

## 14. MAJOR ACCIDENTS AND NATURAL DISASTERS

### 14.1 Introduction

This chapter of the Environmental Impact Assessment Report (EIAR) describes the likely significant effects on the environment arising from the vulnerability of the Proposed Development as detailed in Chapter 4 to risks of major accidents and/or natural disasters, as well as the potential of the Proposed Development itself to cause potential major accidents and/or natural disasters. It has been completed in accordance with the guidance set out by the Environmental Protection Agency (EPA) in ‘*Guidelines on Information to be contained in Environmental Impact Assessment Reports*’ (EPA, 2022) and the European Commission in relation to Environmental Impact Assessment of Projects (Directive 2011/92/EU, as amended by 2014/52/EU), namely ‘*Guidance on the preparation of the Environmental Impact Assessment Report*’.

The assessment of the vulnerability of the Proposed Development to major accidents and natural disasters, as well as the risk of the Proposed Development itself causing accidents or disasters is carried out in compliance with the EIA Directive (2014/52/EU) which states the need to assess:

*“the expected significant effects deriving from the vulnerability of the project to risks of major accidents and/or natural disasters which are relevant to the project concerned.”*

The objective of this assessment is to ensure that appropriate precautionary actions are taken for those projects.

*“because of their vulnerability to major accidents and/or natural disasters (such as flooding, sea level rise, or earthquakes), are likely to have significant adverse effects on the environment”.*

Based on the requirements of the EIA Directive, this chapter seeks to determine:

- The relevant major accidents and/or natural disasters, if any, that the Proposed Development could be vulnerable to or could cause;
- The potential for these major accidents and/or natural disasters to result in likely significant adverse environmental effect(s); and
- The measures that are in place, or need to be in place, to prevent or mitigate the likely significant adverse effects of such events on the environment.

#### 14.1.1 Statement of Authority

This section of the EIAR has been prepared by Tom Madden and reviewed by Eoin O Sullivan, all of MKO. Tom is an Environmental Scientist and has over five years working in various Environmental Consultancies throughout Ireland. He holds a BSc (Hons) in Environmental Science from the University of Limerick. Eoin is a Project Director at MKO with over 15 years of experience in the assessment of a wide range of energy and infrastructure related projects and working in the fields of environmental and human health risk assessment, waste management, waste policy and permitting. Eoin has wide experience in the project management of large scale infrastructural projects and brownfield developments which includes all aspects of geo-environmental and geotechnical investigation. Eoin is a Chartered Member of the Chartered Institute of Water and Environmental Management and Chartered Environmentalist with the Society of Environment.

## Assessment Methodology

The following guidance documents have been consulted in the preparation of this section:

- The Framework for Major Emergency Management (2006).  
<https://www.gov.ie/en/department-of-housing-local-government-and-heritage/collections/a-framework-for-major-emergency-management/>
- European Commission. (2017), Environmental Impact Assessment of Projects – Guidance on the preparation of Environmental Impact Assessment Reports;
- Environmental Protection Agency (2022), Guidelines on the Information to be Contained in Environmental Impact Assessment Reports;
- Department of Environment, Heritage and Local Government (2006) - A Framework for Major Emergency Management, Guide to Risk Assessment in Major Emergency Management;
- Department of Environment, Heritage and Local Government (2010) - A Framework for Major Emergency Management, Guide to Risk Assessment in Major Emergency Management – Guidance Document 1;
- Environmental Protection Agency (2014), Guidance on Assessing and Costing Environmental Liabilities;
- Department of Defence (2020), A National Risk Assessment for Ireland;
- Department of the Taoiseach (2024), National Risk Assessment 2024 Overview of Strategic Risks;
- Galway County Council (2021) – Major Emergency Plan;
- Health Service Executive (HSE) (2024) HSE West and North-West Interim Regional Major Emergency Plan for HSE Services in Counties Donegal, Sligo, Leitrim, West Cavan, Galway, Mayo and Roscommon.

Major accidents or natural disasters are hazards which have the potential to affect the Proposed Development and consequently have potential effects on the environment. These include accidents during construction and operation caused by operational failure and/or natural hazards. The assessment of the risk of major accidents and/or disaster considers all factors defined in the EIA Directive that have been considered in this EIAR, i.e., population and human health, biodiversity, land, soil, water, air, climate, material assets, cultural heritage and the landscape.

### 14.2.1 Legislative Context

#### 14.2.1.1 Legislation

An assessment of the following key elements was undertaken in accordance with the EIA Directive (2014/52/EU):

- The vulnerability of the Proposed Development to potential accidents and disasters;
- The Proposed Development potential to cause major accidents or disasters which pose a risk to human health, cultural heritage and/ or the environment.

The information relevant to major accidents and/or disasters to be included in the EIAR is set out in Section 8 of Annex IV of the EIA Directive as follows:

*“(8) A description of the expected significant adverse effects of the project on the environment deriving from the vulnerability of the project to risks of major accidents and/or disasters which are relevant to the project concerned. Relevant information available and obtained through risk assessments pursuant to Union legislation such as Directive 2012/18/EU of the European Parliament and of the Council or Council Directive 2009/71/Euratom or relevant assessments carried out pursuant to national legislation may be used for this purpose provided that the*

*requirements of this Directive are met. Where appropriate, this description should include measures envisaged to prevent or mitigate the significant adverse effects of such events on the environment and details of the preparedness for and proposed response to such emergencies”.*

## 14.2.2 Categorisation of the Baseline Environment

A desk-study has been completed to establish the baseline environment for which the proposed risk assessment is being carried out. This will influence both the likelihood and the impact of a major accident or natural disaster. Local and regional context has been established prior to undertaking the risk assessment to develop an understanding of the vulnerability and resilience of the area to emergency situations.

Further detail on the baseline environment is provided in Section 14.3

## 14.2.3 Impact Assessment Methodology

### 14.2.3.1 Introduction

A residential development is not a recognised source of pollution. It is not subject to Industrial Emissions Directive regulation or any other Environmental Protection Agency (EPA) environmental regulatory consent. Should a major accident or natural disaster occur, the potential sources of pollution onsite during the construction and operational phases are limited and of low environmental risk. Sources of pollution with the potential to cause significant environmental pollution and associated negative effects such as bulk storage of hydrocarbons or chemicals, storage of wastes, management of flammable materials etc. are limited and so there is an inherent low level of environmental risk associated with major accident or natural disaster impacting the Proposed Development and causing environmental damage.

There is limited potential for significant natural disasters to occur at the site. Ireland is a geologically stable country with a mild temperate climate. The potential natural disasters that may occur are therefore limited to flooding, extreme wind events and fire. The risk of flooding is addressed in Chapter 8: Hydrology and Hydrogeology.

Major industrial accidents involving dangerous substances pose a significant threat to humans and the environment; such accidents can give rise to serious injury to people or serious damage to the environment, both on and off the site of the accident. The proposed site is not regulated or connected to or close to any site regulated under the Control of Major Accident Hazards Involving Dangerous Substances Regulations i.e. SEVESO sites and so there are no potential effects from this source. The closest SEVESO site is located approximately 3.7km to the south-east at Galway Harbour Enterprise Park, New Docks, Galway.

This assessment assumes that the Proposed Development will be implemented in accordance with the methodologies, mitigation measures, and monitoring outlined in this EIAR. Current EIA practices already address certain potential accident and disaster scenarios, including pollution incidents affecting ground and watercourses, as well as flooding events. These are comprehensively detailed in the relevant chapters of the EIAR (Chapters 5 to 14).

### 14.2.3.2 Site-Specific Risk Assessment Methodology

A site-specific risk assessment identifies and quantifies risks focusing on unplanned, but possible and plausible events occurring during the construction and operational phase of the Proposed Development. The approach to identifying and quantifying risks associated with the Proposed Development by means of a site-specific risk assessment is derived from the EPA ‘Guidance on

*Assessing and Costing Environmental Liabilities'* document<sup>1</sup>. The following steps were taken as part of the site-specific risk assessment:

- Risk identification
- Risk classification, likelihood and consequence; and
- Risk evaluation

RECEIVED: 16/10/2025

#### 14.2.3.2.1 Risk Identification

Risks have been reviewed through the identification of reasonably foreseeable risks in consultation with relevant contributors to this EIAR (refer to *Statements of Authority* in Chapters 5 to 14 of this EIAR). The identification of risks has focused on non-standard but plausible incidents that could occur at the Proposed Development during construction and operation.

In accordance with the European Commission EIAR Guidance, risks are identified in respect of the projects:

1. *Potential to cause accidents and/or disasters,*
2. *Vulnerability to potential disaster/accident*

#### 14.2.3.2.2 Risk Classification

##### Classification of Likelihood

After identifying the potential risks, the likelihood of occurrence of each risk has been assessed. An analysis of safety procedures and proposed environmental controls was considered when estimating likelihood of identified potential risks occurring. Table 14-1 defines the likelihood ratings that have been applied as defined in the Department of Environment, Heritage and Local Government (2010) *A Framework for Major Emergency Management – A Guide to Risk Assessment in Major Emergency Management*<sup>2</sup>.

The approach adopted has assumed a 'risk likelihood' where one or more aspects of the likelihood description are met.

Table 14-1 Classification of Likelihood (Source: DoEHLG, 2010)

Ranking	Likelihood	Description
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 communities; and / or little opportunity, reason or means to occur; may occur once every 100-500 years.

<sup>1</sup> EPA (2014) *Guidance on assessing and costing environmental liabilities*. Available at [https://www.epa.ie/publications/compliance-enforcement/licenses/reporting/financial-provisions/EPA\\_OEE-Guidance-and-Assessing-WEB.pdf](https://www.epa.ie/publications/compliance-enforcement/licenses/reporting/financial-provisions/EPA_OEE-Guidance-and-Assessing-WEB.pdf)

<sup>2</sup> Department of Environment, Heritage and Local Government (2010) *A Framework for Major Emergency Management – A Guide to Risk Assessment in Major Emergency Management*. Available at: <https://www.gov.ie/pdf/?file=https://assets.gov.ie/230812/cc183004-f056-43c3-a7a4-1243373330c7.pdf#page=null>

Ranking	Likelihood	Description
3	Unlikely	May occur at some time; and /or few, infrequent, random recorded incidents or little anecdotal evidence; some incidents in associated or comparable organisation's 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.

RECEIVED: 16/10/2025

### Classification of Consequence

The consequence rating assigned to each risk has assumed that all proposed mitigation measures and/or safety procedures have failed to prevent the major accident and/or disaster. Furthermore, the *HSE West and North West Regional Major Emergency 2024<sup>3</sup>*, if implemented as intended, is designed to reduce the consequences of any major accident or disaster. The consequence of the impact if the event occurs has been assigned as described in Table 14-2.

The consequence of a risk to/from the Proposed Development has been determined where one or more aspects of the consequence description are met, i.e. risks that have no consequence have been excluded from the assessment.

Table 14-2 Classification of Impact (Source: DoEHLG, 2010)<sup>4</sup>

Ranking	Likelihood	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	
		Infrastructure	No contamination, localised effects <€0.5M
2	Limited	Social	Minor localised disruption to community services or infrastructure (<6 hours).
		Life, Health, Welfare	Single fatality; limited number of people affected; a few serious injuries with hospitalisation and medical treatment required.
		Environment	
		Infrastructure	

<sup>3</sup> HSE West & North West Interim Regional Major Emergency Plan for HSE Services in counties Donegal, Sligo, Leitrim, West Cavan, Galway, Mayo and Roscommon [online] Available at <https://www.hse.ie/eng/services/list/3/emergencymanagement/area-mep/hse-west-north-west-regional-major-emergency-plan-donegal-sligo-leitrim-west-cavan-galway-mayo-roscommon-pdf>

<sup>4</sup> Department of Environment, Heritage and Local Government (2010) A Framework for Major Emergency Management – A Guide to Risk Assessment in Major Emergency Management. Available at: [file:///C:/Users/eosullivan/Downloads/230812\\_cc183004-f056-43c3-a7a4-1243373330c7%20\(1\).pdf](file:///C:/Users/eosullivan/Downloads/230812_cc183004-f056-43c3-a7a4-1243373330c7%20(1).pdf)

Ranking	Likelihood	Impact	Description
		Social	<p>Localised displacement of a small number of people for 6-24 hours. Personal support satisfied through local arrangements.</p> <p>Simple contamination, localised effects of short duration</p> <p>€0.5-3M</p> <p>Normal community functioning with some inconvenience.</p>
3	Serious	Life, Health, Welfare Environment Infrastructure Social	<p>Significant number of people in affected area impacted with multiple fatalities (&lt;5), multiple serious or extensive injuries (20), significant hospitalisation.</p> <p>Large number of people displaced for 6-24 hours or possibly beyond; up to 500 evacuated.</p> <p>External resources required for personal support.</p> <p>Simple contamination, widespread effects or extended duration</p> <p>€3-10M</p> <p>Community only partially functioning, some services available.</p>
4	Very Serious	Life, Health, Welfare Environment Infrastructure Social	<p>5 to 50 fatalities, up to 100 serious injuries, up to 2000 evacuated</p> <p>Heavy contamination, localised effects or extended duration</p> <p>€10-25M</p> <p>Community functioning poorly, minimal services available</p>
5	Catastrophic	Life, Health, Welfare Environment Infrastructure Social	<p>Large numbers of people impacted with significant numbers of fatalities (&gt;50), injuries in the hundreds, more than 2000 evacuated.</p> <p>Very heavy contamination, widespread effects of extended duration.</p> <p>&gt;€25M</p> <p>Serious damage to infrastructure causing significant disruption to, or loss of, key services</p>

RECEIVED: 16/10/2025

Ranking	Likelihood	Impact	Description
			for prolonged period. Community unable to function without significant support.

### Risk Evaluation

Once classified, the likelihood and consequence ratings have been multiplied to establish a 'risk score' to support the evaluation of risks by means of a risk matrix.

The risk matrix sourced from the DoEHLG *A Framework for Major Emergency Management – A Guide to Risk Assessment in Major Emergency Management* and as outlined in Table 14-3 indicates the critical nature of each risk. This risk matrix has therefore been applied to evaluate each of the risks associated with the Proposed Development. The risk matrix is colour coded to provide a broad indication of the critical nature of each risk:

- The red zone represents 'high risk scenarios';
- The amber zone represents 'medium risk scenarios'; and
- The green zone represents 'low risk scenarios'.

Table 14-3 Classification of Impact (Source: DoEHLG, 2010)

		Consequence Rating				
		1.Minor	2.Limited	3. Serious	4.Very Serious	5.Catastrophic
Likelihood Rating	5.Very Likely	Green	Amber	Red	Red	Red
	4. Likely	Green	Amber	Amber	Red	Red
	3. Unlikely	Green	Green	Amber	Amber	Red
	2. Very Unlikely	Green	Green	Green	Amber	Amber
	1. Extremely Unlikely	Green	Green	Green	Green	Green

## 14.3 Baseline Conditions

The Major Emergency Plan prepared by Galway County Council (2021) outlines the following potential major emergency scenarios in County Galway:

1. Hazardous Sites Emergencies:
  - The European Communities Control of Major Accident Hazards Involving Dangerous Substance Regulations, 2000, applies to sites where certain quantities of specified dangerous substances are present. These sites (SEVESO Sites) are classified as upper tier and lower tier.
  - There are **two** SEVESO III / COMAH sites in Galway County Council's functional area (one site is upper tier and one site is lower tier). There is also **one** SEVESO III / COMAH upper tier site in Galway City Council's functional area located in the Galway Harbour Enterprise Park, Galway Docks. These are listed in the table below:

Table 14-4 SEVESO/COMAH Sites in County Galway

Name	Address	Classification	Activity
Colas Bitumen Emulsion (West)	Oranmore, Co. Galway	Upper Tier	Chemical Plant
Circle K	Galway Harbour	Upper Tier	Fuel Terminal
Tynagh Energy	Tynagh, Co. Galway	Lower Tier	Power Station

As stated above, the closest SEVESO site to the Proposed Development is the Circle K facility at Galway Harbour which is located approximately 3.7km to the south-east. This facility is an Upper Tier Establishment and is located in the functional area of Galway City Council.

2. Transport Emergencies:

- > M6, M17 and M18 Motorways,
- > National Primary Routes N6, N17, N59 & N18,
- > Iarnród Éireann: Galway – Athlone, Galway – Ennis Rail Lines,
- > Airports, including Island Airports,
- > Galway Harbour,
- > Rossaveel Harbour
- > Offshore Inhabited Islands and Ferries

3. Natural Emergencies:

- > Flooding,
- > Severe Weather and Wind Events,
- > Landslides,
- > Tsunami.

4. Technological Emergencies

- > COMAH Sites,
- > Large Fires/Leaks,
- > Hazardous Materials Incidents,
- > Environmental Pollution.

5. Civil Emergencies

- > Terrorism,
- > Large Crowd Events,
- > Loss of Critical Infrastructure,
- > Pollution of Water Supplies,
- > Communicable Diseases/Public Health Emergencies

6. Utility Company Emergencies:

- > Bord Gáis,
- > ESB,

The risks from which are most relevant to this assessment are described below:

## Transport Emergencies

The Proposed Development will utilise the existing road network during the construction phase. Construction related traffic will originate from the delivery of materials to site and transport of employees to, from and throughout the site. The localised traffic disruptions as a result of other proposed works will be mitigated through the use of industry standard traffic management measures which are outlined in detail in the Traffic and Transportation Assessment which has been prepared by Tobin's Consulting Engineers (Appendix 15-1).

## Natural Emergencies

The Proposed Development is located approximately 1km from the Atlantic Ocean and therefore is likely to be impacted by low pressure systems or extreme wind speeds. Potential severe weather effects are assessed below. As is standard practice nationwide, construction works will be paused in the event of a Status Red weather warning issued by Met Eireann. This mitigates significantly the potential for effects associated with severe weather events during these phases.

As detailed in the Stage 2 Flood Risk Assessment which has been prepared by Tobin's Consulting Engineers (Appendix 14-1), no recurring flood incidents or historical flood events were recorded within the site or within the vicinity of the site.

The Proposed Development site is located approximately 1km inland from the sea and therefore it is estimated that the site is not at risk from coastal flooding. The topographic survey of the Proposed Development site shows minimum ground levels of 25m above Ordnance Datum (OD), which provides a freeboard of over 20m between coastal 0.1% AEP Event extents and the Proposed Development.

The closest past flood events to the subject site are located approximately 1.75km southeast of the Proposed Development site and the flood labelled (ID: 13235) occurred in December 2015. This event is located on the coast and is as a result of coastal flooding. There are multiple other flood events in the vicinity of the above-mentioned flood event, all as a result of coastal flooding. There is no hydraulic link between the Proposed Development site and the past flood event.

The site is within the study area of the Galway City Strategic Flood Risk Assessment (2023-2029). The Proposed Development site is located in Flood Zone C.

The Preliminary Flood Risk Assessment (PFRA) mapping indicates that there is one area of the Proposed Development site that may be at risk of pluvial flooding. The area of pluvial flooding is in the centre of the site. Surface water arising on the Proposed Development site will be managed by a dedicated stormwater drainage system in accordance with Sustainable Drainage Systems (SuDS) principles, limiting discharge from the site to greenfield runoff rates.

The landscaping and topography of the developed site will provide safe exceedance flow paths and prevent surface water ponding to minimise residual risks associated with an extreme flood event or a scenario where the stormwater drainage system becomes blocked. Therefore, it is estimated that risk of pluvial flooding associated with the Proposed Development is low. The Stage 2 Flood Risk Assessment prepared by Tobin's Consulting Engineers concluded that based on the results of their assessment, it is estimated that the risk of flooding at the Proposed Development is not significant and that the Proposed Development will not increase the risk of flooding elsewhere.

## Utility Company Emergencies

The Proposed Development will be constructed on a site that is comprised of areas of low input agricultural grassland and areas of infill/brownfield. Local utilities and services are currently in place in the vicinity of the site. Excavations and all other construction works will be undertaken by the developer and all services and utilities will be identified prior to construction works being carried out.

RECEIVED: 16/10/2025

## 14.3.2 Additional Risks

In addition, risks identified in the EIAR which are relevant to the Proposed Development are detailed below:

### 14.3.2.1 Contamination

The Proposed Development has the potential to cause contamination and pollution of groundwater and surface water from potential release of hydrocarbons, earthworks and excavations on site. Proven and effective methods to mitigate against these potential effects have been outlined in Chapter 7 Land, Soils & Geology and Chapter 8 Water of this EIAR which will break any potential pathways between source and receptor. Indirect impacts associated with major accidents and / or natural disasters on contamination are considered in this chapter.

## 14.4 Risk Assessment

This section outlines the possible risks associated with the Proposed Development for the construction and operational phases.

These risks have been assessed in accordance with the relevant classification as outlined in Table 14-1 and 14-2.

As outlined in Section 14.2.3.2.2, the consequence rating assigned to each potential risk assumes that all proposed mitigation measures and safety procedures have failed to prevent the major accident and/or disaster i.e. pre-mitigation.

### 14.4.1 Likely Significant Effects

#### 14.4.1.1 Do-Nothing Scenario

If the Proposed Development were not to proceed, there would be no change to the existing environment. The potential for additional investment and employment in the area in relation to the construction and operation of the proposed site would be lost.

#### 14.4.1.2 Identification of Effects During Construction

A risk register has been developed which contains all potentially relevant risks identified during the construction phase of the Proposed Development. Seven risks specific to the construction phase of the Proposed Development have been identified and are presented in Table 14-5.

*Table 14-5 Risk Register - Construction Phase*

Risk ID	Potential Risk	Possible Cause
<b>Potential vulnerability to disaster risks</b>		
A	<b>Critical Infrastructure Emergencies</b>  Risk of delivery of materials and equipment to site.	Traffic accident during construction (materials or equipment delivery) or extreme weather periods of heavy rainfall, taking into account climate change and extreme winds

B	<b>Severe Weather</b>  Risk to activity on site	Extreme weather- periods of heavy rainfall, taking into account climate change and extreme winds
C	<b>Flooding</b>  Risk of fluvial flooding in areas surrounding the site impacting the construction phase and leading to environmental emissions	Extreme weather- periods of heavy rainfall, taking into account climate change and extreme winds
<b>Potential to cause accidents and / or disasters.</b>		
D	<b>Utility emergencies</b>  Risk of construction activity at the Proposed Development site.	Construction activity at the Proposed Development site impacting on local services and utilities.
E	<b>Traffic Incident</b>  Collisions onsite and offsite with vehicles involved in construction of the Proposed Development.	Driver negligence or failure of vehicular operations on site roads.  Traffic Management not implemented
F	<b>Contamination</b>  Discharge or leakage of fuel, chemical solvents, untreated water into watercourse or percolated to groundwater.	Accidental fuel spillage during delivery to site.  Failure of fuel storage tank or tanks in plant and machinery and vehicles leading to uncontrolled emissions.  Drainage and seepage water resulting from accident associated with water storage or treatment.  Stockpiled excavated material becoming unstable and providing a point source of exposed sediment.  Excavation works during the construction phase of the Proposed Development which may result in entrainment of sediment from the excavations.
G	<b>Fire / Gas Explosion</b>	Equipment or infrastructure failure;  Electrical problems; and  Employee negligence.

RECEIVED: 16/10/2025

### 14.4.1.3 Identification of Effect During Operation

Five risks specific to the operation of the Proposed Development have been identified and are presented in Table 14-6.

Table 14-6 Risk Register – Operational Phase

Risk ID	Potential Risk	Possible Cause
<b>Potential vulnerability to disaster risks</b>		
H	<b>Severe Weather</b>  Risk to operational activity on site, damage to processing plant, machinery and other infrastructure.	Extreme weather- periods of heavy rainfall, taking into account climate change and extreme winds.
I	<b>Contamination</b>  Discharge or spillage of fuel, chemical solvents, sewage or wastewater into watercourse or percolated to groundwater.	A vehicular incident on the public road involving fuel, wastewater or sewage transportation in the operational phase.  Spill or leak of oil during operational phase.
<b>Potential to cause accidents and / or disasters</b>		
J	<b>Fire / Gas Explosion</b>	Equipment or infrastructure failure;  Electrical problems; and  Employee/resident negligence.
K	<b>Traffic Incident</b>  Collisions onsite and offsite with vehicles involved in operation of Proposed Development.	Driver negligence or failure of vehicular operations on site roads.  Traffic Management not implemented

The risk register is based upon possible risks associated the Proposed Development. As outlined in Section 14.2, the consequence rating assigned to each potential risk assumes that all proposed mitigation measures and safety procedures have failed to prevent the major accident and/or disaster.

RECEIVED: 16/10/2025

### 14.4.1.4 Assessment of Effect – Summary

This assessment is focused on an understanding that the Proposed Development will be operated in line with the methodologies and measures prescribed in this EIAR. Therefore, the overall vulnerability of the Proposed Development to risks of major accidents and natural disasters is considered low.

Risk ID	Potential Risk	Possible Cause	Environmental Effect	Likelihood Rating	Basis of Likelihood	Consequence Rating	Basis of Consequence	Risk Score (Consequence x Likelihood)
<b>Construction Phase</b>								
A	<b>Critical Infrastructure Emergencies</b>	Accident during the delivery of the materials or damage to infrastructure caused by severe weather, natural disaster, etc.	Illness or loss of life;	2	<p>The risk of severe weather with potential to damage plant is unlikely when considering the weather conditions recorded over the last 30 years within the area.</p> <p>The risk of traffic accident during equipment delivery severe weather conditions impacting the M6, M17 and M18 is unlikely when considering the assessment in Chapter 10 (weather conditions recorded over the last 30 years within the area).</p>	1	The risk of a traffic accident due to severe weather conditions during the construction phase will result in a minor consequence in that ‘small number of people would be affected’ should a severe weather occur, with ‘no fatalities and a small number of minor injuries with first aid treatment’.	2
B	<b>Severe Weather</b>	Extreme weather-periods of heavy rainfall, taking into	Illness or loss of life;	3	The risk of severe weather is unlikely when considering the weather conditions recorded over the last 30 years within the area.	1	The risk of severe weather conditions during the construction phase will result in a minor consequence in that a ‘small number of people	3

RECEIVED 16/10/2025

Risk ID	Potential Risk	Possible Cause	Environmental Effect	Likelihood Rating	Basis of Likelihood	Consequence Rating	Basis of Consequence	Risk Score (Consequence x Likelihood)
		account climate change and strong winds.			Construction works will take account of weather forecasts and predicted rainfall in particular and construction/operation will be paused if required.		would be affected' should a severe weather occur, with 'no fatalities and a small number of minor injuries with first aid treatment.	
C	<b>Flooding</b>	Extreme weather-periods of heavy rainfall, taking into account climate change and strong winds.	Illness or loss of life;	2	The risk of flooding is considered very unlikely when taking into account the baseline assessment in Chapter 8 of the EIAR and due to no recurring or historic flood incidents being recorded within the site.	1	The risk of flooding during the construction phase will result in a minor consequence in that a 'small number of people would be affected' should a severe weather occur, with 'no fatalities and a small number of minor injuries with first aid treatment.	2
D	<b>Utility emergencies</b>	Excavation activity along road network during works impacting on local services and utilities.	Illness or loss of life; Disruption to services	2	The Proposed Development has been designed to take into consideration of services and utilities within the site and adjacent road network.	1	The risk of impact on utilities and services during the construction phase will result in a minor consequence in that 'small number of people would be affected, with 'no fatalities and a small number of minor injuries with first aid treatment.	2

RECEIVED 16/10/2025

Risk ID	Potential Risk	Possible Cause	Environmental Effect	Likelihood Rating	Basis of Likelihood	Consequence Rating	Basis of Consequence	Risk Score (Consequence x Likelihood)
E	<b>Traffic Incident</b>	<p>Driver negligence or failure of vehicular operations on site roads and public road network</p> <p>Traffic Management not implemented.</p>	Injury or loss of life.	3	<p>A limited number of vehicles will be permitted on site as part of the construction phase.</p> <p>Site access traffic management plan will be in place.</p> <p>As such, it can be determined that there is some 'opportunity, reason or means' for a vehicle collision to occur on site, 'at some time.' An unlikely risk is therefore predicted.</p>	1	A minor consequence is predicted. Having regard to on-site speed limits and vehicular movements, a 'small number of people would be affected' should a vehicular collision occur, with 'no fatalities and small number of minor injuries with first aid treatment.	3
F	<b>Contamination</b>	<p>Fuel spillage during delivery to site.</p> <p>Failure of fuel storage tank or tanks in plant and machinery and vehicles.</p>	Contamination of local drinking water supplies, surface waters and groundwater aquifers.	2	<p>As outlined in Chapter 4, minimal refuelling or maintenance of construction vehicles or plant will take place on site with refuelling activities restricted to controlled fuelling stations, operated by competent personnel.</p> <p>A suite of safety measures for mobile fuel storage and refuelling operations will be implemented, as provided in the CEMP</p>	2	The risk of a fuel spillage or impact on surround drainage during the construction will result in a limited consequence in that there would be 'a limited number of people affected' with 'localised effects of short duration' through the use of banded containment areas and proposed drainage mitigation measures during construction.	4

RECEIVED 16/10/2025

Risk ID	Potential Risk	Possible Cause	Environmental Effect	Likelihood Rating	Basis of Likelihood	Consequence Rating	Basis of Consequence	Risk Score (Consequence x Likelihood)
					(Appendix 4-1). Careful handling of fuels, lubricants, and hydraulic fluids will be enforced to prevent spillage and unauthorized access, with spill containment measures and controlled refuelling using drip trays at all times.		The potential residual environmental effects are described in detail in Chapter 8 which concludes that there will be no significant environmental effects.	
G	<b>Fire / Gas Explosion</b>	<p>Equipment or infrastructure failure;</p> <p>Fuel spillage/ storage</p> <p>Electrical problems; and</p> <p>Employee negligence causing an accident.</p>	<p>Illness or loss of life;</p> <p>Damage to, or depletion of habitats and species; and</p> <p>Impacts on ambient air quality.</p>	2	<p>As outlined in Chapter 4 and the CEMP (Appendix 4-1), fuels or oils will be stored at the designated refuelling area, therefore fuel is not considered to be a significant fire risk.</p> <p>In accordance with Chapter 19 of the Safety, Health and Welfare at Work Act 2005 (the 2005 Act), the development shall be subject to a fire safety risk assessment which would assist in the identification of any major risks of fire on site, and mitigation of the same during operation.</p>	2	<p>Should a fire/explosion occur at the site, a limited consequence in that there would be ‘a limited number of people affected’ with ‘localised effects of short duration’ on people and environmental receptors due to the nature of the project and the lack of infrastructure or fuel storage during operation that would result in any such incident.</p> <p>There will be ‘normal community functioning’ in the area with ‘some inconvenience’ The ‘generic command, control &amp; co-ordination systems’ as well as</p>	4

RECEIVED 16/10/2025

Risk ID	Potential Risk	Possible Cause	Environmental Effect	Likelihood Rating	Basis of Likelihood	Consequence Rating	Basis of Consequence	Risk Score (Consequence x Likelihood)
							the 'common elements of response' detailed in the Galway County Council Major Emergency Plan will work to reduce the consequence (both on people and the environment) of potential fire/explosions at the site.	
<b>Operation and Maintenance Phase</b>								
H	<b>Severe Weather</b>	Extreme weather-periods of heavy rainfall, taking into account climate change and strong winds.	Injury or loss of life	3	The risk of severe weather with potential to damage infrastructure is unlikely when considering weather conditions recorded over the last 30 years within the area.	1	The risk of severe weather conditions during the operational phase will result in a minor consequence in that a 'small number of people would be affected' should severe weather occur, with 'no fatalities and a small number of minor injuries with first aid treatment'.	3
I	<b>Contamination</b>	A vehicular incident on the public road or within the site involving fuel,	Damage to, or depletion of aquatic habitats and species  Contamination of local drinking water	2	As outlined in Chapter 4, fuel will not be stored on-site during the operational phase, therefore fuel is not considered to be a contamination risk in the operational phase.	1	The risk of a fuel spillage or impact on surround drainage during the operational stage will result in a limited consequence in that there would be 'a limited number of	2

RECEIVED 16/10/2025

Risk ID	Potential Risk	Possible Cause	Environmental Effect	Likelihood Rating	Basis of Likelihood	Consequence Rating	Basis of Consequence	Risk Score (Consequence x Likelihood)
		chemicals or untreated water, in the operational phase.	supplies and groundwater aquifers.				people affected' with 'localised effects of short duration' through the use of banded containment areas during operation. The potential residual environmental effects are described in detail in Chapter 8 which concludes that there will be no significant environmental effects.	
J	<b>Fire / Gas Explosion</b>	Equipment or infrastructure failure;  Fuel spillage/storage  Electrical problems; and  Employee negligence	Illness or loss of life;  Damage to, or depletion of habitats and species; and  Impacts on ambient air quality.	2	Considered unlikely due to fire safety etc.  Fuel will not be stored on-site, therefore fuel is not considered to be a significant fire risk.	2	Should a fire/explosion occur at the site, a limited consequence in that there would be 'a limited number of people affected' with 'localised effects of short duration' on people and environmental receptors due to the nature of the project and the lack of infrastructure or fuel storage during operation that would result in any such incident.  There will be 'normal community functioning' in the area with 'some inconvenience' The 'generic command, control & co-	4

RECEIVED 16/10/2025

Risk ID	Potential Risk	Possible Cause	Environmental Effect	Likelihood Rating	Basis of Likelihood	Consequence Rating	Basis of Consequence	Risk Score (Consequence x Likelihood)
							ordination systems' as well as the 'common elements of response' detailed in the Galway County Council Major Emergency Plan will work to reduce the consequence (both on people and the environment) of potential fire/explosions at the site.	
K	<b>Traffic Incident</b>	Driver negligence or failure of vehicular operations on public road network.	Injury or loss of life.	3	Personal vehicles will be on site as well as maintenance vehicles.  As such, it can be determined that there is some 'opportunity, reason or means' for a vehicle collision to occur on site, 'at some time.' An unlikely risk is therefore predicted.	1	A minor consequence is predicted. Having regard to on-site speed limits and vehicular movements, a 'small number of people would be affected' should a vehicular collision occur, with 'no fatalities and small number of minor injuries with first aid treatment.'	3

The risk assessment for each of the potential risks identified are consolidated in Table 14-8 which provides their ‘risk score.’ A corresponding risk matrix is provided in Table 14-9, which is colour coded in order to provide an indication of the critical nature of each risk. As outlined in Section 14.4.1.1.2, the red zone represents ‘high risk’ scenarios’, the amber zone represents ‘medium risk scenarios’ and the green zone represents ‘low risk scenarios’.

Table 14-7 Risk Scores

Risk ID	Potential Risk	Likelihood Rating	Consequence Rating	Risk Score
<b>Construction Phase</b>				
A	Critical Infrastructure Emergencies	2	1	2
B	Severe Weather	3	1	3
C	Flooding	2	1	2
D	Utility company emergencies	2	1	2
E	Traffic Incident	3	1	3
F	Contamination	2	2	4
G	Fire / Gas Explosion	2	2	4
<b>Operational Phase</b>				
H	Severe Weather	3	1	3
I	Contamination	2	1	2
J	Fire / Gas Explosion	2	2	4
K	Traffic Incident	3	1	3

Table 14-8 Risk Matrix

		Consequence Rating				
		1.Minor	2.Limited	3. Serious	4.Very Serious	5.Catastrophic
Likelihood Rating	5. Very Likely					
	4. Likely					
	3. Unlikely	B, E, H, K				
	2. Very Unlikely	A, C, D, I	F, G, J			

1. Extremely Unlikely						
-----------------------	--	--	--	--	--	--

RECEIVED: 16/10/2025

Table 14-9 presents the potential risks identified during the construction phase and operational phase of the Proposed Development all of which can be classified as ‘low risk scenarios.’

The scenario with the highest risk score in terms of a major accident and/or natural disaster during the construction phase for the Proposed Development is identified below.

#### 14.4.1.4.1 Contamination During Construction Phase

There is a potential risk of contamination from site activities during the construction phase as a result of potential release of hydrocarbons. The risk of contamination was given a risk score of 4 on a very precautionary basis. However, as outlined in Chapter 4 Description of the Proposed Development, Chapter 7 Land, Soils & Geology and Chapter 8 Water, measures will be put in place to reduce the risk of accidental spillage and contamination of pollution risk to groundwater, surface water and associated ecosystems, and to terrestrial ecology.

The risk of contamination is ‘very unlikely’ to occur and will have ‘limited’ consequences should it do so, representing a ‘low-risk scenario’ during the construction phase.

The conclusions in the relevant chapters of the EIAR conclude that there will be no significant residual effects associated with this potential impact.

#### 14.4.1.4.2 Fires/Explosion During Construction and Operational Phases

There is a potential risk of fire/explosion at the Proposed Development site. However, as outlined in Section 14.2, the scope of this assessment has been based on the understanding that the Proposed Development will be designed, built and operated in line with current best practice. Further, in accordance with Chapter 19 of the Safety, Health and Welfare at Work Acts 2005 to 2014, the Proposed Development shall be subject to a fire safety risk assessment which will assist in the identification of any major risks of fire on site.

Therefore, the risk of fire/explosion occurring at the Proposed Development resulting in a major accident and/or disaster was given a risk score of 4. This indicates a scenario that is ‘very unlikely’ to occur and having ‘limited’ consequences should it do so, representing a ‘low-risk scenario’ during the construction, operational and decommissioning phases.

### 14.4.2 Mitigation Measures

As outlined in Section 14.4.1.4, the scenario with the highest risk score in terms of the occurrence of major accident and/or disaster during construction was identified as ‘Contamination’ of the Proposed Development site and risk of ‘Fire/Explosion’ during construction and operation.

The Proposed Development will be designed and built in line with the best practice measures set out in this EIAR and, as such, mitigation against the risk of major accidents and/or disasters is embedded through the design.

A CEMP has been prepared for the Proposed Development and is included in Appendix 4-1 of this EIAR. The CEMP sets out the Emergency Response Procedure to be adopted in the event of an emergency including contamination, health and safety and environmental protection. The CEMP provides details on all mitigation and monitoring measures to be actioned prior to construction, during the construction and operational and maintenance phases. The CEMP will be subject to ongoing review through regular environmental auditing and site inspections. This will confirm the efficacy and

implementation of all mitigation measures and commitments identified in the application documentation.

The CEMP includes an Emergency Response Plan (ERP). It provides details of procedures to be adopted in the event of an emergency relating to health & safety or environmental protection. The Site ERP includes details on the response required and the responsibilities of all personnel in the event of an emergency.

### 14.4.3 Residual Effects

The risk of a major accident and/or disaster during the construction of the Proposed Development is considered 'low' in accordance with the '*Guide to Risk Assessment in Major Emergency Management*' (DoEHLG, 2010).

It is considered that when the above mitigation is implemented, and all mitigation detailed in the EIAR is implemented, there will not be significant residual effect(s) associated with the construction phase and operation phase of the Proposed Development.

### 14.4.4 Monitoring

#### 14.4.4.1 Monitoring During Construction

A detailed CEMP will be prepared prior to the commencement of any works. The CEMP will be a live document maintained by the contractor that will work to ensure that potential risks of major accident and/or disaster are identified, avoided and mitigated, as necessary. Refer to Appendix 4-1 for an outline CEMP that sets out the minimum standards to be employed by the contractor.

#### 14.4.4.2 Monitoring During Operation

The operator of the Proposed Development will continue to assess the risk of major accidents and/or disasters on site on an on-going basis during operation.

The maintenance programme, record of reported incidents, as well as general site activities will be monitored on an on-going basis to ensure risk of major accidents does not increase over time.

### 14.4.5 Cumulative Impact Assessment

All elements of the Proposed Development were assessed in order to identify any cumulative effects.

A modern residential development including all of its various components is not a recognised source of pollution. It is not subject to Industrial Emissions Directive regulation or any other Environmental Protection Agency environmental regulatory consent. Should a major accident or natural disaster occur, the potential sources of pollution onsite during the construction and operational phases are limited and of low environmental risk. Sources of pollution with the potential to cause significant environmental pollution and associated negative effects such as bulk storage of hydrocarbons or chemicals, storage of wastes, management of flammable materials etc. are limited and so there is an inherent low level of environmental risk associated with major accident or natural disaster impacting the Proposed Development and causing environmental damage.

There is low potential for significant natural disasters to occur at the Proposed Development site. Ireland is a geologically stable country with a mild temperate climate. The potential natural disasters that may occur are therefore limited and these have been assessed in the context of the whole project, cumulatively in this chapter and in the wider EIAR.

Major industrial accidents involving dangerous substances pose a significant threat to humans and the environment. Such accidents can give rise to serious injury to people or serious damage to the environment, both on and off the site of the accident. The Proposed Development site is not regulated or connected to or close to any site regulated under the Control of Major Accident Hazards Involving Dangerous Substances Regulations i.e. SEVESO sites and so there are no potential effects from this source. There is no real likelihood of significant environmental effects cumulatively associated with major accidents.

The Proposed Development has low potential to cause natural disasters or major accidents. The site is relatively flat and is not a peatland site and so there is low/no potential for peat slides or landslides. Any risks associated with flooding, impacts on infrastructure, accidents etc are addressed in the Sections above. There is no real likelihood of significant environmental effects cumulatively associated with the Proposed Developments potential to cause accidents or natural disasters.