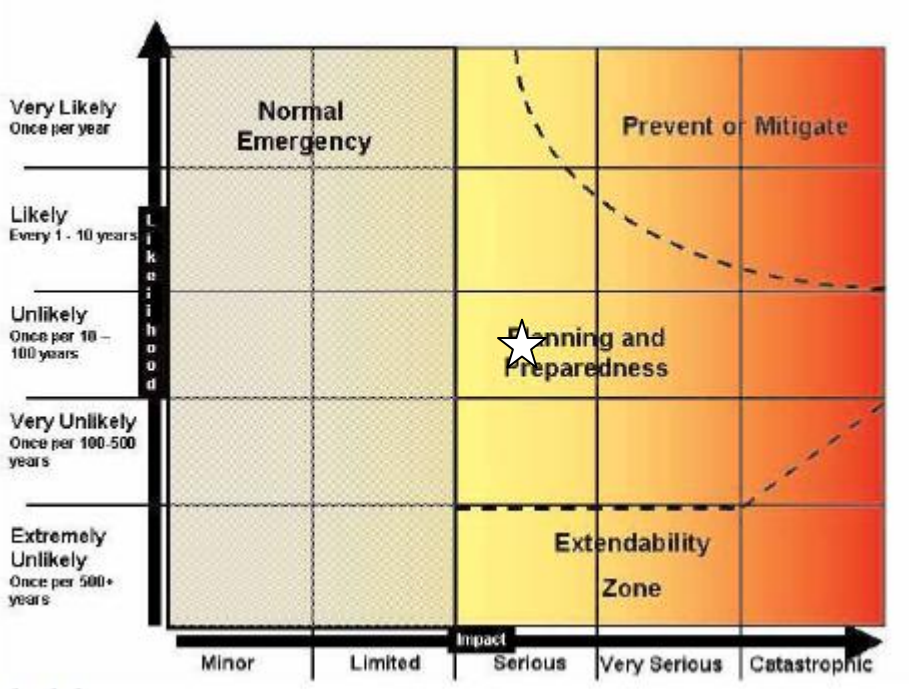
January 1974 - gust of 124 m.p.h. was recorded at Kilkeel in County Down.

6th-7th January 1839, - winds reached hurricane force and between a fifth and a quarter of all houses in Dublin had damage ranging from broken windows to complete destruction.

3. Assessment of Impact and Likelihood

Hazard	Impact				Likelihood
	Human Welfare	**Environment**	**Physical Infrastructure**	**Speed of Development/ Escalation**	
Damage caused by extreme wind and storms	**Serious** Fatalities(2-4) Injuries (<20) Disruption Homelessness	**Limited** Damage to property. Damage to trees, crops and vegetation.	**Serious** Widespread disruption to electricity supply, roads, utilities and communications) (3-10M Euros)	Moderate	Unlikely

4. Position on Risk Matrix



5. Prevention/Control/Mitigation Measures in Place

Severe weather warning issued by MET Éireann.
Building Control Regulations and Building Regulations.
Pre-determined arrangements for mobilisation of Roads Section staff

6. Risk Management Approach: Prevention/Control/Mitigation Measures Required

Require specific Sub-plan of Major Emergency Plan for Severe Weather events.
Rest Centres to be identified.
Utilisation of Voluntary Emergency Services in planning & responding to severe weather events

INDIVIDUAL HAZARD RECORD SHEET – NM2

HAZARD CATEGORY		**SUB-CATEGORY**
Natural		Meteorological
Hazard Description		**Hazard Location**
Heavy Snow or Severe Cold / Ice		County Sligo
Prepared by:		**Approved by:**
Sligo Fire Service		Major Emergency Management Committee

1. Overview of Hazard

Snow lying over most of the Country for an extended period. Low-lying areas experiencing snow falls in excess of 30cm, some drifts in excess of 1 metre and a period of 7 consecutive days with daily mean temperature below 3°C.

Roads may be impassable due to snow drifts/ice. Potential for road traffic accidents or persons trapped in cars due to impassable roads. Potential for collapse of long span roofs due to weight of snow.

Severe cold would have an impact on over ground power transmission systems. The elderly portion of the community would be particularly at risk (Hypothermia).

Criteria for Severe Weather warning (Snow):
Significant falls of snow likely to cause in excess of 3cm or greater in low-lying areas below 250m AMSL (Above Mean Sae Level)

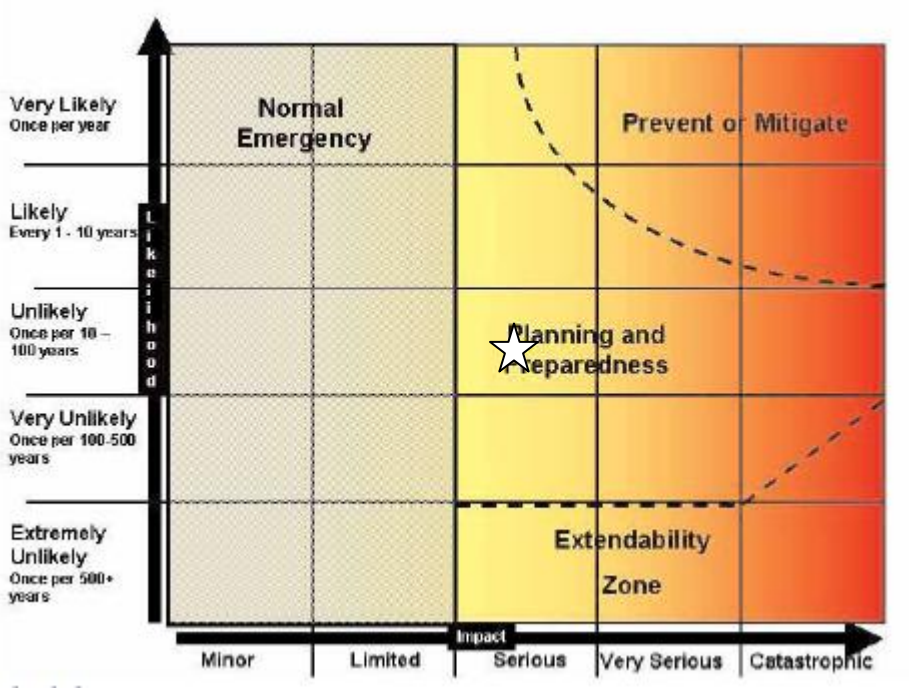
2. Key Historical Evidence

1982 – Large scale disruption due to heavy snow
1963 – Prolonged freezing temperatures from Christmas 1962 relenting in March 1963 over UK and Ireland
1947 – Prolonged snow storms

3. Assessment of Impact and Likelihood

Hazard	Impact				Likelihood
	Human Welfare	**Environment**	**Physical Infrastructure**	**Speed of Development/ Escalation**	
Prolonged period of snow / ice	**Serious** Fatalities(2-4) Injuries (<20)	**Limited** Damage to crops, trees and vegetation	**Serious** Widespread disruption to electricity supply, road & rail network, water supply network & communications (3-10 M Euro)	Slow	Unlikely

4. Position on Risk Matrix



5. Prevention/Control/Mitigation Measures in Place

Severe weather warning issued by MET Éireann.
Pre-determined arrangements for mobilisation of Roads Section in place.
Winter maintenance programme by NRA & Sligo County Council
Snow ploughs and snow clearing equipment available.

6. Risk Management Approach: Prevention/Control/Mitigation Measures Required

Require specific sub-plan for Severe Weather events.
Rest Centres to be identified.
Utilisation of Voluntary Emergency Services in planning & responding to severe weather events

INDIVIDUAL HAZARD RECORD SHEET – NH1

HAZARD CATEGORY		**SUB-CATEGORY**
Natural		Hydrological
Hazard Description		**Hazard Location**
Flooding		County Sligo
Prepared by:		**Approved by:**
Sligo Fire Service		Major Emergency Management Committee

1. Overview of Hazard

Many rural and urban areas of County Sligo are susceptible to flooding caused by the combination of some/all of the following:

- Heavy rain
- Tides (Spring)
- Low atmospheric pressure
- Winds – W, NW, N

In general the hazard could arise from conditions related to one or more of the following:

- Tides (with or without wind assistance)
- River/channel flows
- Precipitation (Rainfall)
- Drainage systems
- Burst of very large diameter water mains
- Reservoir bursts
- Failure of levees or associated infrastructure.

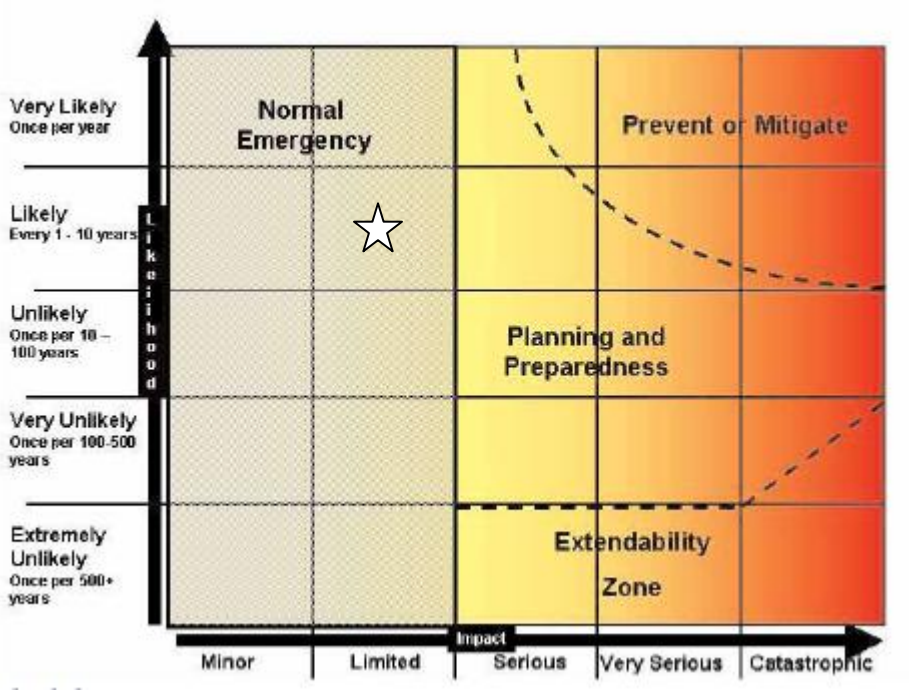
2. Key Historical Evidence

Carlow, August 2008
Limerick, August 2008
Sligo, August 2008
UK, 2007

3. Assessment of Impact and Likelihood

Hazard	Impact				Likelihood
	Human Welfare	**Environment**	**Physical Infrastructure**	**Speed of Development Escalation**	
Flooding	**Limited** Fatalities (1) Some injuries Hospitalisation & medical treatment required Localised displacement (>24 hrs)	**Limited** Local Contamination by sewage, short duration. Animals stranded.	**Limited** Water damage to properties road / rail / power / communications (0.5-3M Euros) Traffic disruption. Access difficulties for emergency services.	Moderate	Major flooding – Likely (once per 1-10 years)

4. Position on Risk Matrix



5. Prevention/Control/Mitigation Measures in Place

Flood prevention works to gullies and storm drains.
Flood defences on properties in affected areas.
OPW inspection and maintenance of Levees

6. Risk Management Approach: Prevention/Control/Mitigation Measures Required

Require a specific Sub-plan of the Major Emergency Plan for flood response throughout the organisation.
Identify vulnerable flooding areas throughout County Sligo with specific reference to those areas vulnerable from Tidal flooding and those areas vulnerable from Alluvial flooding.
Plans for Rest centres with necessary equipment and supplies.
Investigate options available for flood defence - demountable structures, sumps, automatic pumps, etc.
Investigate provision of additional equipment and training for responding to flooding emergencies. e.g. boats, survival equipment, rapid water rescue etc.
Involvement of Coast Guard in training for rescue scenarios in urban areas.
Joint exercises with Sligo Civil Defence in relevant areas.

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INDIVIDUAL HAZARD RECORD SHEET – NG1

HAZARD CATEGORY		**SUB-CATEGORY**
Natural		Geological
Hazard Description		**Hazard Location**
Tsunami		County Sligo
Prepared by:		**Approved by:**
Sligo Fire Service		Major Emergency Management Committee

1. Overview of Hazard

All tsunamis are potentially dangerous, even though they may not damage every coastline they strike. A tsunami can strike anywhere along the majority of the Sligo coastline. The topography of the Sligo coastline and the ocean floor will influence the size of the wave.

The coastline of Sligo would be susceptible to a tsunami depending on its point of origin in the Atlantic Ocean.

A tsunami could arise from conditions related to one or more of the following underwater disturbance:

- Earthquake
- Landslide
- Volcanic eruption
- Meteorite

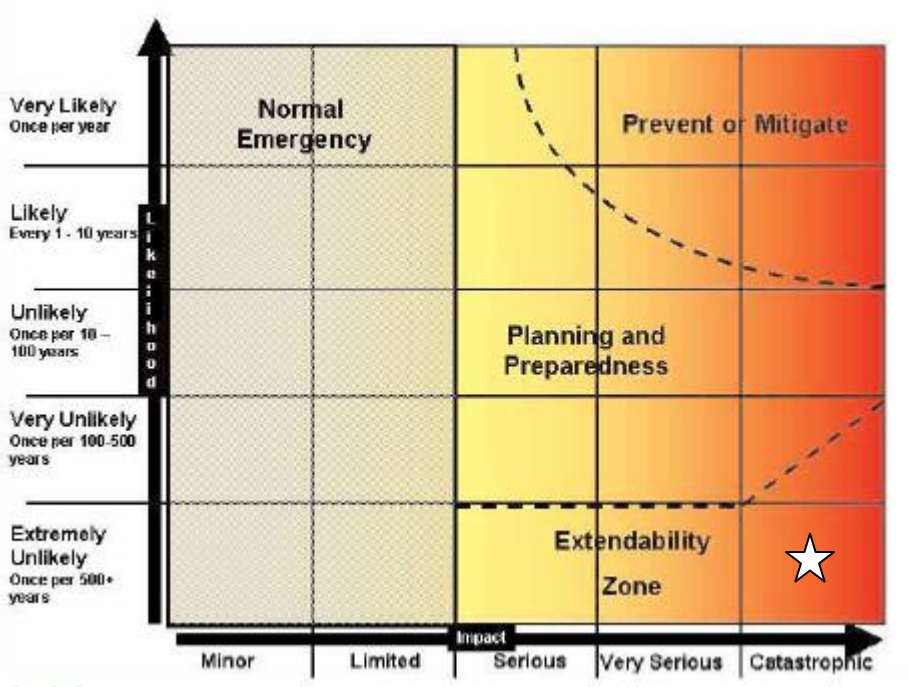
2. Key Historical Evidence

South East Asia, December 2004
Ireland, 1750's

3. Assessment of Impact and Likelihood

Hazard	Impact				Likelihood
	Human Welfare	**Environment**	**Physical Infrastructure**	**Speed of Development Escalation**	
Tsunami	**Catastrophic** Fatalities (>50) Injuries the hundreds, more than 2000 evacuated. Hospitalisation & medical treatment required County wide displacement for prolonged period.	**Catastrophic** Flooding. Very heavy contamination, widespread effects of extended duration. Loss of Fisheries stocks. Destruction of forest & woodland, crops. Animals killed/ stranded.	**Catastrophic** Water destruction and damage to properties road / rail / power / communications (>25M Euros) Access difficulties for emergency services.	Rapid	Extremely Unlikely

4. Position on Risk Matrix



5. Prevention/Control/Mitigation Measures in Place

National Geological Society of Ireland and UCD monitors and forecasts such geological events.

6. Risk Management Approach: Prevention/Control/Mitigation Measures Required

Require a specific Sub-plan of the Major Emergency Plan for Tsunami response throughout the organisation.
Identify vulnerable coast line throughout County Sligo with specific reference to those areas most vulnerable from the enormous waves of a Tsunami.
Plans for Rest centres with necessary equipment and supplies.
Investigate options available for flood defence - demountable structures, sumps, automatic pumps, etc.
Investigate provision of additional equipment and training for responding to Tsunami and flooding emergencies. e.g. boats, survival equipment, rapid water rescue etc.
Involvement of Coast Guard in training for rescue scenarios.
Joint exercises with Sligo Civil Defence.

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INDIVIDUAL HAZARD RECORD SHEET – NO1

HAZARD CATEGORY		**SUB-CATEGORY**
Natural		Other
Hazard Description		**Hazard Location**
Landslide		County Sligo
Prepared by:		**Approved by:**
Sligo Fire Service		Major Emergency Management Committee

1. Overview of Hazard

Many slopes on high-lying regions of County Sligo are susceptible to landslides caused by the combination of some/all of the following:

- Intense or prolonged rainfall, rapid snowmelt or sharp fluctuations in ground water levels
- Undercutting of a slope by stream erosion or human activity
- Shock or vibrations caused by earthquakes or construction activity
- Loading on upper slopes
- Land mismanagement

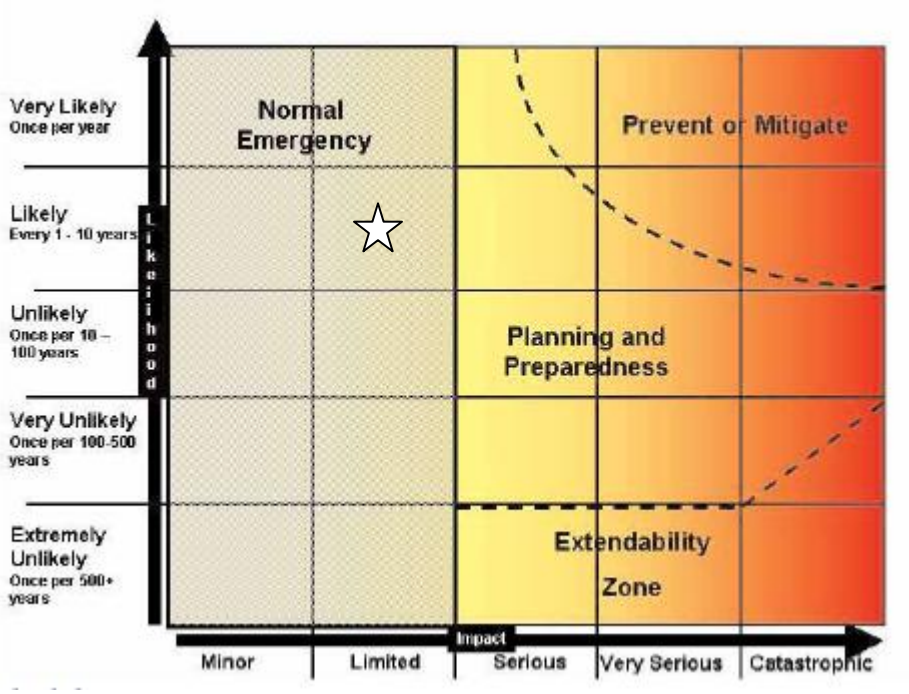
2. Key Historical Evidence

Carlow, August 2008
Limerick, August 2008
Sligo, August 2008
UK, 2007

3. Assessment of Impact and Likelihood

Hazard	Impact				Likelihood
	Human Welfare	**Environment**	**Physical Infrastructure**	**Speed of Development Escalation**	
Landslide	**Limited** Fatalities (1) Some injuries Hospitalisation & medical treatment required. Localised displacement (>24 hrs)	**Limited** Local Contamination of watercourses, Loss of Fisheries stocks. Damage to forest & woodland, crop damage.	**Limited** Damage to properties/ road / rail / power / communications (0.5-3M Euros) Traffic disruption. Access difficulties for emergency services.	Rapid	Likely (once per 1-10 years)

4. Position on Risk Matrix



5. Prevention/Control/Mitigation Measures in Place

Landslide risk can be reduced with geotechnical and geoscience investigations detecting slope hazards and determining the likelihood of landslide occurrence. Through this process structures such as homes, schools and other infrastructure projects can be safely located away from potential landslide risk areas.

Slope stabilisation methods in rock or in earth, can be collocated into three types of measure:

• Geometric methods, in which the geometry of the hillside is changed (in general the slope);

• Hydrogeological methods, in which an attempt is made to lower the groundwater level or to reduce the water content of the material;

• Chemical and mechanical methods in which attempts are made to increase the shear strength of the unstable mass or to introduce active external forces (e.g. anchors, rock or ground nailing) or passive (e.g. structural wells, piles or reinforced ground) to contrast the destabilising forces.

6. Risk Management Approach: Prevention/Control/Mitigation Measures Required

Require a specific Sub-plan of the Major Emergency Plan for Landslide response throughout the organisation.
Identify vulnerable slopes throughout County Sligo.
Plans for Rest centres with necessary equipment and supplies.
Investigate options available for slope stabilisation etc.
Investigate provision of additional equipment and training for responding to landslide emergencies. e.g. vehicles with off road capabilities, survival equipment, etc.
Involvement of Coast Guard in training for rescue scenarios.
Joint exercises with Sligo Civil Defence and Sligo/Leitrim Mountain Rescue Team in relevant areas.

INDIVIDUAL HAZARD RECORD SHEET – NO2

HAZARD CATEGORY		**SUB-CATEGORY**
Natural		Forest Fire
Hazard Description		**Hazard Location**
Forest Fire in dry weather		County Sligo
Prepared by:		**Approved by:**
Sligo Fire Service		Major Emergency Management Committee

1. Overview of Hazard

Coillte forests cover a net area of 10,542 hectares in County Sligo. Coillte has no forest parks in Sligo County but has seven recreation sites in Deerpark, Donney Rock, Gleniff, Hazel Wood, Lissadell, Slish Wood and Union Wood.
Fire has been traditionally used as a land management tool to provide for new growth by burning dead plant material. With Ireland's moderate temperature and regular rainfall very few forest fires are caused by natural causes, the vast majority are caused by human actions.
Safety Risks include:

- Dwellings located on the edge of forest/bog areas.
- Risk to livestock and wildlife.
- Roads that could be made impassable in the vicinity of a forest fire due to poor visibility.
- Fire in forests used as recreational and amenity areas.
- Individuals trapped within forest fires (walkers, hikers etc).
- Risk to emergency service responders

2. Key Historical Evidence

Irish Examples:
Mayo, May 2008
Kerry 2007
Donegal, Easter 2003

International Examples:
Los Angeles, July/August 2008
Greece 2007
Portugal/France 2003

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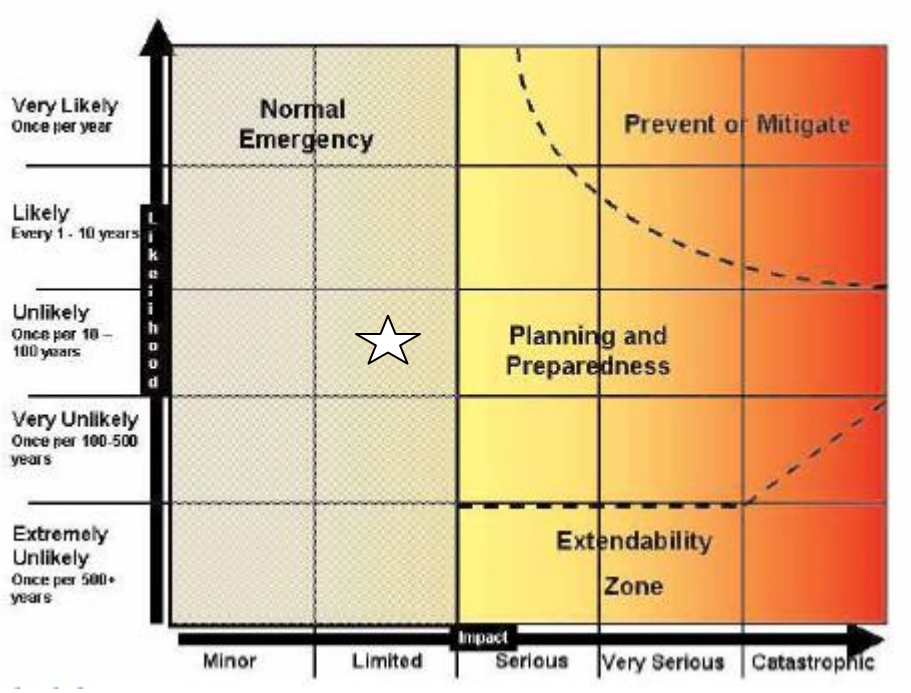
3. Assessment of Impact and Likelihood

Hazard	Impact				Likelihood
	Human Welfare	**Environment**	**Physical Infrastructure**	**Speed of Development / Escalation**	
Large forest fire close to human activity i.e. amenity or residential area	**Limited** Fatality (1) Some injuries with hospitalisation required. Evacuation of some persons required.	**Limited** Fire damage to forest & woodland, crop damage, Contamination of watercourses,	**Limited** Fire damage to forestry & rural housing. (0.5-3M Euro) Temporary obstruction to local services. Emergency Services involvement for long periods	Moderate	Unlikely

4. Position on Risk Matrix



5. Prevention/Control/Mitigation Measures in Place

Coillte have a District Strategic Plan for the Ox Mountains, which covers the area of fire and aims to minimize loss caused by forest fires as well as raising public awareness of forest fires.
Present forest service regulations require a fire plan for plantations over 10 hectares in order to obtain a maintenance grant. This fire plan should include a location map showing the assembly point, access routes, water points and firebreaks. Telephone numbers for the local fire brigade, local Garda station, caretaker, neighbours and company forester should also be included.

6. Risk Management Approach: Prevention/Control/Mitigation Measures Required

Develop pre-fire plans and liaise with relevant forestry agencies and owners to establish suitable access points, priority areas for fire fighting, suitable water supplies and any population at risk.
Assessment of suitability of fire-fighters P.P.E. and equipment for Major Forest Fires.
Training for fire-fighters in respect of major forest fires.
Increase public awareness in risk areas regarding forest fire prevention & evacuation in conjunction with Coillte and private forestry owners.

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INDIVIDUAL HAZARD RECORD SHEET – TrA1

HAZARD CATEGORY		**SUB-CATEGORY**
Transportation		Aviation
Hazard Description		**Hazard Location**
Aircraft collision/loss		Off site
Prepared by:		**Approved by:**
Sligo Fire Service		Major Emergency Management Committee

1. Overview of Hazard

In 2007, Sligo Airport handled in excess of 44 thousand passengers with a total of 10,065 aircraft movements including 1680 commercial flights.

Aer Arann provides two daily scheduled flights in each direction between Dublin and Sligo, and during summertime, 4 weekly scheduled flights between Sligo and Manchester. Aircraft used on the route vary from 50 seat ATR 42 to 70 seat ATR 72 aircraft. Flight paths taking the aircraft over Sligo Town centre as they approach and depart the airport.

Three Irish Aviation Authority Registered Pilot Training Schools operate from Sligo Airport. The airport is home to 15 light aircraft, with seating varying between 1 and 6, and a 4 seat helicopter. Up to an additional three light can be on site for maintenance with Usher Aviation.

The Irish Coast Guard Search and Rescue Helicopter (Sikorsky S61) base for the Northwest region is located at Strandhill airport.

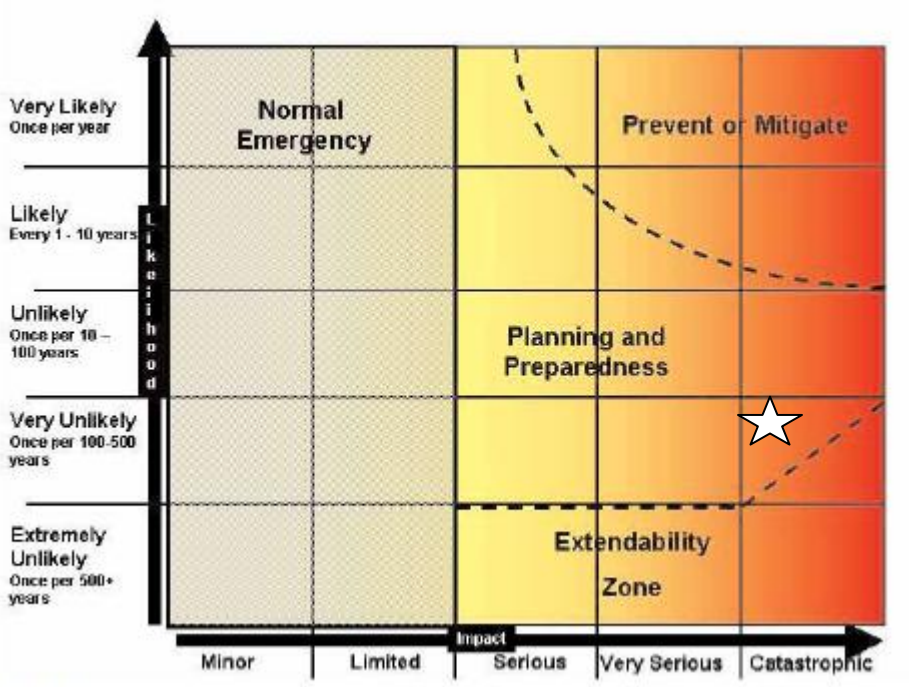
2. Key Historical Evidence

KLM Constellation, 1954, Shannon Estuary, 28 fatalities
Alitalia DC-6, Clonloghan, Co. Clare, 1960, 34 fatalities
President Airlines DC-6b, Shannon Estuary, 1961, 83 fatalities
Piper Comanche (private), Cork Airport 1964 - 5 Fatalities
Aer Lingus Viscount EI-AOM, Tuskar Rock, 1968, 61 fatalities (departed Cork airport)
Air India Boeing 747, Off South Coast of Ireland, 1985, 329 fatalities

3. Assessment of Impact and Likelihood

Hazard	Impact				Likelihood
	Human Welfare	**Environment**	**Physical Infrastructure**	**Speed of Development/ Escalation**	
Air crash off site as a result of Mid-air collision or loss	**Catastrophic** Fatalities (>50) Serious Injury (100+)	**Serious** Fire damage/ destruction Smoke damage Toxic materials	**Very Serious** Destruction of aircraft and property. (10-25M Euro) Disruption of local services.	Rapid	Very Unlikely

4. Position on Risk Matrix



5. Prevention/Control/Mitigation Measures in Place

Industry regulated by the Irish Aviation Authority
International Civil Aviation Organisation Regulations
Air Traffic Control
Security at airports
Fire Service at airport
On-site Emergency plan for Sligo airport.
Inter-Agency co-operation, training & exercises

6. Risk Management Approach: Prevention/Control/Mitigation Measures Required

Continued Inter-Agency co-operation, training & exercising with Airport Authorities
On-site Emergency plans for Sligo Airport.

INDIVIDUAL HAZARD RECORD SHEET – TrA2

HAZARD CATEGORY		**SUB-CATEGORY**
Transportation		Aviation
Hazard Description		**Hazard Location**
Aircraft collision/crash at Sligo Airport		Sligo Airport
Prepared by:		**Approved by:**
Sligo Fire Service		Major Emergency Management Committee

1. Overview of Hazard

Aer Arann provides two daily scheduled flights in each direction between Dublin and Sligo, and during summertime, 4 weekly scheduled flights between Sligo and Manchester. Aircraft used on the route vary from 50 seat ATR 42 to 70 seat ATR 72 aircraft. Flight paths taking the aircraft over Sligo Town centre as they approach and depart the airport.

The Airport has a 1200 metre long runway at an elevation of 3.35m above sea level.

Sligo Airport facilities comprise of a Terminal Building, Restaurant, Bar, Usher Aviation Maintenance, parking facilities and car hire.

Three Irish Aviation Authority Registered Pilot Training Schools operate from Sligo Airport. The airport is home to 15 light aircraft, with seating varying between 1 and 6, and a 4 seat helicopter. Up to an additional three light can be on site for maintenance with Usher Aviation.

The Irish Coast Guard Search and Rescue Helicopter (Sikorsky S61) base for the Northwest region is located at Strandhill airport.

Sligo Airport supplies Jet A1 (similar to home heating oil) to Jet and Turbine engine aircraft, and AVGAS (similar to petrol) to piston engine aircraft. JET A1 and AVGAS are stored on site. The total storage capacity for JET A1 is 37, 000 litres (storage tank and two mobile bowsers when full), and for AVGAS, 27, 000 litres (when full).

2. Key Historical Evidence

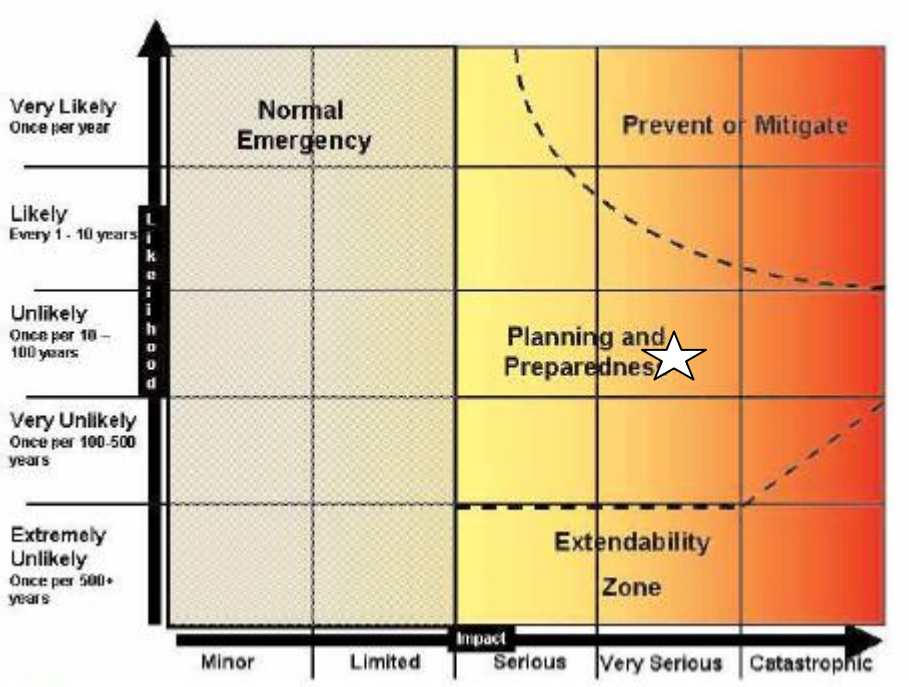
KLM Constellation, 1954, Shannon Estuary, 28 fatalities
Alitalia DC-6, Clonloghan, Co. Clare, 1960, 34 fatalities
President Airlines DC-6b, Shannon Estuary, 1961, 83 fatalities
Piper Comanche (private), Sligo Airport 1964 - 5 Fatalities
Aer Lingus Viscount EI-AOM, Tuskar Rock, 1968, 61 fatalities (departed Cork airport)
Air India Boeing 747, Off South Coast of Ireland, 1985, 329 fatalities

Euroceltic Fokker 27, 2002, Runway Overrun, 40 Passengers evacuated (Tide Out) No fatalities.

3. Assessment of Impact and Likelihood

Hazard	Impact				Likelihood
	Human Welfare	**Environment**	**Physical Infrastructure**	**Speed of Development/ Escalation**	
Aircraft collision/loss at airport or near airport	**Very Serious** Fatalities (5-49) Serious Injury (100)	**Serious** Fire damage/ destruction Smoke damage Toxic materials	**Very Serious** Damage to aircraft and property. (10-25M Euro) Disruption of airport services.	Rapid	Unlikely

4. Position on Risk Matrix



5. Prevention/Control/Mitigation Measures in Place

Industry regulated by the Irish Aviation Authority International Civil Aviation Organisation Regulations Air Traffic Control Security at airports Fire Service at airport On-site Emergency plan for Sligo airport. Inter-Agency co-operation, training & exercises

6. Risk Management Approach: Prevention/Control/Mitigation Measures Required

Continued Inter-Agency co-operation, training & exercising with Sligo Airport authorities On-site Emergency plans for Sligo Airport.

INDIVIDUAL HAZARD RECORD SHEET – TrRa1

HAZARD CATEGORY		**SUB-CATEGORY**
Transportation		Rail
Hazard Description		**Hazard Location**
Mainline rail crash		County Sligo
Prepared by:		**Approved by:**
Sligo Fire Service		Major Emergency Management Committee

1. Overview of Hazard

Rail infrastructure in County Sligo consists of:

- the Sligo-Dublin line, used mainly for inter-city services;
- the disused line from Collooney to Bellaghy/Charlestown, which forms the northern section of the Western Rail Corridor, potentially linking Sligo and Galway/Limerick, with on ward connections to Cork, Waterford and Rosslare.

The frequency of service between Sligo and Dublin is now eight trains per operating every two hours, all day.

There are proposals to develop a commuter rail service on the existing mainline between Ballymote and Sligo, with stops at Collooney and Ballysadare and scope for extensions to Boyle and Carrick-on-Shannon.

Together with the other local authorities in the West, Sligo County Council is seeking the reopening of passenger and freight services along the Western Rail Corridor. This route has been identified as a 'National Transport Corridor' in the NSS. The proposal would provide a north-south rail service in the West, with potential for internal regional linkages, connections to Dublin and a range of commuter services. It could involve reopening of the existing Ennis-Collooney Junction line and the introduction of a more direct link between Cork and Limerick. There are also calls for the reopening of the Sligo-Enniskillen-Belfast line.

Potential Safety Risks include:

- Level Crossings
- Vandalism
- Derailment / Collision
- Bridge Strike
- Environmental – Severe weather, storms etc.
- Equipment failure
- Human error
- Road traffic accidents at bridges / overpasses

2. Key Historical Evidence

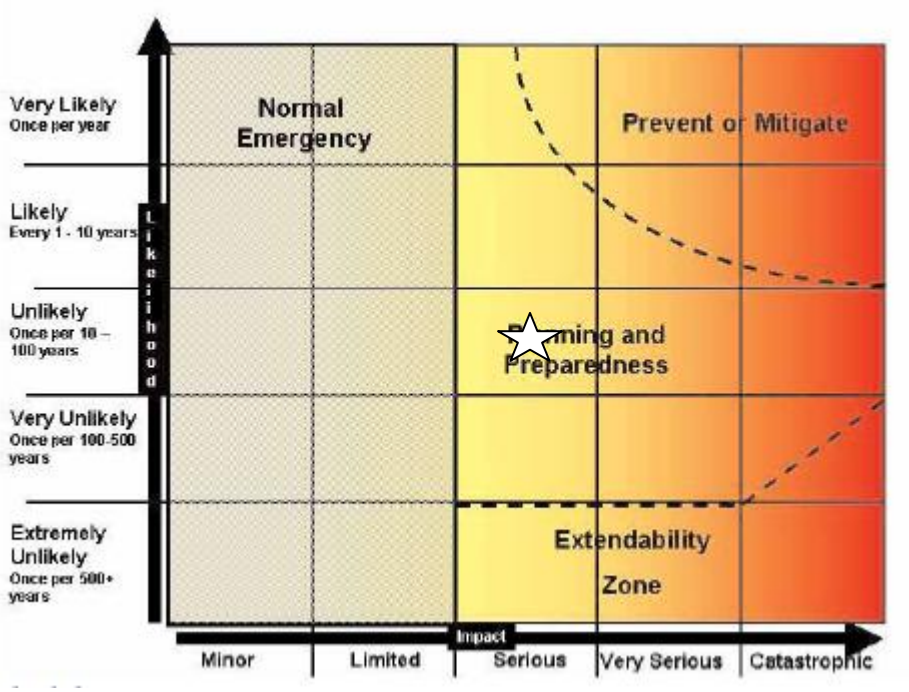
Gorey, Co. Wexford 1975 – Under bridge strike, 5 fatalities
Buttevant, Co. Cork 1980 – Derailment, 18 fatalities
Cherryville, Co. Kildare 1983 – Collision involving two trains, 7 fatalities
Claremorris, Co. Mayo 1989 – Derailment

Knockcroghery, Co. Roscommon 1997 - Derailment

3. Assessment of Impact and Likelihood

Hazard	Impact				Likelihood
	Human Welfare	**Environment**	**Physical Infrastructure**	**Speed of Development / Escalation**	
Derailment/ Collision Fire	**Serious** Fatalities (2-4) Serious Injuries (20)	**Limited** Fuel spill Soil/Water Contamination Fire/Smoke Damage	**Serious** Damage to Rail line & trains, Road network or Bridge. (3-10M Euro) Disruption of rail service. Traffic congestion	Immediate	Unlikely

4. Position on Risk Matrix



5. Prevention/Control/Mitigation Measures in Place

Iarnród Éireann licensed to operate by Railway Safety Commission
Safety Management system in place in Iarnród Éireann
Speed restrictions& Signalling
Gated / Barrier crossings
Railway Traffic monitored by Central Traffic Control, Connolly Station, Dublin
Electronic / Mechanical emergency controls in locomotives
Replacement / Upgrading programme for trains and rail lines by I.E.
Iarnród Éireann Emergency Plan

6. Risk Management Approach: Prevention/Control/Mitigation Measures Required

Inter-Agency Co-operation, training & Exercises
Hold Joint Exercises with Iarnród Éireann – Table top/on site
Fleet familiarization days between Fire Service & Iarnród Éireann
Map access points for emergency services to the rail line
Establish extent of hazardous materials transported by Iarnród Éireann.

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INDIVIDUAL HAZARD RECORD SHEET – TrRo1

HAZARD CATEGORY		**SUB-CATEGORY**
Transportation		Road
Hazard Description		**Hazard Location**
Multiple Vehicle Collision		County Sligo
Prepared by:		**Approved by:**
Sligo Fire Service		Major Emergency Management Committee

1. Overview of Hazard

County Sligo is served by national Primary and Secondary Roads and non-national roads. Although the National Routes comprise only 7% of the County's total road network, they carry the majority of its traffic. National Primary routes (N4, N15, N16, N17 and the N59). Regional and local roads make up 95% of County Sligo's road network.

The primary arteries of Sligo Town's road network are the "Inner-Relief Road" dual-carriageway, part of the N4 road to Dublin (which is motorway on some stretches, dual-carriageway in others). The section of the N4 road between Sligo and Collooney, about 15 kilometres outside Sligo is made up of dual carriageway which was completed in around the Millennium, bypassing the towns Of Collooney and Ballysadare. An extension onto this road was completed in 2005. This is The Sligo Inner Relief Road. It stretches from Carrowroe in the south of Sligo to the outside of Sligo town. The Sligo County Council 'Traffic & Transportation Plan' identified the pedestrianisation of Sligo's core streets as a priority following the opening of the Sligo Inner Relief Road, and O'Connell Street, the main street in the town has been pedestrianised as of 15th August 2006.

In the period of 1997 to 2006 on Sligo roads, there were 74 deaths, 1539 injured, 232 serious injuries. The year 2000 seeing 13 people killed and 205 injured.

Hazards:

- Moving traffic
- The vehicles involved and their loads
- Site conditions

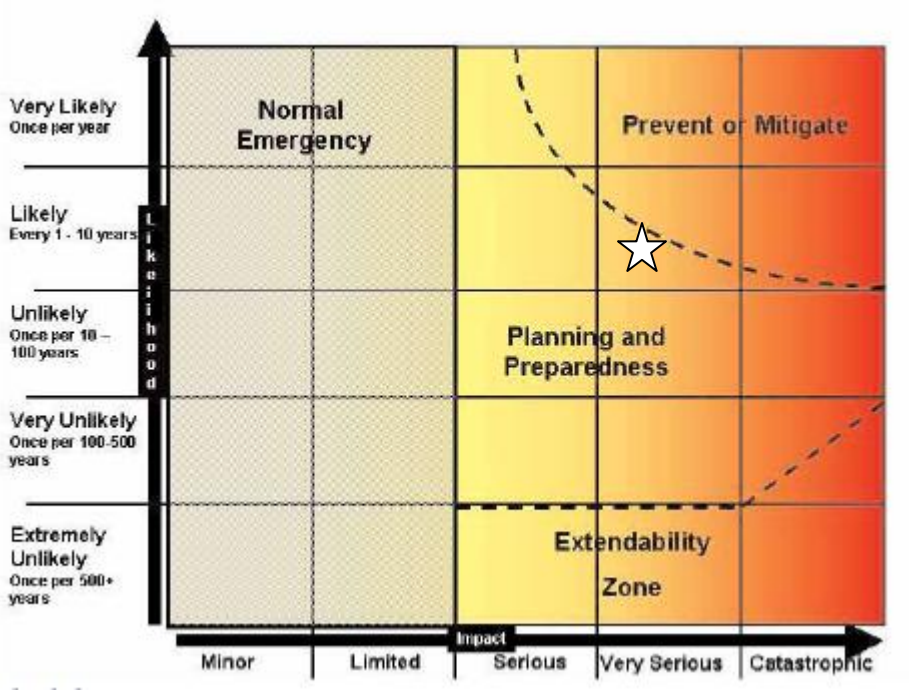
2. Key Historical Evidence

Wellington Road, Cork 2007, Bus crash, 40 casualties (mostly minor)
M7 Motorway, Kildare 2007, Multiple vehicle collision, 1 fatality, 30 casualties
Wellington Quay, Dublin 2004, Bus Crash, 5 fatalities, 17 casualties
Kentstown, Navan, Co. Meath, 2005 - Bus Crash, 5 fatalities, 40 casualties

3. Assessment of Impact and Likelihood

Hazard	Impact				Likelihood
	Human Welfare	**Environment**	**Physical Infrastructure**	**Speed of Development/ Escalation**	
Multiple Vehicle Collision / Bus crash	**Very Serious** Fatalities (5-49) Serious Injuries(<100)	**Minor** Fuel spill	**Limited** Damage to vehicles and property. Traffic Congestion. Road Closure. (0.5-3M Euro)	Immediate	Likely

4. Position on Risk Matrix



5. Prevention/Control/Mitigation Measures in Place

Garda enforcement of Traffic legislation
New measures in recent years – Garda Traffic Corp established, Penalty points system introduced, random breath testing in place
Speed limits in danger areas
Road Safety Authority established at National level
Road Building & Maintenance Programmes – NRA & Sligo County Council
Road Safety Campaigns
Inter-Agency co-operation, training & exercising

6. Risk Management Approach: Prevention/Control/Mitigation Measures Required

Further Inter-Agency co-operation, training & exercising

Protocols to be established between Fire Service & Roads Section in relation to attendance at road traffic accidents where clean-up of accident scene is required.
Inter-Agency agreements/protocols in response to Road Traffic Accidents
Traffic Management Plans for Local Risks.

INDIVIDUAL HAZARD RECORD SHEET – TrRo2

HAZARD CATEGORY		**SUB-CATEGORY**
Transportation		Road
Hazard Description		**Hazard Location**
Hazmat		County Sligo
Prepared by:		**Approved by:**
Sligo Fire Service		Major Emergency Management Committee

1. Overview of Hazard

County Sligo is served by national Primary and Secondary Roads and non-national roads. Although the National Routes comprise only 7% of the County's total road network, they carry the majority of its traffic. National Primary routes (N4, N15, N16, N17 and the N59). Regional and local roads make up 95% of County Sligo's road network.

Dangerous and Hazardous substances are transported by road in County Sligo.

2. Key Historical Evidence

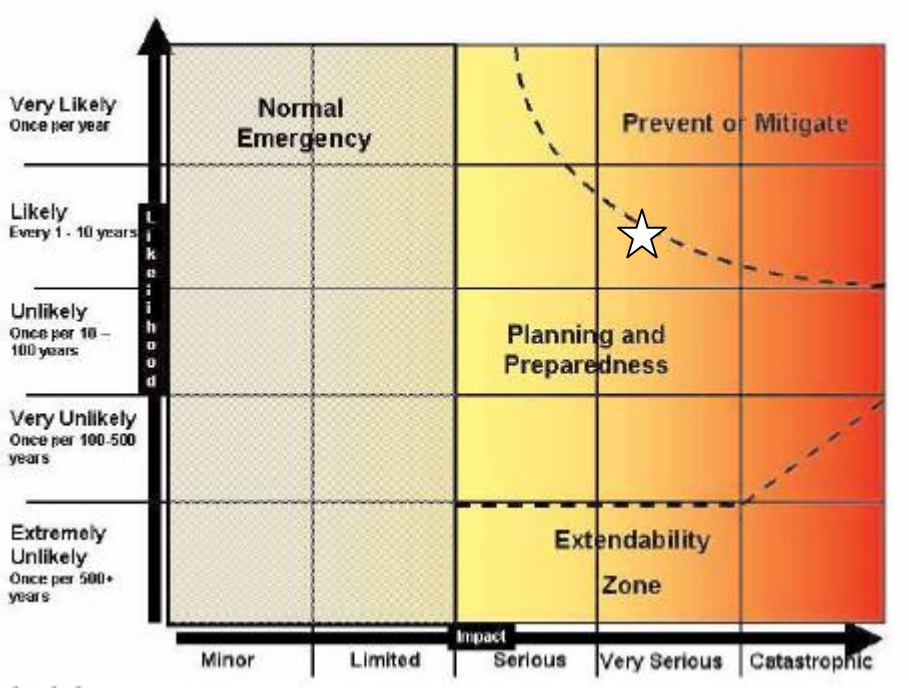
Ireland:
Truck/chemical leak, Tipperary, 1983

International:
Gas tanker explosion, Spain, 1978

3. Assessment of Impact and Likelihood

Hazard	Impact				Likelihood
	Human Welfare	**Environment**	**Physical Infrastructure**	**Speed of Development/ Escalation**	
Hazmat	**Very Serious** Fatalities (5-49) Serious Injuries(<100)	**Very Serious** Heavy contamination, localised effects or extended duration	**Limited** Damage to road network, vehicles and property. Traffic Congestion. Road Closure. (0.5-3M Euro)	Immediate	Likely

4. Position on Risk Matrix



5. Prevention/Control/Mitigation Measures in Place

Garda enforcement of Traffic legislation
New measures in recent years – Garda Traffic Corp established, Penalty points system introduced, random breath testing in place
Speed limits in danger areas
Road Safety Campaigns
Inter-Agency co-operation, training & exercising
Inspections by customs and exercise officers
Requirements for drivers to obtain Haz-chem certification
Hazardous material identification system
Training for Fire Service personnel in responding to incidents involving hazardous materials

Road building and maintenance programmes- Sligo County Council & NRA.

6. Risk Management Approach: Prevention/Control/Mitigation Measures Required

Inter-Agency Co-operation, training & Exercises.
Hazmat Plan for Sligo County Council
Hold Joint Exercises with Harbour Authority, Irish Coast Guard, Oil Pollution Teams, Civil Defence, Iarnrod Éireann etc.
Protocols between Environment & Fire Service, Roads Section, Water Services and Environment in relation to response to incidents on Roads involving Hazardous materials.
Fleet familiarization days between Fire Service & Iarnrod Éireann
Advice and expertise of private sector to be utilised in the response to Chemical incidents

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INDIVIDUAL HAZARD RECORD SHEET - TrW1

HAZARD CATEGORY		**SUB-CATEGORY**
Transportation		Water (Marine)
Hazard Description		**Hazard Location**
Boat/Commercial vessel collision, runs aground or sinks		Vessel off Sligo coast or in Sligo Harbour or Sligo Bay
Prepared by:		**Approved by:**
Sligo Fire Service		Major Emergency Management Committee

1. Overview of Hazard

Sligo is the only working harbour between Galway and Derry. Two working jetties (Deepwater and Barytes) handle cargoes of coal, timber, fish meal and scrap. The Deepwater Jetty is 77m long and the Barytes Jetty 55m. Sligo Port has facilities for ships up to 2000dwt. (metric tons of deadweight). The maximum draught for vessels is 5.2m, maximum length 110m with bow thrusters and 100m without bow thruster.

Work is currently underway on the installation of a floating pontoon at the Timber Jetty. This will allow leisure craft to berth within easy reach of the city and enable local operators to run sight-seeing and fishing trips around Sligo Bay and Innismurray, which will enhance the tourism potential of Sligo.

Cargoes Handled: All types of bulk cargo; particularly coal pet coke, timber, fishmeal, steel, fertiliser, peat, and grain

Safety Risks include:

- Collision between vessels in Harbour areas
- Vessels running aground in bad weather (storms / poor visibility)
- Vessel sinking/overturning
- Fire / Explosion on board
- Fire / Explosion or spill of dangerous substances at jetty during unloading or loading.
- Pollution of water by fuel oil or cargo (dangerous/hazardous substances)
- Air pollution due to fire/explosion

Response to a Marine Emergency is the responsibility of the Irish Coast Guard with lifeboats being provided by the RNLI. Sligo Local Authorities has responsibility where a marine emergency impacts on shore in County Sligo. Responsibilities of Sligo Local Authorities may include:

- Assist in the rescue of persons and the recovery of the dead
- Arrangements for accommodating survivors on shore
- Temporary mortuary facilities on shore
- Activation & implementation of Oil Pollution Plan (where necessary) to minimize damage to the environment
- Fire-fighting or rescue of persons on board (when vessel is docked in port)

- Mobilising Marine Fire-fighting Team of Dublin Fire Brigade (offshore event)

A number of local boats operate from Rosses Point and Mullaghmore offering angling and island trips, coastal sightseeing. Inishmurray Island is 6km from the Sligo Coast and trips are weather dependent.

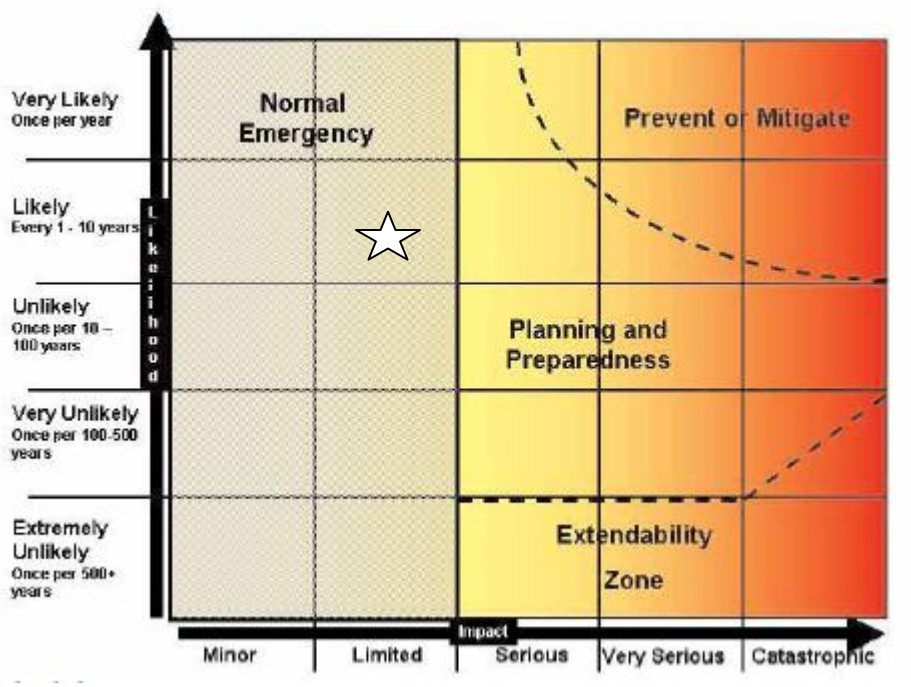
2. Key Historical Evidence

Cruise Liner Fire, Sligo Harbour, 2001
Whiddy Island, Bantry, Co. Cork 1979, 50 fatalities
Kowloon Bridge, Toe Head, West Cork, 1986. Pollution following sinking of vessel.
Herald of Free Enterprise, Zeebrugee, 1987. 193 fatalities.

3. Assessment of Impact and Likelihood

Hazard	Impact				Likelihood
	Human Welfare	**Environment**	**Physical Infrastructure**	**Speed of Development/ Escalation**	
Marine	**Limited** Fatalities (1)	**Serious** Simple contamination. Unknown contamination risk from cargo. Marine life contamination.	**Very Serious** 0.5-3M Euro	Rapid	Likely

4. Position on Risk Matrix



5. Prevention/Control/Mitigation Measures in Place

Oil Pollution Plan required by Harbour Authorities.
Marine Emergency Plan.
Shipping movements in ports under the control of Harbour Master.
Harbour Pilots.
Local boat hire certified by Dept. of Marine.

6. Risk Management Approach: Prevention/Control/Mitigation Measures Required

Inter-Agency Co-operation, training & Exercises.
Oil pollution plan required for Sligo County Council
Hold Joint Exercises with Principal Response Agencies, Harbour Authorities, Irish Coast Guard, Oil Pollution Teams & Civil Defence

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INDIVIDUAL HAZARD RECORD SHEET – TeC1

HAZARD CATEGORY		**SUB-CATEGORY**
Technological		Industrial Accident
Hazard Description		**Hazard Location**
Chemical		Sligo Town
Prepared by:		**Approved by:**
Sligo Fire Service		Major Emergency Management Committee

1. Overview of Hazard

Chemical incidents can arise not only in chemical factories, but in many other premises, farms, educational institutions, laboratories.
Such chemicals encountered may be:

- Explosives
- Gases
- Oxidising
- Toxic or very toxic
- Infectious substances
- Corrosive
- Flammable
- Irritant
- Allergenic
- Asphyxiant
- Radio-active

2. Key Historical Evidence

Irish Examples:

- Abbott Finisklin, Sligo, 2007.
- Whiddy Island, Co. Cork 1979, 50 fatalities
- Hicksons Pharmachem, Ringaskiddy, Co. Cork1993

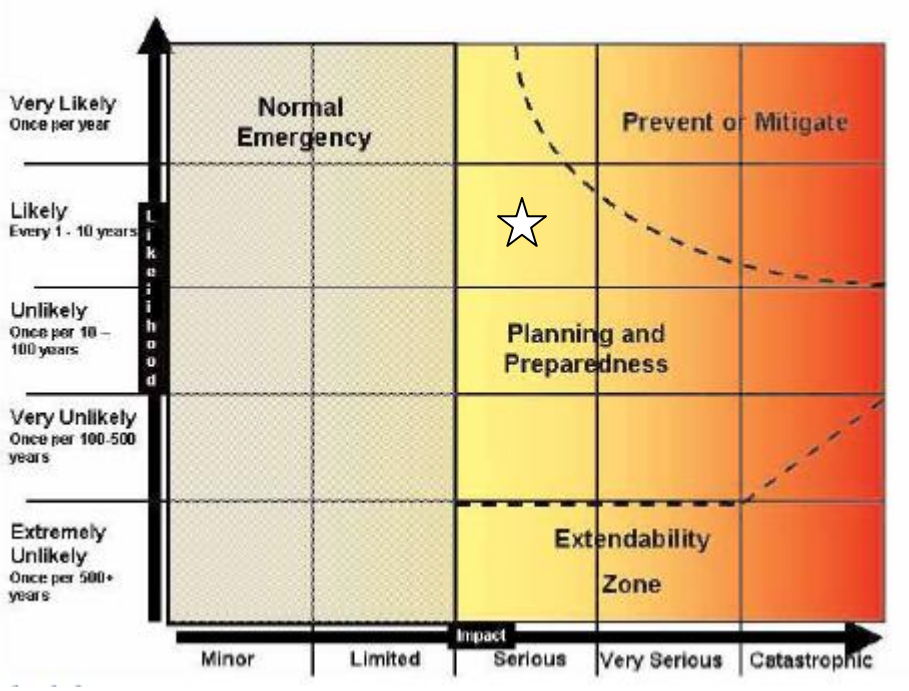
International Examples:

- Seveso 1976
- Bhopal 1984
- Sandoz 1986
- Toulouse 2004
- Buncefield 2005

3. **Assessment of Impact and Likelihood**

Hazard	**Impact**				**Likelihood**
	Human Welfare	**Environment**	**Physical Infrastructure**	**Speed of Development/ Escalation**	
Chemical	**Serious** Fatalities (2-4) Serious Injury (20) Significant hospitalisation. Large number of people displaced for 6-24 hours or possibly beyond; up too 500 evacuated. External resources required.	**Serious** Simple contamination, widespread effects for extended duration. Fire damage Deposition of Toxic Material, Soil Contamination, Fire-water Runoff contamination. Possible Marine life contamination.	**Serious** Explosive or fire destruction and damage. Traffic disruption. (3-10 Euro)	Rapid	Likely 1-10 years

4. **Position on Risk Matrix**



5. Prevention/Control/Mitigation Measures in Place

Inter-Agency Co-operation and Training, Exercising Inspection & enforcement of European Communities (COMAH) Regulations 2006 by

HSA
Internal Emergency Plan (Risk Holder)
External Emergency Plan by Principal Response Agencies
On-site works fire brigade in some installations.
Public information provided to neighbours.
Building Regulations & Building Control enforcement
Inspection of buildings by Building Control Officers & Fire Officers

6. Risk Management Approach: Prevention/Control/Mitigation Measures Required

Continued Inter-Agency Co-operation, training & exercising
Continued Pre-fire planning and Fire Service familiarisation of sites.
Analysis of adequacy of fire-fighting water supply and hydrants required including facilities for fire-fighting runoff.
Analysis of adequacy of existing emergency systems in installations e.g. bund sizes, flangible roofs, fire-water retention tanks, water deluge systems, high level alarms, fire & gas detection systems.
Inspection of installations by Fire Service under Fire Services Act.
Licensing of Bulk Stores of Petroleum & Oil Jetties under the Dangerous Substance Act.

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INDIVIDUAL HAZARD RECORD SHEET – TeE1

HAZARD CATEGORY		**SUB-CATEGORY**
Technological		Explosions
Hazard Description		**Hazard Location**
Acetylene Cylinder		Underground Car Park
Prepared by:		**Reviewed by:**
Sligo Fire Service		Major Emergency Management Committee

1. Overview of Hazard

Safety Risks include:

- Fire/explosion at underground car park
- Failure of high pressure acetylene cylinder
- Fire near acetylene cylinder
- Acetylene can undergo a double explosion
- Collapse of building due to structural failure or explosion

2. Key Historical Evidence

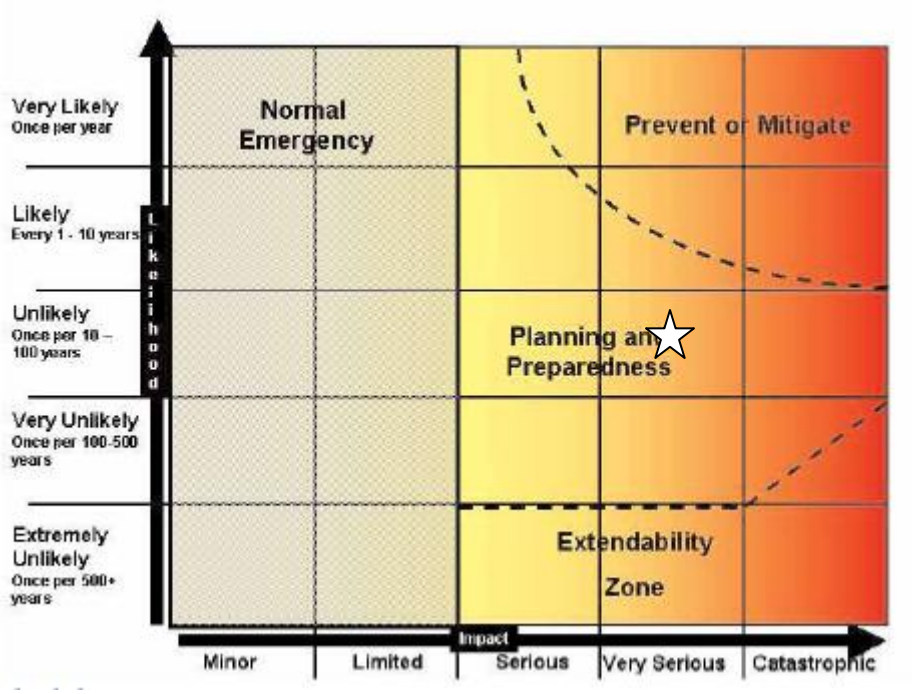
Irish Examples:

International Examples:

3. Assessment of Impact and Likelihood

Hazard	**Impact**				**Likelihood**
	Human Welfare	**Environment**	**Physical Infrastructure**	**Speed of Development/ Escalation**	
Explosion (Acetylene)	**Very Serious** Fatalities (5-49) Serious Injury (up to 100) Evacuated (up to 2000)	**Limited** Fire damage, Smoke damage.	**Very Serious** Property destruction, fire damage, building collapse, traffic disruption. Loss of services to a wide area. (10-25M Euro)	Rapid	Unlikely - Once per 10 to 100 years

4. Position on Risk Matrix



5. Prevention/Control/Mitigation Measures in Place

Carry out regular inspections if all premises known to have bulk supplies of acetylene cylinders. Operated to Irish and international recognised safety standards.

6. Risk Management Approach: Prevention/Control/Mitigation Measures Required

Inter-Agency Cooperation and Training, Exercising. Identify property and community at risk in the vicinity of any bulk storage of acetylene cylinders and inform relevant people of precautions to be taken.

INDIVIDUAL HAZARD RECORD SHEET – TeE2

HAZARD CATEGORY		**SUB-CATEGORY**
Technological		Explosions
Hazard Description		**Hazard Location**
Explosion		County Sligo
Prepared by:		**Reviewed by:**
Sligo Fire Service		Major Emergency Management Committee

1. Overview of Hazard

Chemical Factories
Petrol Stations
Quarries
Terrorist

Safety Risks include:

- Explosives pose the greatest and most immediate danger to life and property.
- Chemical explosives contain fuel and oxygen which when initiated, burn extremely quickly producing large quantities of hot gases.
- Collapse of building due to structural failure or explosion
- Failure of high pressure pipeline
- Construction near/over gas lines.
- Fire near gas lines.

2. Key Historical Evidence

Irish Examples:

- Raglan House 1984, Edgeworthstown 1995

International Examples:

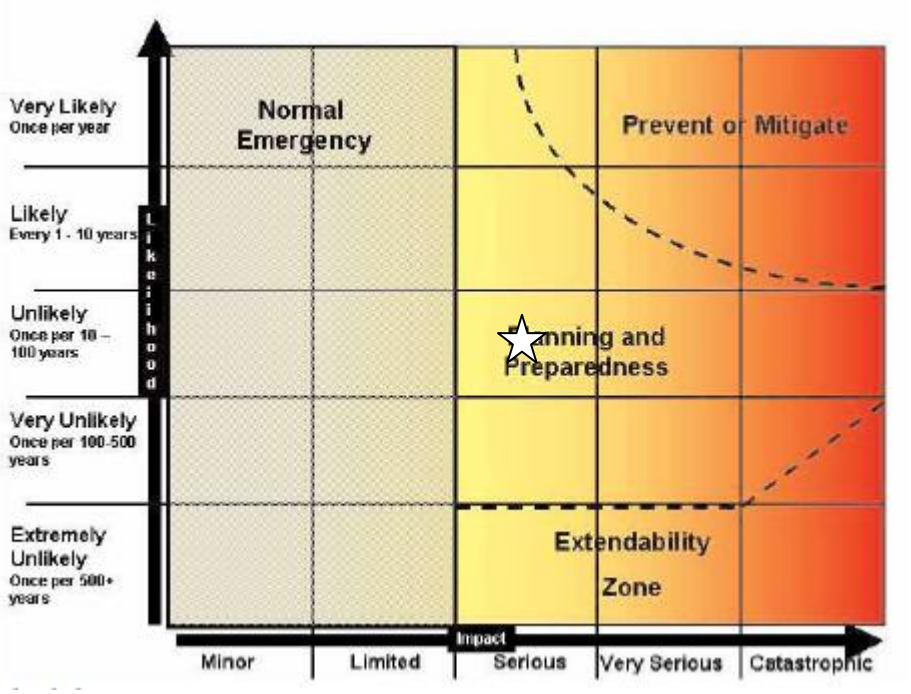
- Piper Alpha, UK, Oil platform explosion, 1988
- Scunthorpe, UK, Blast furnace explosion, 1975
- Clarkson, UK, Gas explosion, 1971

3. Assessment of Impact and Likelihood

Hazard	**Impact**				**Likelihood**
	Human Welfare	**Environment**	**Physical Infrastructure**	**Speed of Development/ Escalation**	
Explosion	**Serious** Fatalities (2-4) Serious Injury (20)	**Limited** Fire damage, Smoke damage. Risk of fire water runoff	**Serious** Property destruction, fire damage, building	Rapid	Unlikely - Once per 10 to 100 years

		contaminating drinking water and rivers.	collapse, traffic disruption. Loss of gas supply service to a wide area. (3-10M Euro)		

4. Position on Risk Matrix



5. Prevention/Control/Mitigation Measures in Place

Carry out regular inspections if all premises known to store or use explosives. Operated to Irish and international recognised safety standards.

6. Risk Management Approach: Prevention/Control/Mitigation Measures Required

Inter-Agency Cooperation and Training, Exercising. Identify property and community at risk in the vicinity of any explosives, gas facility/pipeline and inform relevant people of precautions to be taken.

INDIVIDUAL HAZARD RECORD SHEET – TeE3

HAZARD CATEGORY		**SUB-CATEGORY**
Technological		Explosions
Hazard Description		**Hazard Location**
Garages		County Sligo
Prepared by:		**Reviewed by:**
Sligo Fire Service		Major Emergency Management Committee

1. Overview of Hazard

Safety Risks include:

- Struck by vehicular traffic
- Small fires may occur in adjoining buildings following an explosion
- Ignition of highly flammable gases or vapour clouds
- Failure of high pressure pipeline
- Fire near pipelines.

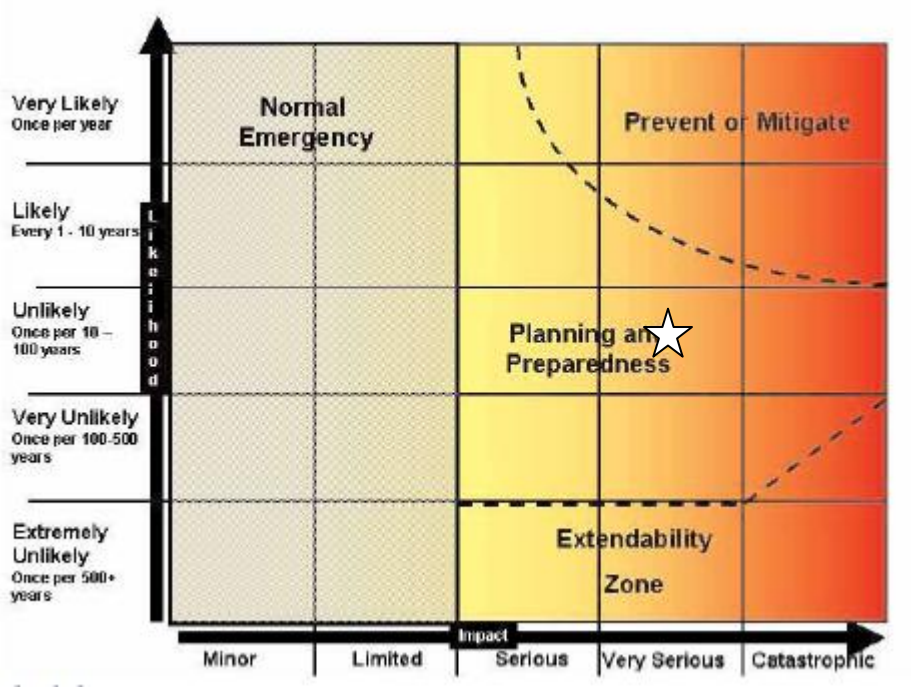
2. Key Historical Evidence

Irish Examples:
Kinlough, Leitrim, 2006

3. Assessment of Impact and Likelihood

Hazard	**Impact**				**Likelihood**
	Human Welfare	**Environment**	**Physical Infrastructure**	**Speed of Development/ Escalation**	
Explosion	**Very Serious** Fatalities (5 to 49) Serious Injury (<100) Evacuated (<2000)	**Limited** Fire damage, Smoke damage. Risk of fire water runoff contaminating drinking water and rivers.	**Very Serious** Property destruction, fire damage, building collapse, traffic disruption. Loss of gas supply service to a wide area. (10-25M Euro)	Rapid	Unlikely - Once per 10 to 100 years

4. Position on Risk Matrix



5. Prevention/Control/Mitigation Measures in Place

The pipeline network is built and operated to Irish and international recognised safety standards.
Building Regulations & Building Control enforcement
Inspection of buildings by Building Control Officers & Fire Officers
Professional supervision by engineers / architects of construction projects

6. Risk Management Approach: Prevention/Control/Mitigation Measures Required

Inter-Agency Cooperation and Training, Exercising.
Identify property and community at risk in the vicinity of any gas facility/pipeline and inform relevant people of precautions to be taken.

INDIVIDUAL HAZARD RECORD SHEET – TeF1

HAZARD CATEGORY		**SUB-CATEGORY**
Technological		Fire
Hazard Description		**Hazard Location**
Nightclubs, Pubs, Restaurant		County Sligo
Prepared by:		**Approved by:**
Sligo Fire Service		Major Emergency Management Committee

1. Overview of Hazard

Premises fire in building containing large numbers of people such as:

- Bar / Restaurant / Nightclubs

Hazards:

- Difficulty of locating the fire
- Complex access arrangements
- Unusual patterns of fire spread and behaviour

2. Key Historical Evidence

Ireland:

- Ireland: 1981, Dublin. Stardust nightclub fire. 48 fatalities.
- Ireland: 1980, Bundoran. Central hotel fire. 10 fatalities.

International:

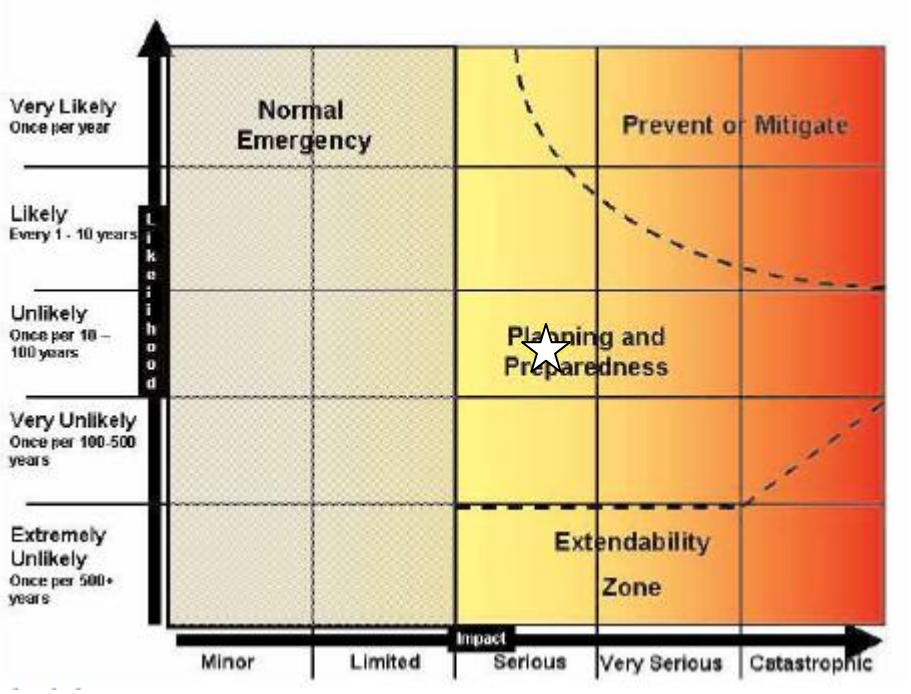
- Netherlands: 2001, Volendam. Cafe/nightclub fire. 10 fatalities.
- Sweden: 1998, Gothenburg. Dance hall fire. 63 fatalities.

3. Assessment of Impact and Likelihood

Hazard	**Impact**				**Likelihood**
	Human Welfare	**Environment**	**Physical Infrastructure**	**Speed of Development/ Escalation**	
Fire	**Serious** Fatalities (2-4) Serious Injuries (20) Local evacuation of nearby	**Limited** Simple contamination, localised effects from Fire damage. Smoke damage Fire water	**Serious** Fire Damage to building and adjacent properties. Possible collapse of building.	Rapid	Unlikely

	buildings	runoff. Risk to water supplies from runoff. Air pollution, toxic fumes. Asbestos risk.	(3-10M Euro) Closure of roads and traffic disruption		

4. Position on Risk Matrix



5. Prevention/Control/Mitigation Measures in Place

Building Regulations & Building Control enforcement.
Responsibility on owners & occupiers of buildings to have a fire safety management programme in place including procedures for the prevention of fire and the safe evacuation of the building.
Existing building fire safety inspection programme

6. Risk Management Approach: Prevention/Control/Mitigation Measures Required

Inter-Agency Co-operation and Training, Exercising
During performance inspections if appropriate to building
Pre-fire planning if appropriate.

INDIVIDUAL HAZARD RECORD SHEET – TeF2

HAZARD CATEGORY		**SUB-CATEGORY**
Technological		Fire
Hazard Description		**Hazard Location**
Hospitals		County Sligo
Prepared by:		**Approved by:**
Sligo Fire Service		Major Emergency Management Committee

1. Overview of Hazard

Premises fire in building containing large numbers of people such as:

- Hospitals, Nursing Homes and Care Facilities

Hazards:

- Difficulty of locating the fire
- Complex access arrangements
- Unusual patterns of fire spread and behaviour
- The presence of radioactive sources
- Biological hazards
- High voltage electrical equipment
- Involvement of compressed gas cylinders

2. Key Historical Evidence

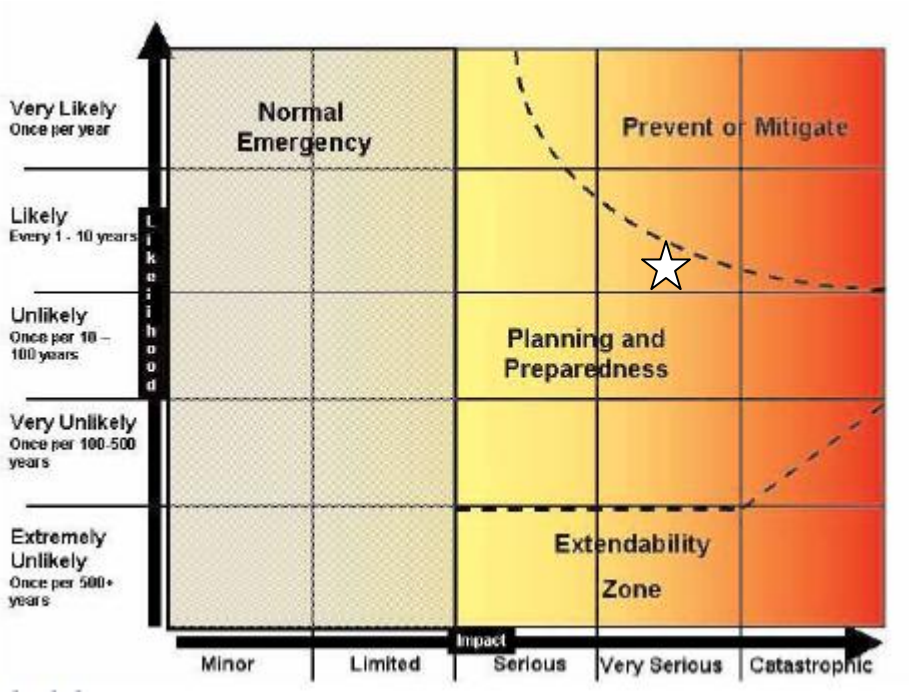
International:
Holland Hospital Fire, 1971 [11 fatalities, 12 injuried]

3. Assessment of Impact and Likelihood

Hazard	**Impact**				**Likelihood**
	Human Welfare	**Environment**	**Physical Infrastructure**	**Speed of Development/ Escalation**	
Fire	**Very Serious** Fatalities (5-49) Serious Injuries (100) Local evacuation of nearby buildings	**Limited** Simple contamination, localised effects from Fire damage. Smoke damage Fire water runoff. Risk to water supplies from runoff.	**Serious** Fire Damage to building and adjacent properties. Possible collapse of building. (3-10M Euro) Closure of roads and traffic	Rapid	Likely

		Air pollution, toxic fumes. Asbestos risk.	disruption		

4. Position on Risk Matrix



5. Prevention/Control/Mitigation Measures in Place

Building Regulations & Building Control enforcement. Responsibility on owners & occupiers of buildings to have a fire safety management programme in place including procedures for the prevention of fire and the safe evacuation of the building. Existing building fire safety inspection programme

6. Risk Management Approach: Prevention/Control/Mitigation Measures Required

Inter-Agency Co-operation and Training, Exercising During performance inspections if appropriate to building Pre-fire planning if appropriate.

INDIVIDUAL HAZARD RECORD SHEET – TeF3

HAZARD CATEGORY		**SUB-CATEGORY**
Technological		Fire
Hazard Description		**Hazard Location**
Nursing Homes		County Sligo
Prepared by:		**Approved by:**
Sligo Fire Service		Major Emergency Management Committee

1. Overview of Hazard

Premises fire in building containing large numbers of people such as:

- Hospitals, Nursing Homes and Care Facilities

Hazards:

- Difficulty of locating the fire
- Complex access arrangements
- Unusual patterns of fire spread and behaviour
- Biological hazards
- High voltage electrical equipment
- Involvement of compressed gas cylinders

2. Key Historical Evidence

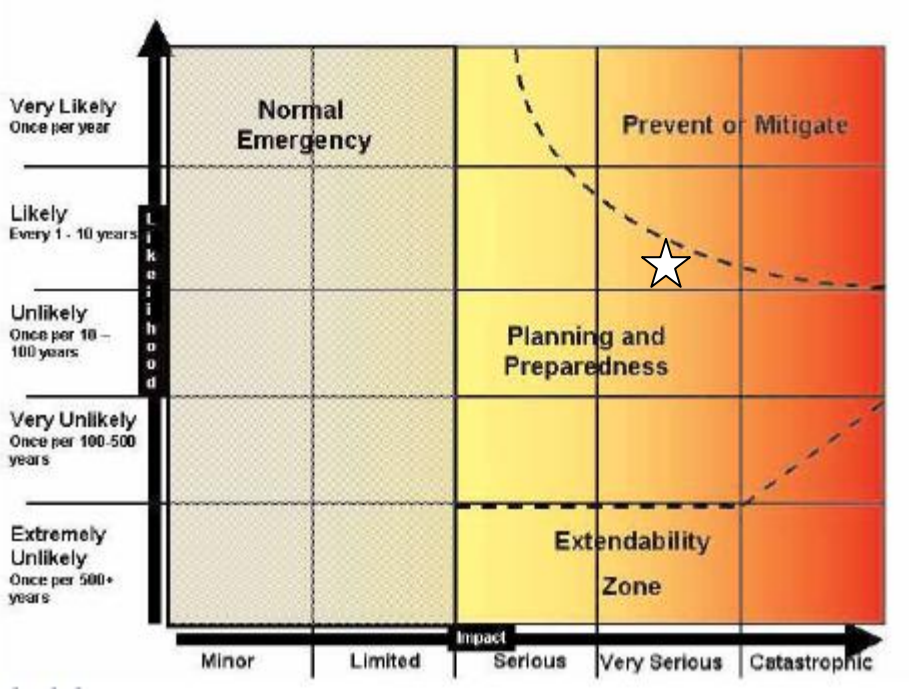
International:
Hessle, UK, Old people's home, 1977, [11 fatalities]

3. Assessment of Impact and Likelihood

Hazard	**Impact**				**Likelihood**
	Human Welfare	**Environment**	**Physical Infrastructure**	**Speed of Development/ Escalation**	
Fire	**Very Serious** Fatalities (5-49) Serious Injuries (100) Local evacuation of nearby buildings	**Limited** Simple contamination, localised effects from Fire damage. Smoke damage Fire water runoff. Risk to water supplies from	**Serious** Fire Damage to building and adjacent properties. Possible collapse of building. (3-10M Euro) Closure of roads and	Rapid	Likely

		runoff. Air pollution, toxic fumes. Asbestos risk.	traffic disruption		

4. Position on Risk Matrix



5. Prevention/Control/Mitigation Measures in Place

Building Regulations & Building Control enforcement.
Responsibility on owners & occupiers of buildings to have a fire safety management programme in place including procedures for the prevention of fire and the safe evacuation of the building.
Existing building fire safety inspection programme

6. Risk Management Approach: Prevention/Control/Mitigation Measures Required

Inter-Agency Co-operation and Training, Exercising
During performance inspections if appropriate to building
Pre-fire planning if appropriate.

INDIVIDUAL HAZARD RECORD SHEET – TeF4

HAZARD CATEGORY		**SUB-CATEGORY**
Technological		Fire
Hazard Description		**Hazard Location**
Hotel, Hostels & Guest buildings		County Sligo
Prepared by:		**Approved by:**
Sligo Fire Service		Major Emergency Management Committee

1. Overview of Hazard

Premises fire in building containing large numbers of people such as:

- Hotel, Hostels & Guest buildings

Hazards:

- Difficulty of locating the fire
- Complex access arrangements
- Unusual patterns of fire spread and behaviour

2. Key Historical Evidence

Ireland:
Bundoran, Donegal, Hotel fire, 1980 [11 fatalities]

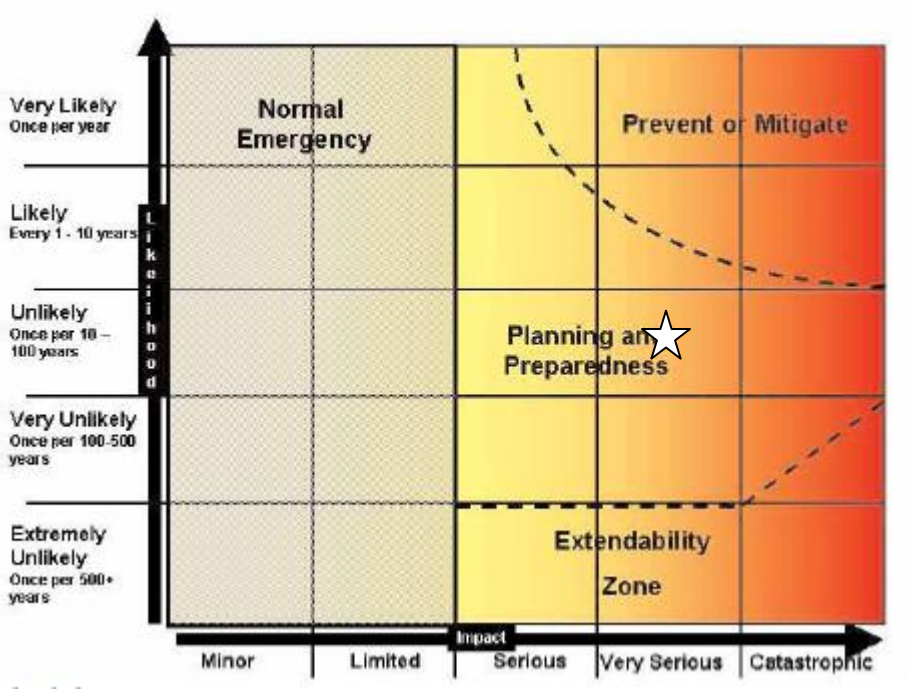
International:
Eindhoven, hotel fire, 1971 [13 fatalities]

3. Assessment of Impact and Likelihood

Hazard	**Impact**				**Likelihood**
	Human Welfare	**Environment**	**Physical Infrastructure**	**Speed of Development/ Escalation**	
Fire	**Very Serious** Fatalities (5-49) Serious Injuries (100) Local evacuation of nearby buildings	**Limited** Simple contamination, localised effects from Fire damage. Smoke damage Fire water runoff. Risk to water supplies from runoff. Air pollution, toxic fumes.	**Serious** Fire Damage to building and adjacent properties. Possible collapse of building. (3-10M Euro) Closure of roads and traffic disruption	Rapid	Unlikely

		Asbestos risk.			

4. Position on Risk Matrix



5. Prevention/Control/Mitigation Measures in Place

Building Regulations & Building Control enforcement. Responsibility on owners & occupiers of buildings to have a fire safety management programme in place including procedures for the prevention of fire and the safe evacuation of the building. Existing building fire safety inspection programme

6. Risk Management Approach: Prevention/Control/Mitigation Measures Required

Inter-Agency Co-operation and Training, Exercising During performance inspections if appropriate to building Pre-fire planning if appropriate.

INDIVIDUAL HAZARD RECORD SHEET – TeF5

HAZARD CATEGORY		**SUB-CATEGORY**
Technological		Fire
Hazard Description		**Hazard Location**
Threatres/Cinemas/ Shopping Centre/Large Retail Store		County Sligo
Prepared by:		**Approved by:**
Sligo Fire Service		Major Emergency Management Committee

1. Overview of Hazard

Premises fire in building containing large numbers of people such as:

- Threatres/Cinemas/ Shopping Centre /Large Retail Store

Hazards:

- Difficulty of locating the fire
- Complex access arrangements
- Unusual patterns of fire spread and behaviour

2. Key Historical Evidence

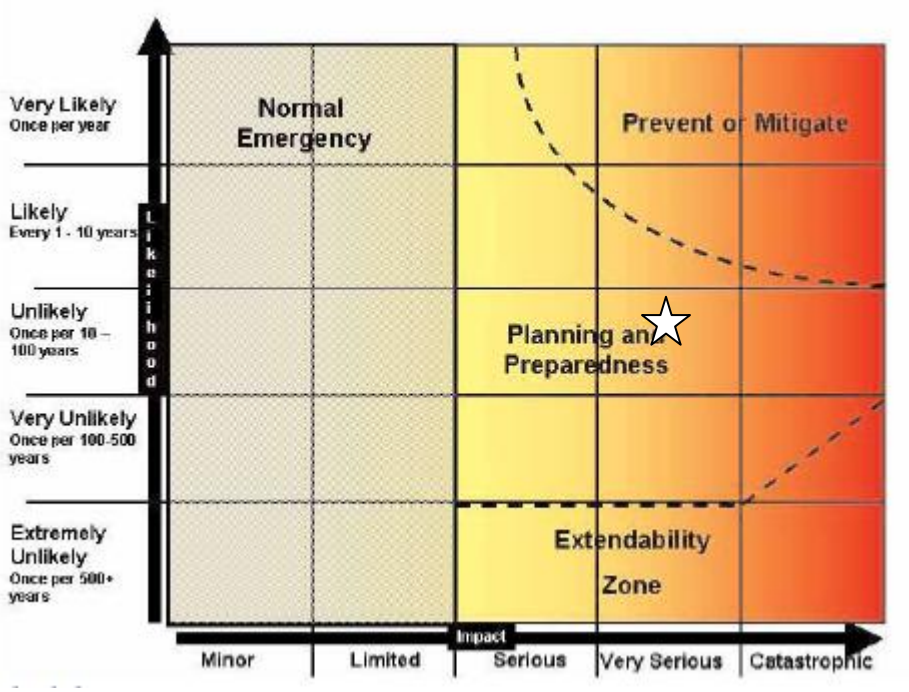
International:
Manchester, fire in Woolworths, 1979 [12 fatalities]
Isle of Man, Leisure centre fire, 1973, [50 fatalities]

3. Assessment of Impact and Likelihood

Hazard	**Impact**				**Likelihood**
	Human Welfare	**Environment**	**Physical Infrastructure**	**Speed of Development/ Escalation**	
Fire	**Very Serious** Fatalities (5-49) Serious Injuries (100) Local evacuation of nearby buildings	**Limited** Simple contamination, localised effects from Fire damage. Smoke damage Fire water runoff. Risk to water supplies from runoff. Air pollution,	**Serious** Fire Damage to building and adjacent properties. Possible collapse of building. (3-10M Euro) Closure of roads and traffic disruption	Rapid	Unlikely

		toxic fumes. Asbestos risk.			

4. Position on Risk Matrix



5. Prevention/Control/Mitigation Measures in Place

Building Regulations & Building Control enforcement. Responsibility on owners & occupiers of buildings to have a fire safety management programme in place including procedures for the prevention of fire and the safe evacuation of the building. Existing building fire safety inspection programme

6. Risk Management Approach: Prevention/Control/Mitigation Measures Required

Inter-Agency Co-operation and Training, Exercising During performance inspections if appropriate to building Pre-fire planning if appropriate.

INDIVIDUAL HAZARD RECORD SHEET – TeF6

HAZARD CATEGORY		**SUB-CATEGORY**
Technological		Fire
Hazard Description		**Hazard Location**
Large Residential		County Sligo
Prepared by:		**Approved by:**
Sligo Fire Service		Major Emergency Management Committee

1. Overview of Hazard

Premises fire in building containing large numbers of people such as:

- Apartment buildings
- Care Facilities
- Boarding Schools

Hazards:

- Difficulty of locating the fire
- Complex access arrangements
- Unusual patterns of fire spread and behaviour
- The presence of radioactive sources
- Biological hazards
- High voltage electrical equipment
- Involvement of compressed gas cylinders

2. Key Historical Evidence

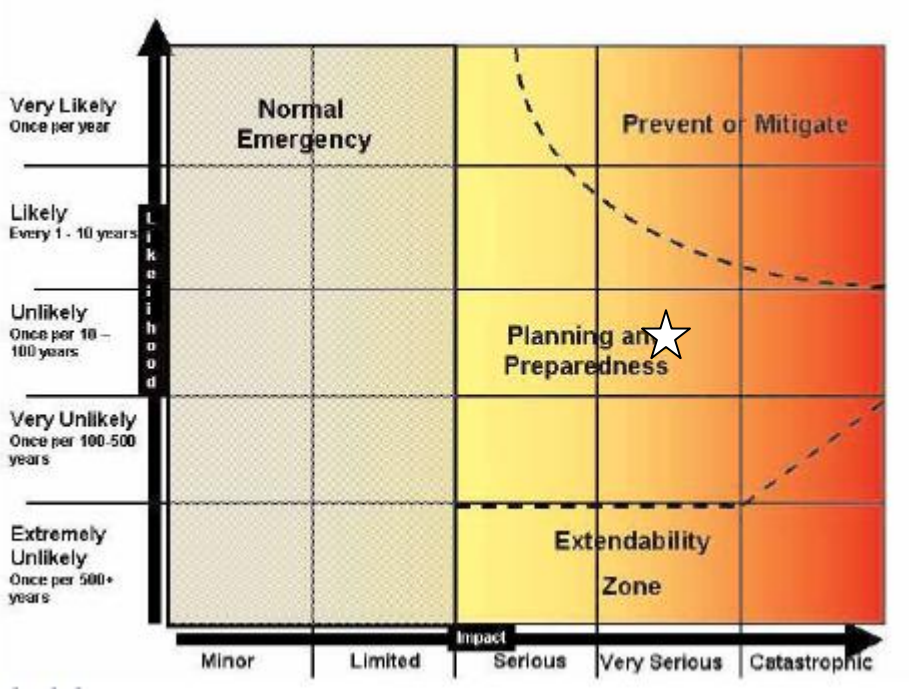
1977, Hessle, UK, fire in old people's home [11 fatalities]

3. Assessment of Impact and Likelihood

Hazard	**Impact**				**Likelihood**
	Human Welfare	**Environment**	**Physical Infrastructure**	**Speed of Development/ Escalation**	
Fire	**Very Serious** Fatalities (5-49) Serious Injuries (up to 100) Local evacuation of nearby buildings	**Limited** Simple contamination, localised effects from Fire damage. Smoke damage Fire water runoff. Risk to water supplies from runoff. Air pollution,	**Serious** Fire Damage to building and adjacent properties. Possible collapse of building. (3-10M Euro) Closure of roads and traffic disruption	Rapid	Unlikely

		toxic fumes. Asbestos risk.			

4. Position on Risk Matrix



5. Prevention/Control/Mitigation Measures in Place

Building Regulations & Building Control enforcement. Responsibility on owners & occupiers of buildings to have a fire safety management programme in place including procedures for the prevention of fire and the safe evacuation of the building. Existing building fire safety inspection programme

6. Risk Management Approach: Prevention/Control/Mitigation Measures Required

Inter-Agency Co-operation and Training, Exercising During performance inspections if appropriate to building Pre-fire planning if appropriate.

INDIVIDUAL HAZARD RECORD SHEET – TeF7

HAZARD CATEGORY		**SUB-CATEGORY**
Technological		Fire
Hazard Description		**Hazard Location**
Caravan Park/Camp sites		County Sligo
Prepared by:		**Approved by:**
Sligo Fire Service		Major Emergency Management Committee

1. Overview of Hazard

Premises fire in building containing large numbers of people such as:

- Caravan park/Camp Site

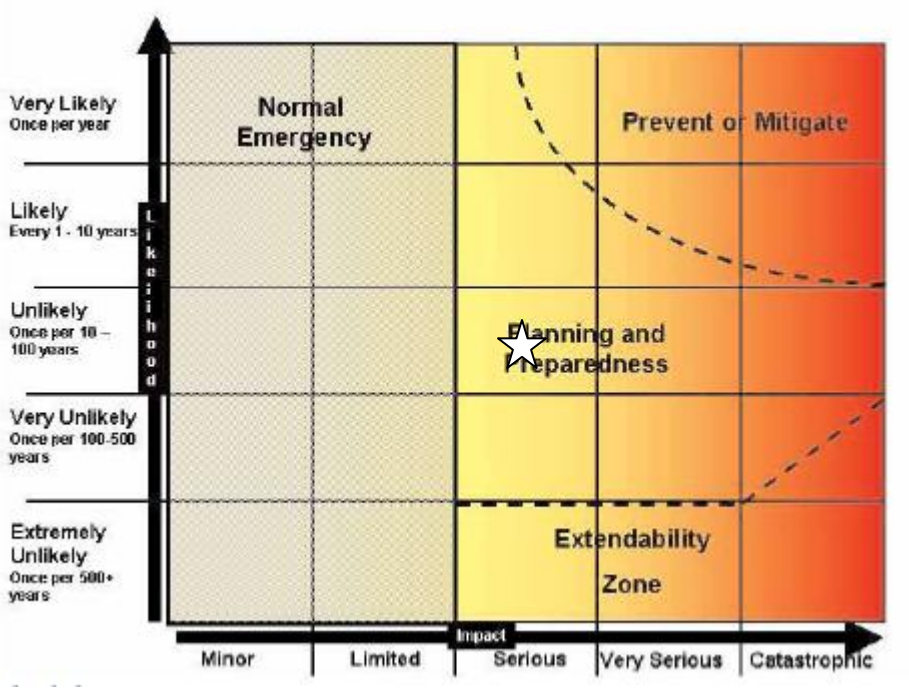
Hazards/Risks:
Residential caravans could contain hazards such as LPG compressed gas cylinders used for food and cooking.

2. Key Historical Evidence

3. Assessment of Impact and Likelihood

Hazard	**Impact**				**Likelihood**
	Human Welfare	**Environment**	**Physical Infrastructure**	**Speed of Development/ Escalation**	
Fire	**Serious** Fatalities (2-4) Serious Injuries (20) Number of people displaced for 6-24 hours	**Limited** Simple contamination, localised effects from Fire damage. Smoke damage Fire water runoff. Risk to water supplies from runoff. Air pollution, toxic fumes. Asbestos risk.	**Limited** Fire Damage to caravans/tents and adjacent properties. Destruction of caravans and tents. (0.5-3M Euro) Closure of roads and traffic disruption	Rapid	Unlikely

4. Position on Risk Matrix



5. Prevention/Control/Mitigation Measures in Place

Building Regulations & Building Control enforcement. Responsibility on owners & occupiers of buildings to have a fire safety management programme in place including procedures for the prevention of fire and the safe evacuation of the building. Existing building fire safety inspection programme

6. Risk Management Approach: Prevention/Control/Mitigation Measures Required

Inter-Agency Co-operation and Training, Exercising During performance inspections if appropriate to building Pre-fire planning if appropriate.

INDIVIDUAL HAZARD RECORD SHEET – TeI1

HAZARD CATEGORY		**SUB-CATEGORY**
Technological		Industrial Accidents
Hazard Description		**Hazard Location**
Explosions/Industrial Fires/Emissions		Sligo Harbour
Prepared by:		**Approved by:**
Sligo Fire Service		Major Emergency Management Committee

1. Overview of Hazard

A loss of critical infrastructure at Sligo Harbour may occur due to a number of factors

- Natural Disaster
- Explosion
- Industrial Fire
- Gas/Fluid Emissions

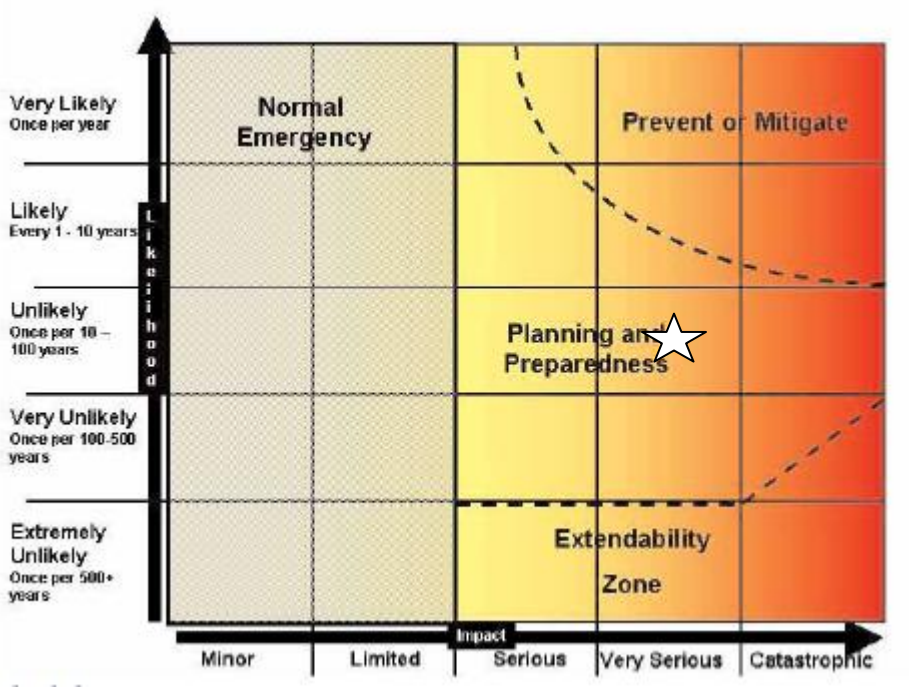
2. Key Historical Evidence

Irish Examples:
Whiddy Island, Co. Cork 1979, 50 fatalities
Hicksons Pharmachem, Ringaskiddy, Co. Cork1993
International Examples:
Seveso 1976
Bhopal 1984
Sandoz 1986
Buncefield 2005

3. Assessment of Impact and Likelihood

Hazard	**Impact**				**Likelihood**
	Human Welfare	**Environment**	**Physical Infrastructure**	**Speed of Development / Escalation**	
Fire / Explosion / Toxic poisoning	**Very Serious** Fatalities (5-49) Serious Injury (100) Significant hospitalisation. Possible toxic poisoning. Evacuation (500-1000)	**Very Serious** Heavy contamination, localised effects for extended duration. Fire damage Smoke damage, Deposition of Toxic Material, Soil Contamination, Fire-water Runoff contamination. Possible Marine life contamination including mudflats & birds.	**Very Serious** Fire Destruction, Fire Damage, Smoke Damage, Traffic disruption. (10-25M Euro)	Moderate to Rapid	Unlikely

4. Position on Risk Matrix



5. Prevention/Control/Mitigation Measures in Place

Inter-Agency Co-operation and Training, Exercising Inspection & enforcement of European Communities (COMAH) Regulations 2006 by HSA Sligo Local Authorities Major Emergency Plan Internal Emergency Plan Community Warning Alert

6. Risk Management Approach: Prevention/Control/Mitigation Measures Required

Inter-agency planning, exercising and preparedness Business Continuity Plan for Sligo County Council

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INDIVIDUAL HAZARD RECORD SHEET – TeP1

HAZARD CATEGORY		**SUB-CATEGORY**
Technological		Water Pollution
Hazard Description		**Hazard Location**
Water pollution of coastal waters or inland waterway		County Sligo
Prepared by:		**Approved by:**
Sligo Fire Service		Major Emergency Management Committee

1. Overview of Hazard

Many causes of water are contamination from sewage, fertilizers, motor fluids, chemicals, household and industrial hazardous wastes etc with the following hazards are associated:

- Harmful to human, animal or aquatic life through inhalation of fumes, ingestion, or dissolved oxygen depletion.
- Possibility of severe health consequences or death, environmental destruction, contamination of water supplies
- Low flash points and volatility
- Possibility of explosion, fire, suffocation, burns, leading to disfigurement or death and damage to property.
- Low viscosity and persistence, ability to spread on water and contaminate a wide area.
- Possibility of long term environmental consequence and serious financial costs associated with cleanup.
- Ballast water containing foreign species such as zebra mussels and comb jellyfish that colonize new environments to the detriment of native species and local economies.

2. Key Historical Evidence

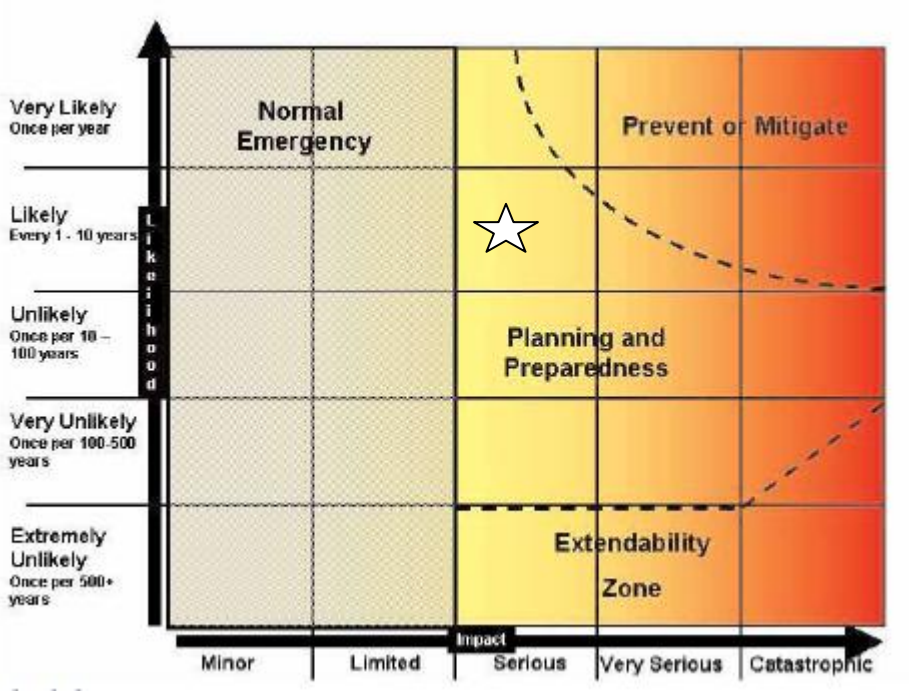
Ireland:
Whiddy Island, Bantry Bay, 1979

International:
Portugal, 1990
Spain, 1985

3. Assessment of Impact and Likelihood

Hazard	Impact				Likelihood
	Human Welfare	**Environment**	**Physical Infrastructure**	**Speed of Development/ Escalation**	
Pollution to air, water& land. Fire or Explosion.	**Serious** Possible fatalities. Serious injuries (20). Significant hospitalisation. Evacuation.	**Serious** Risk of fire. Botanic/ marine life birds effected. Risk to water supplies by oil or chemical dispersions.	**Limited** Possible disruption to shipping if incident occurs in port. (0.5-3M Euro)	Moderate with long term consequences.	Likely

4. Position on Risk Matrix



5. Prevention/Control/Mitigation Measures in Place

Training provided for some staff

6. Risk Management Approach: Prevention/Control/Mitigation Measures Required

Inter-agency co-operation, preparedness and training.

Protocols with Environment Section, Roads & Water Services section and Area Engineers in terms of response.
Water Pollution Plan required for Sligo County Council.
Utilisation of Civil Defence and Voluntary Emergency services in response
Use of the private sector in response & recovery.

INDIVIDUAL HAZARD RECORD SHEET – TeP2

HAZARD CATEGORY		**SUB-CATEGORY**
Technological		Water Pollution
Hazard Description		**Hazard Location**
Oil pollution of coastal waters or inland waterway		County Sligo
Prepared by:		**Approved by:**
Sligo Fire Service		Major Emergency Management Committee

1. Overview of Hazard

Oil can be toxic and explosive, the following hazards are associated:

- Toxicity to human animal or aquatic life through inhalation of fumes and ingestion
- Possibility of severe health consequences or death, environmental destruction, contamination of water supplies
- Low flash points and volatility
- Possibility of explosion, fire, suffocation, burns, leading to disfigurement or death and damage to property.
- Low viscosity and persistence, ability to spread on water and contaminate a wide area.
- Possibility of long term environmental consequence and serious financial costs associated with cleanup.

2. Key Historical Evidence

Ireland:
Whiddy Island, Bantry Bay, 1979

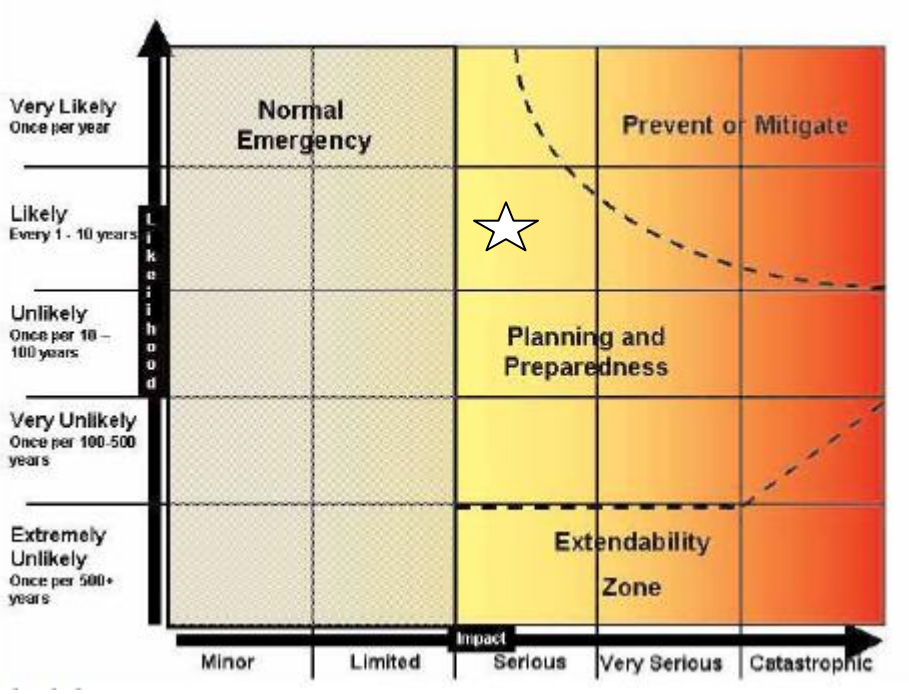
International:
Portugal, 1990
Spain, 1985

3. Assessment of Impact and Likelihood

Hazard	**Impact**				**Likelihood**
	Human Welfare	**Environment**	**Physical Infrastructure**	**Speed of Development/ Escalation**	
Toxic Pollution	**Serious** Possible	**Serious** Risk of fire.	**Limited** Possible	Moderate with long term	Likely

to air, water& land. Fire or Explosion.	fatalities. Serious injuries (20). Significant hospitalisation. Evacuation.	Botanic/ marine life birds effected. Risk to water supplies by oil or chemical dispersions.	disruption to shipping if incident occurs in port. (0.5-3M Euro)	consequences.	

4. Position on Risk Matrix



5. Prevention/Control/Mitigation Measures in Place

Oil Pollution available and machinery available in Area Offices Training provided for some staff

6. Risk Management Approach: Prevention/Control/Mitigation Measures Required

Inter-agency co-operation, preparedness and training. Protocols with Environment Section, Roads & Water Services section and Area Engineers in terms of response. Oil Pollution Plan required for Sligo County Council. Utilisation of Civil Defence and Voluntary Emergency services in response Use of the private sector in response & recovery.

INDIVIDUAL HAZARD RECORD SHEET – CE1

HAZARD CATEGORY		**SUB-CATEGORY**
Civil		Pandemic Influenza
Hazard Description		**Hazard Location**
Worldwide flu pandemic causing serious illness and death		Worldwide
Prepared by:		**Approved by:**
Sligo Fire Service		Major Emergency Management Committee

1. Overview of Hazard

Influenza pandemic is a worldwide flu epidemic. It can start when these three conditions are met:

1. A new influenza virus sub-type appears
2. It affects humans, causing serious illness
3. It spreads easily between humans

The risk of pandemic influenza is serious. Most new flu strains appear first in South-East Asia where large numbers of people are in close contact with foul and animals. Increased international travel means the next pandemic virus may spread quicker than any previous influenza pandemic. Currently, the avian flu virus (H5N1) meets the first two pandemic conditions but has not to date met the third condition – sustained human to human transmission.

The National Pandemic Plan has modelled the following scenario for pandemic influenza planning purposes:

- A cumulative attack rate of between 25% and 50% of the population
- A hospitalization rate between 0.55% and 3.7%
- A case fatality rate of between 0.37% and 2.5%

Experts predict another pandemic but cannot say exactly when it will happen. The World Health Organisation (WHO) believes the risk has increased over the past 2-3 years.

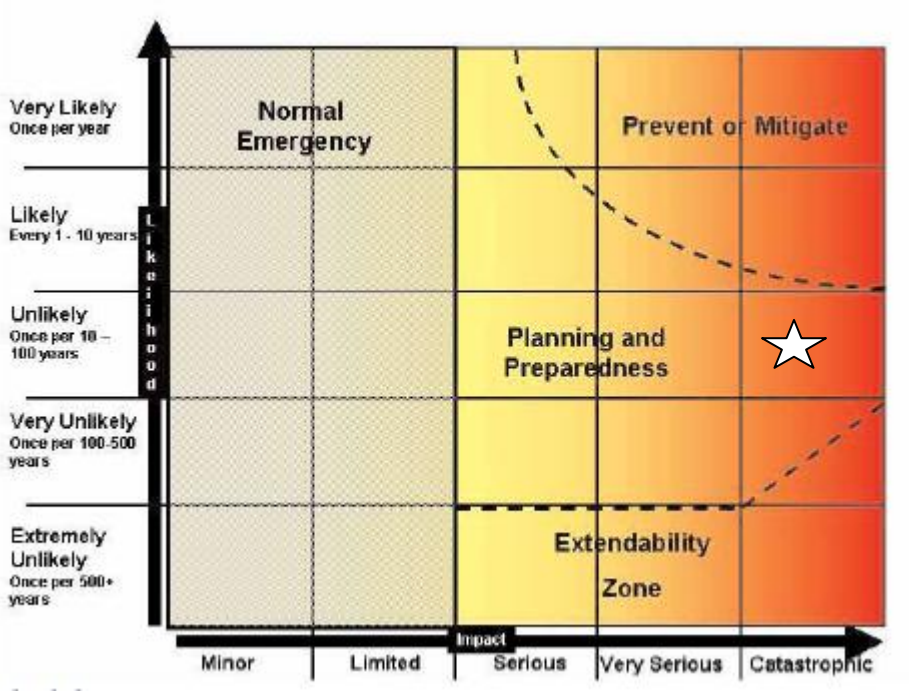
2. Key Historical Evidence

Spanish flu (1918-1919) – 40 million fatalities
Asian flu (1957-1958) – 2 million fatalities
Hong Kong flu ((1968-1969) – 1 million fatalities

3. Assessment of Impact and Likelihood

Hazard	Impact				Likelihood
	Human Welfare	**Environment**	**Physical Infrastructure**	**Speed of Development / Escalation**	
Pandemic influenza	**Catastrophic** Fatalities (>50) Hospitalisation (6,000 – 78,000) Illness (1-2 million)		**Catastrophic** Serious disruption to essential services due to illness and absenteeism	Slow - Moderate	Unlikely

4. Position on Risk Matrix



5. Prevention/Control/Mitigation Measures in Place

National Pandemic Influenza Plan
National stockpile of medicines and vaccines
Health Service Executive Plan for Influenza Pandemic
Surveillance by World Health Organisation, European Centre for Disease Control and Health Protection Surveillance Centre in Ireland.
Pre-prepared communications strategy and advice for the public in the event of an outbreak

6. Risk Management Approach: Prevention/Control/Mitigation Measures Required

Inter-agency planning, training & exercising. Business Continuity Plan for Sligo County Council Utilisation of Voluntary Emergency Services in the event of a Influenza Pandemic

INDIVIDUAL HAZARD RECORD SHEET – CMC1

HAZARD CATEGORY		**SUB-CATEGORY**
Civil		Major Crowd Safety
Hazard Description		**Hazard Location**
Concerts, Sport events, Other gatherings		County Sligo
Prepared by:		**Approved by:**
Sligo Fire Service		Major Emergency Management Committee

1. Overview of Hazard

The local authority's role in a major emergency due to crowds would be limited, with An Garda Síochána and the HSE taking lead roles.

Hazards and risks:

- Stabbings
- Hand thrown projectiles
- Physical assault
- Ambushes
- Booby traps in vehicles and buildings

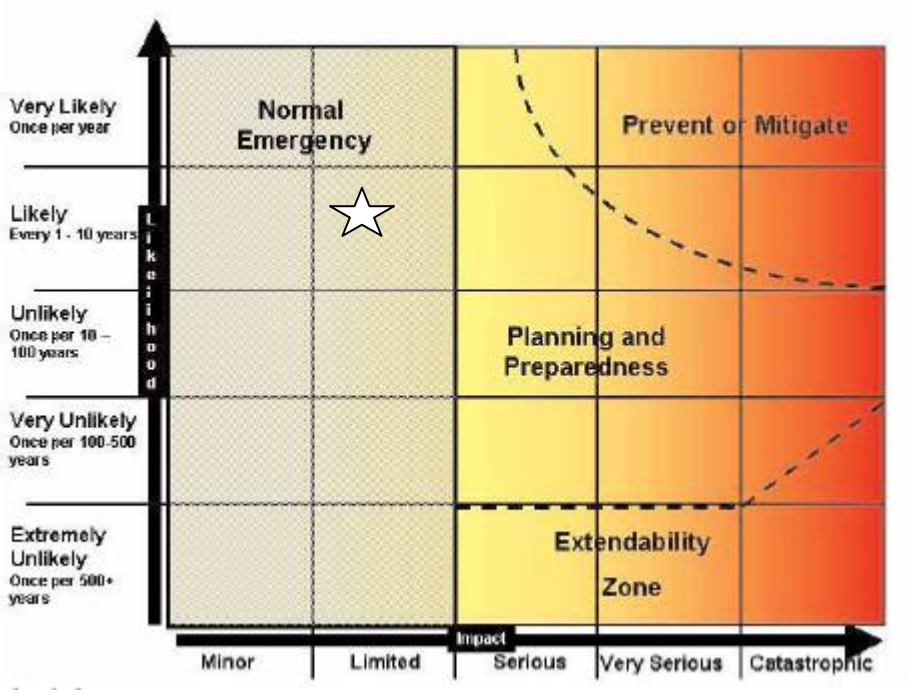
2. Key Historical Evidence

Irish Examples:
'Love Ulster March' 25th February, 2006
'Reclaim the Streets' protest, May Day, 2002
Lansdowne Road Football Riot, 4th November, 1995
International Examples:
Greece Riots, December 2008
Los Angeles (Rodney King) Riot, 29th April,1992
Hillsborough Disaster, 15th April, 1989

3. Assessment of Impact and Likelihood

Hazard	Impact				Likelihood
	Human Welfare	**Environment**	**Physical Infrastructure**	**Speed of Development / Escalation**	
Crowd Safety	**Limited** Single Fatality; limited number of people affected; a few serious injuries with hospitalisation and medical treatment required. Evacuation.	None	None	Rapid	Likely

4. Position on Risk Matrix



5. Prevention/Control/Mitigation Measures in Place

Laws and restrictions movement of people enforced by An Garda Síochána, Marshals, Stewarts, VES.

6. Risk Management Approach: Prevention/Control/Mitigation Measures Required

Limited role for Sligo County Council.

Prevention and mitigation measures will primarily be the responsibility of An Garda Síochána.

INDIVIDUAL HAZARD RECORD SHEET – CMC2

HAZARD CATEGORY		**SUB-CATEGORY**
Civil		Major Crowd Safety
Hazard Description		**Hazard Location**
World Rally Championship		I.T. Sligo, Sligo Town & County
Prepared by:		**Approved by:**
Sligo Fire Service		Major Emergency Management Committee

1. Overview of Hazard

The local authority's role in a major emergency due to crowds would be limited, with An Garda Síochána and the HSE taking lead roles.

Hazards and risks:

- Stabbings
- Hand thrown projectiles
- Physical assault
- Ambushes
- Booby traps in vehicles and buildings

2. Key Historical Evidence

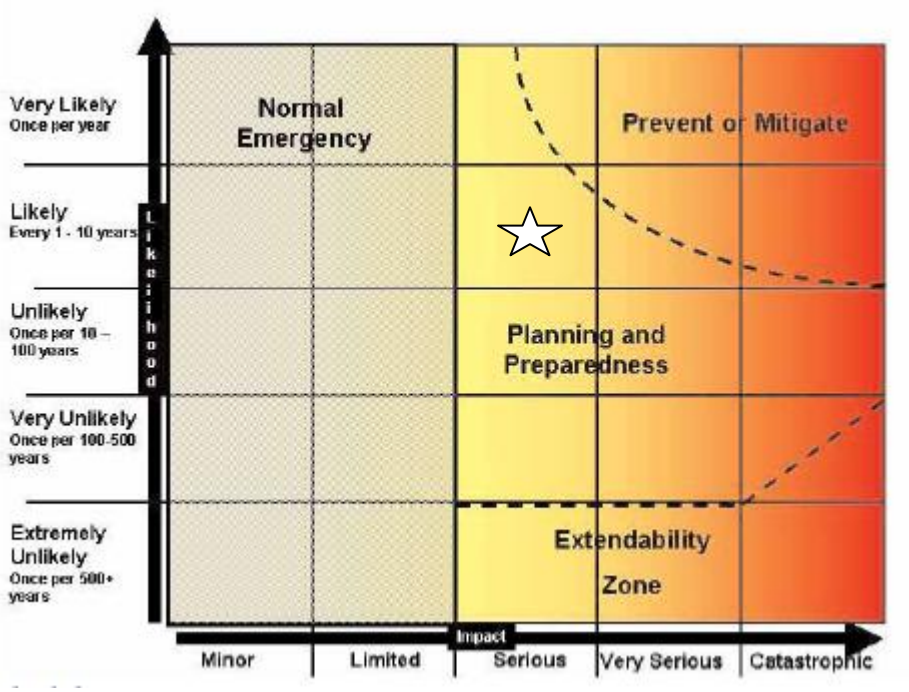
Irish Examples:
'Love Ulster March' 25th February, 2006
'Reclaim the Streets' protest, May Day, 2002
Lansdowne Road Football Riot, 4th November, 1995
International Examples:
Greece Riots, December 2008
Los Angeles (Rodney King) Riot, 29th April,1992
Hillsborough Disaster, 15th April, 1989

3. Assessment of Impact and Likelihood

Hazard	**Impact**				**Likelihood**
	Human Welfare	**Environment**	**Physical Infrastructure**	**Speed of Development / Escalation**	
Crowd Safety at WRC	**Serious** Multiple fatalities (2-4) Serious injuries (20). Significant	None	None	Rapid	Likely

	hospitalisation. Evacuation.				

4. Position on Risk Matrix



5. Prevention/Control/Mitigation Measures in Place

Laws and restrictions movement of people enforced by An Garda Síochána, Marshals, Stewarts, VES.

6. Risk Management Approach: Prevention/Control/Mitigation Measures Required

Limited role for Sligo County Council. Prevention and mitigation measures will primarily be the responsibility of An Garda Síochána.

Appendix B1

Sligo Local Authorities Risk Assessment Document contd..

Emergency Response Experience

Sligo Fire Authority helped organise, plan and execute three large Major Emergency Exercises in the passed three years. In doing so we have identified the need for better communications, identification of who is in and near the danger zone, the need to clearly identify who is in command of each responding emergency service and the need to carry out training on a regular basis with other emergency services. Sligo Fire Brigade has also worked with Coast guard in Exercises and Live Incidents

Sligo Local Authorities staff have been involved and volunteered to aid in any Humanitarian needs worldwide. Continued interaction, courses and information gives Sligo Local Authorities better understanding of interaction with other Emergency Organisations, NGOs and Services through the EU.

Appendix B1

Sligo Local Authorities Risk CARDS.

Top 10 Risk Cards Categories as Categorised by Sligo Fire Service

Sligo General Hospital	TeF2
Nursing Homes	TeF3
Water & Waste Water Treatment	TeP1
Industry/Chemical/Explosion	TeC1 & TeE2
Hotels, Apartment Blocks and Underground Car Parks	TeF4 & TeF6
Transport Hubs (Airport and Railway Station/Depot)	TrA2 & TrRa1
Industrial Harbour	TeI1
Large Commercial/Residential	TeF5
Nightclubs	TeF1
Large Educational (Sligo IT)	TeF5

HAZARD INDENTIFICATION – NATURAL HAZARDS

Ref.	Category/ Sub-category	Hazard/Threat	Potential Outcome description	Relative Risk areas of Sligo	Likelihood	Impact	Risk Rating
NM1	Natural - Meteorological	Storm/Gale or meteorological conditions Both coastal and inland areas can be affected by high winds. This can be complicated by heavy rain or snow	Damage to property. Local Flooding Loss of critical infrastructure Displacement and/or fatalities may occur.	All areas.	Unlikely	Serious	Planning and Preparedness

NM2	Natural - Meteorological	Heavy Snow or Severe Cold/Ice	Damage to property. Loss of critical infrastructure Risk of Hypothermia and possible loss of life. Increased potential for Road Traffic Collisions.	All areas and in particular high-lying areas of County.	Unlikely	Serious	Planning and Preparedness
NH1	Natural – Hydrological	Flooding	Damage to property. Displacement of communities Possible loss of life Loss of critical infrastructure. Water supply contamination.	Low-lying and coastal areas of County	Likely	Limited	Planning and Preparedness
NG1	Natural – Geological	Tsunami	Damage to property. Displacement of communities Possible loss of life Loss of critical infrastructure. Water supply contamination. Destruction of forest & woodland, crop damage,	Coastal areas and inland low-lying of County	Extremely Unlikely	Catastrophic	Planning and Preparedness
NO1	Natural - Other	Landslide	Damage to property. Displacement of communities. Loss of critical infrastructure. Water supply contamination. Environmental destruction. Fatalities may occur.	High-lying and low-lying areas of County.	Unlikely	Limited	Planning and Preparedness
NO2	Natural – Other	Forest Fire	Destruction of forest & woodland, crop damage, Contamination of watercourses. Damage to property.	Forestry planted areas and high lands	Unlikely	Limited	Planning and Preparedness

HAZARD INDENTIFICATION – TRANSPORTATION HAZARDS

Ref.	Category/ Sub-category	Hazard/Threat	Potential Outcome description	Relative Risk areas of Sligo	Likelihood	Impact	Risk Rating
TrA1	Transportation – Aviation	Aircraft collision/loss	Multiple fatalities and casualties. Damage to property. Loss of critical infrastructure.	Sligo Airport. Potentially anywhere in County	Very Unlikely	Catastrophic	Planning and Preparedness
TrA2	Transportation – Aviation	Aircraft collision/loss at or near Sligo Airport	Multiple fatalities and casualties. Damage to property. Loss of critical infrastructure.	Sligo Airport. Potentially anywhere in County area	Unlikely	Very Serious	Planning and Preparedness
TrRa1	Transportation – Rail	Rail Crash	Multiple fatalities and casualties. Damage to property. Loss of critical infrastructure.	Rail Network	Unlikely	Serious	Planning and Preparedness
TrRo1	Transportation – Road	Multi-vehicle collision or bus crash	Multiple fatalities and casualties. Closure of road	Road Network	Likely	Very Serious	Planning and Preparedness
TrRo2	Transportation – Road	Hazmat	Multiple fatalities and casualties. Closure of road	Road Network	Likely	Very Serious	Planning and Preparedness
TrW1	Transportation – Marine	Commercial vessel sinking or running aground. Hazards include local and international ferries.	Multiple fatalities and casualties. Contamination of coastal waters.	All coastal areas and harbour.	Likely	Limited	Planning and Preparedness

Ref.	Category/ Sub-category	Hazard/Threat	Potential Outcome description	Relative Risk areas of Sligo	Likelihood	Impact	Risk Rating
TeC1	Technological – Chemical	Accident at site	Multiple fatalities. Multiple casualties. Evacuations of large numbers of people may be required. Damage to property Pollution of air and watercourses.	Industrial Sites	Likely	Serious	Planning and Preparedness
TeE1	Technological – Explosions	Underground (Car park) Explosion Acetylene	Multiple fatalities. Multiple casualties. Evacuations of large numbers of people may be required. Damage to property Pollution of air.	All areas	Unlikely	Catastrophic	Planning and Preparedness
TeE2	Technological – Explosions	Explosion	Multiple fatalities. Multiple casualties. Evacuations of large numbers of people may be required. Damage to property Pollution of air and watercourses.	All areas	Unlikely	Serious	Planning and Preparedness
TeE3	Technological – Explosions	Garages	Multiple fatalities. Multiple casualties. Evacuations of large numbers of people may be required. Damage to property Pollution of air and watercourses.	All areas	Unlikely	Very Serious	Planning and Preparedness
TeF1	Technological – Fire	Disco/ Large Commercial/Residential	Multiple fatalities. Multiple casualties. Evacuations of large numbers of people may be required. Damage	All areas	Unlikely	Serious	Planning and Preparedness

			to property Pollution of watercourses from run-off.				
TeF2	Technological – Fire	Hospital	Multiple fatalities. Multiple casualties. Evacuations of large numbers of people may be required. Damage to property Pollution of watercourses from run-off.	All areas	Likely	Very serious	Planning and Preparedness

HAZARD INDENTIFICATION – TECHNOLOGICAL HAZARDS

HAZARD INDENTIFICATION – TECHNOLOGICAL HAZARDS

Ref.	Category/ Sub-category	Hazard/Threat	Potential Outcome description	Relative Risk areas of Sligo	Likelihood	Impact	Risk Rating
TeF3	Technological – Fire	Nursing Home	Multiple fatalities. Multiple casualties. Evacuations of large numbers of people may be required. Damage to property Pollution of watercourses from run-off.	All areas	Likely	Very serious	Planning and Preparedness
TeF4	Technological – Fire	Hotel	Multiple fatalities. Multiple casualties. Evacuations of large numbers of people may be required. Damage to property Pollution of watercourses from run-off.	All areas	Unlikely	Very serious	Planning and Preparedness
TeF5	Technological – Fire	Theatre/Cinema	Multiple fatalities. Multiple casualties. Evacuations of large numbers of people may be required. Damage to property Pollution of watercourses from run-off.	All areas	Unlikely	Very serious	Planning and Preparedness
TeF6	Technological – Fire	Large Residential	Multiple fatalities. Multiple casualties. Evacuations of large numbers of people may be required. Damage to property Pollution of watercourses from run-off.	All areas	Unlikely	Very serious	Planning and Preparedness
TeF7	Technological – Fire	Caravan Park	Multiple fatalities. Multiple casualties. Evacuations of large numbers of people may be required. Damage to property Pollution of watercourses from run-off.	All areas	Unlikely	Very serious	Planning and Preparedness
TeI1	Technological – Industrial Accidents	Sligo Harbour	Multiple fatalities. Multiple casualties. Evacuations of large	All areas	Unlikely	Very Serious	Planning and Preparedness

			numbers of people. Damage to property Pollution of watercourses from run-off.				

HAZARD INDENTIFICATION – TECHNOLOGICAL HAZARDS contd..

Ref.	Category/ Sub-category	Hazard/Threat	Potential Outcome description	Relative Risk areas of Sligo	Likelihood	Impact	Risk Rating
TeP1	Technological – Water Pollution	Pollution of Water Course or Coastal Waters	Possible fatalities and casualties. Damage to environment and plants and animals.	All areas	Likely	Serious	Planning and Preparedness
TeP2	Technological – Oil Pollution	Pollution of Water Course or Coastal Waters	Possible fatalities and casualties. Damage to environment and plants and animals.	All areas	Likely	Serious	Planning and Preparedness

HAZARD INDENTIFICATION

Ref.	Category/ Sub-category	Hazard/Threat	Potential Outcome description	Relative Risk areas of Sligo	Likelihood	Impact	Risk Rating
CE1	Civil- Pandemic Flu	Outbreak of flu pandemic	Multiple fatalities Multiple casualties. Serious disruption of essential services. Large scale absenteeism by workforce	All areas worldwide	Unlikely	Catastrophic	Mitigation
CMC1	Civil-	Crowd Safety	Single fatality. Limited no. of casualties. Minor damage to property	All areas	Likely	Limited	Planning and Preparedness
CMC2	Civil-	WRC Rally Ireland	Multiple fatalities. Multiple casualties.. Evacuations of large numbers of people may be required. Damage to property	All areas	Likely	Serious	Planning and Preparedness