

15. Major Accidents and Natural Disasters

15.1 Introduction

This section 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.

This assessment 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) (hereafter referred to as the EPA Guidelines), 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*’ (2017) and the ‘*Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment*’ (DHPLG, 2018).

Major accidents and natural disasters are events that could affect the Proposed Development and, consequently, have the potential to result in adverse environmental effects. Such events may occur during either the construction or operational phases and may arise from operational failures, external hazards, or natural phenomena. In accordance with the EIA Directive, the assessment considers the potential implications for population and human health, biodiversity, land and soil, water, air, climate, material assets, cultural heritage and landscape. The assessment is based on a review of the relevant legislative and policy context, an appraisal of the baseline environment, and an evaluation of both the vulnerability of the Proposed Development to major accidents and natural disasters and its potential to contribute to such events.

The assessment is carried out in compliance with the Environmental Impact Assessment (EIA) Directive (2014/52/EU) as amended, Article 3(2), which states the need to assess:

‘the expected effects deriving from the vulnerability of the project to risks of major accidents and/or disasters that are relevant to the project concerned.’

In addition, Annex IV of the EIA Directive states that the EIAR shall contain:

“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 natural disasters which are relevant to the project concerned.”

The objective of this assessment is to ensure that appropriate precautionary actions are taken for the Proposed Development;

“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.

The assessment of the risk of major accidents and/or natural disaster is considered in relation to the information required to be provided in this EIAR i.e., Chapter 5: Population and Human Health, Chapter 6: Biodiversity, Chapter 7: Land, Soil and Geology, Chapter 8: Hydrology and Hydrogeology,

Chapter 9: Air Quality, Chapter 10: Climate, Chapter 12: Cultural Heritage, Chapter 13: Landscape and Visual, and Chapter 14: Material Assets.

15.1.1 Statement of Authority

This section of the EIAR has been prepared by Morgan Valvik and Feargal Lennon, and reviewed by Karen Mulryan, all of MKO.

Morgan Valvik is a Project Environmental Scientist at MKO, having joined the company in September 2023. Morgan holds an MSc in Environmental Science from Trinity College Dublin. Prior to joining MKO, she worked as a Graduate Environmental Scientist for AKRF Inc. where she conducted site assessments and remedial oversight related to brownfield sites and landfills in the United States. Morgan's key strengths and areas of expertise are in report writing and EIAR management and coordination. Since joining MKO, Morgan has been involved in the preparation of Environmental Impact Assessment Reports, Construction and Environmental Management Plans, and other environmental reports for a wide range of projects. Morgan is a graduate member of the Chartered Institution of Water and Environmental Management.

Feargal Lennon joined MKO in 2023. He holds an MSc in Environmental Resource Management from University College Dublin. Feargal has been involved in a range of EIAR projects including quarries, greenways and industrial developments. Feargal is a member of the Institute of Environmental Management and Assessment (IEMA).

Karen is a Senior Environmental Scientist with MKO with over 10 years' experience in the consultancy sector. Karen holds a BA International in Archaeology from NUI Galway and a MSc in Archaeology from the University of Edinburgh. Karen's professional consultancy experience comprises project management, environmental impact assessment reporting and peer reviewing, site selection, feasibility assessment, client liaison and stakeholder engagement. Karen's project management and EIA coordination experience includes large scale renewable energy developments, specifically wind and solar, grid infrastructure, large scale flood relief schemes and residential developments. Karen holds memberships with the Chartered Institute for Archaeologists (ACIfA) and the Institute of Archaeologists of Ireland (IAI).

15.2 Scoping and Consultation

The following sections provide a summary of scoping and consultation undertaken for the Proposed Development that is relevant to this chapter. Refer to Chapter 2 Section 2.5 of this EIAR for full details of the scoping and consultation exercise undertaken for the Proposed Development.

15.2.1 Public Consultation

Community engagement and public consultation was carried out for the Proposed Development. During the public consultations many members of the local community shared their support for the redevelopment of an important tourist attraction and public recreation facility for the Hodson Bay area. Some community members expressed their concerns regarding potential alterations to the Athlone Golf Club golf course layout to accommodate active travel measures and the potential increase in traffic to the area. Refer to (Appendix 2-3 Community Survey – 1st Public Consultation Feedback Report and Appendix 2-4 Community Survey – 2nd Public Consultation Feedback Report for further details.

15.2.2 Scoping

Health Service Executive

On 11th August 2025, the Health Service Executive (HSE) responded to a scoping request by providing project-specific recommendations and guidance for the production of the EIAR. In relation to population and human health, HSE highlighted that the applicant should ensure early, meaningful public

consultation, consider alternatives, identify sensitive receptors, and assess both positive and negative health effects using approach which aligns with EPA guidance.

As discussed in Section 15.2.1 above, community engagement and public consultation was carried out during the pre-planning phase (as described in Appendix 2-3 and Appendix 2-4). The consideration of alternatives has also been considered as set out in Chapter 3 Consideration of Reasonable Alternatives. This chapter of the EIAR addresses these concerns by assessing the potential for effects, supported by site-specific data, and proposing appropriate mitigation measures, detailed in Section 15.5.4 below.

Geological Survey Ireland

A scoping request was sent out to Geological Survey Ireland (GSI) on 27th June 2025. No response has been received by the time of drafting this chapter.

Irish Rail

A scoping request was sent out to Irish Rail on 27th June 2025. No response has been received by the time of drafting this chapter.

15.3 Assessment Methodology

Current EIA practice already includes an assessment of some potential accidents and disaster scenarios such as pollution incidents to ground and surface watercourses as well as assessment of flooding events and peat instability. These are described in detail in the relevant Chapters of this EIAR (Refer to Chapter 7 Land, Soils and Geology, and Chapter 8 Hydrology and Hydrogeology for further detail).

The methodology for this risk assessment includes:

- Review of relevant Legislation and Guidance
- Review of Scoping Responses received from relevant Stakeholders.
- Site Specific Risk Assessment Methodology:
 - Risk Identification
 - Risk Classification
 - Risk Evaluation
 - Risk Assessment
- Description of Baseline Conditions including likely Site-Specific Risks
- Risk Assessment including of the Proposed Development
- Cumulative Risk Assessment of the Proposed Development

15.3.1 Legislation and Guidance

15.3.1.1 Legislation

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

- The vulnerability of the Proposed Development to potential accidents and disasters.
- The Proposed Development's potential to cause major accidents or disasters which pose a risk to the environment.

The information relevant to major accidents and/or disasters to be included in the EIAR is set out in paragraph 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”.

15.3.1.2 Guidance Documents

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

- Central Statistics Office. (2022). Census of Population 2022 - Summary Results.
- Department of Environment, Heritage and Local Government (2010) A Framework for Major Emergency Management – *A Guide to Risk Assessment in Major Emergency Management*.
- Department of Defence (2020) A National Risk Assessment for Ireland.
- Department of Taoiseach (2024) National Risk Assessment 2024 – Overview of Strategic Risks.
- Environmental Protection Agency (2014) Guidance on Assessing and Costing Environmental Liabilities.
- 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.
- HSE (2026) HSE West & North West Interim Regional Major Emergency Plan for HSE Services in counties Donegal, Sligo, Leitrim, West Cavan, Galway, Mayo and Roscommon
- Northern and Western Regional Assembly. (2020, January 23). Regional Spatial and Economic Strategy 2020-2032.
- Regional Planning Guidelines for the West Region 2010-2022¹
- Roscommon County Council. (2022). Roscommon County Development Plan 2022-2028.
- Roscommon County Council Website (<https://www.roscommoncoco.ie/en/>)
- Roscommon County Council (2016) Monksland/Bellanamullia Local Area Plan 2016 – 2022.
- Westmeath County Council (2014) Athlone Development Plan 2014-2020
- Westmeath County Council (2022) Major Emergency Plan.
- Westmeath County Council (2021) County Development Plan 2021-2027.

15.3.2 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 15.4 below.

¹ North West Regional Assembly (2010). *Regional Planning Guidelines for the West Region 2010-2022*. Available at: <https://www.nwra.ie/wp-content/uploads/Planning-Guidelines-for-the-West-Region.pdf>

15.3.3 Impact Assessment Methodology

15.3.3.1 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 operation 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 (2014) *Guidance on Assessing and Costing Environmental Liabilities* document.² The following steps were taken as part of the site-specific risk assessment:

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

15.3.3.1.1 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 or as a result of the Proposed Development during construction and operation.

According to the European Commission EIAR Guidance, risks identified for the project include:

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

15.3.3.1.2 Risk Classification

Classification of Likelihood

After identifying the potential risks, the likelihood of occurrence of each risk has been assessed. The likelihood of identified potential risks occurring was estimated by analysing safety procedures and proposed environmental controls. Table 15-1 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*.³

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

Table 15-1 Classification of Likelihood (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 to 500 years.

² EPA (2014) *Guidance on assessing and costing environmental liabilities*. Available at https://www.epa.ie/publications/compliance-enforcement/licences/reporting/financial-provisions/EPA_OEE-Guidance-and-Assessing-WEB.pdf

³ 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 organisations worldwide; some opportunity, reason or means to occur; may occur once per 10 to 100 years.
4	Likely	Likely to or may occur; regular recorded incidents and strong anecdotal evidence and will probably occur once per 1 to 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.

15.3.3.2 Classification of Consequence

The consequence rating assigned to each risk assumes that all proposed mitigation measures and/or safety procedures have failed to prevent a major accident and/or disaster. Furthermore, the HSE (2026) *HSE West & North West Interim Regional Major Emergency Plan for HSE Services in counties Donegal, Sligo, Leitrim, West Cavan, Galway, Mayo and Roscommon.*⁴, 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 15-2.

The consequence of a risk associated with the Proposed Development has been determined based on whether one or more aspects of the consequence description are met. Risks that do not have any consequences have been excluded from the assessment.

Table 15-2 Classification of Impact (Source: DoEHLG, 2010)⁵

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	No contamination, localised effects.
		Infrastructure	< €0.5 M.
		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.
		Environment	Localised displacement of a small number of people for 6-24 hours. Personal support satisfied through local arrangements.
		Infrastructure	
		Social	

⁴ HSE (2026) *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://assets.hse.ie/media/documents/HSE_West_and_North_West_Interim_Regional_Major_Emergency_Plan_V2_2026-02-25.pdf

⁵ 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	Impact	Description
			Simple contamination, localised effects of short duration. €0.5-3 M. Normal community functioning with some inconvenience.
3	Serious	Life, Health, Welfare Environment Infrastructure Social	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. Simple contamination, widespread effects or extended duration. €3-10 M. Community only partially functioning, some services available.
4	Very Serious	Life, Health, Welfare Environment Infrastructure Social	5 to 50 fatalities, up to 100 serious injuries, up to 2000 evacuated. Heavy contamination, localised effects or extended duration. €10-25 M. Community functioning poorly, minimal services available.
5	Catastrophic	Life, Health, Welfare Environment Infrastructure Social	Large numbers of people impacted with significant numbers of fatalities (>50), injuries in the hundreds, more than 2000 evacuated. Very heavy contamination, widespread effects of extended duration. >€25 M. Serious damage to infrastructure causing significant disruption to, or loss of, key services for prolonged period. Community unable to function without significant support.

15.3.3.2.1 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 Department of Environment, Heritage and Local Government (2010) *A Framework for Major Emergency Management - A Guide to Risk Assessment in Major Emergency*

Management (and as outlined in Table 15-3) indicates the critical nature of each risk.⁶ 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 15-3 Classification of Impact (Source: DoEHLG, 2010)

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

⁶ 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>

15.4 Baseline Environment

A desk-study has been completed to establish the baseline environment within which the proposed risk assessment has been carried out. This informs 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.

15.4.1 Introduction

Section 3 of the HSE West & North West Interim Regional Major Emergency Plan (2026) outlines the regional hazard and risk assessment. As the Proposed Development site is located in County Roscommon, which falls within the West Major Emergency Management (MEM) Region (comprising Galway, Mayo and Roscommon), the risks presented are drawn from the West Regional Risk Assessment 2025, rather than the North West Regional Draft Risk Assessment 2026. Below is a list of the risks identified as part of the West Regional Risk Assessment 2025, as outlined in Section 3.

- Severe Weather,
- Flooding,
- Landslide,
- Air Accident,
- Rail Accident,
- Marine Incident at Port/Harbour,
- Inland Waterways,
- Bridge Collapse,
- Industrial Explosion/Fire,
- Road Traffic Collision involving Hazardous Materials,
- Marine Incident,
- Fire in a Crowded Building,
- Hazmat Incident,
- Major Crowd Safety & Civil Disorder,
- Terrorism,
- Loss of Critical Infrastructure,
- Pandemic,
- Water Contamination.

For the purposes of this assessment, these risks have been grouped below under broader hazard categories to aid discussion and analysis. This categorisation is not taken from the HSE West & North West Interim Regional Major Emergency Plan itself. The hazards which are most relevant to this assessment are described in the sections that follow, under the following hazard categories:

- Meteorological,
- Hydrological,
- Geological,
- Fires,
- Transport,
- Industrial Accident,
- Contamination,
- Health and Safety.

These hazards are described in detail before mitigation measures to minimise the risk from relevant hazards are addressed in Section 15.5 below.

15.4.2 Meteorological

Ireland experiences a temperate, oceanic climate, characterized by mild winters and cool summers. According to the Irish National Seismic Network (INSN), earthquakes measuring ~2 on the Richter Scale are “normal” in terms of seismicity in Ireland. These are known as microearthquakes; they are not commonly felt by people and are generally recorded only on local seismographs. As such, buildings or

structures in Ireland are extremely unlikely to be damaged or collapse due to seismic activity. Ireland's geographic position means that tsunamis, which may pose a risk to developments similar to the Proposed Development in other geographic locations, are of a low likelihood of occurrence, and are less likely to be of a significant magnitude in order to cause an accident or disaster.

Climate change is impacting wind patterns in the Northern European region with a range of observable effects including increased wind speeds, changes in wind direction and seasonal variations⁷. Ireland's Climate Averages 1991-2020 Summary Report identifies that the annual mean hourly wind speed ranges from 9 knots at Shannon Airport to 15 knots at Malin Head. Winds are generally strongest in the northwest of the country. The strongest winds are observed during the winter months and range from 10 knots at Shannon Airport to 18 knots at Malin Head. The lightest winds are observed during the summer months and range from 8 knots at Valentia Observatory to 13 knots at Malin Head.

In 2019 there were 7 no. named storms and 9 in 2020, with Storm Francis bringing extreme rainfall in August of 2020 and Storm Aiden bringing 'Storm Force' winds (98km/h) and heavy rainfall on Oct 31st, 2020.

In late 2023 and early 2024, Ireland experienced a very active storm season; the country was affected by 13-14 severe storms⁸. In 2025 there were 5 no. named storms, with Storm Eowyn, occurring in January 2025, reaching 'Hurricane Force' winds (maximum wind speed recorded as 142km/h).⁹ At the time of writing, there were 2 no. named storms in Ireland, Storm Chandra which occurred in January 2026, categorised as a 'Violent Storm' with a wind speed of 104km/h and Storm Dave which occurred in April 2026 with knots ranging between 60-90 km/h along the Atlantic coast. The increased frequency and intensity of storm events lead to associated increases in precipitation.

Nonetheless, the likelihood of significant natural disasters relating to extreme weather events occurring at the Proposed Development site is Low. The relatively flat topography of the site further reduces the risk of natural disasters or major accidents. The potential natural hazards are primarily limited to flooding, occasional storms, and fires, which are detailed in the following sections.

Potential severe weather effects on the Proposed Development are assessed in section 15.5.

15.4.3 Hydrological

As detailed in Chapter 8 and Appendix 8-1 Flood Risk Assessment, tidal flooding is not possible at the Proposed Development site given its elevation (approximately 35 metres above sea level) and distance from the coastline. However, lands along the shoreline of Lough Ree are known to be liable to flooding.

The Flood Risk Assessment prepared for the Proposed Development (Appendix 8-1) identified a flood risk arising from elevated lake levels during extreme rainfall events, with a design flood level of 37.5 metres above ordnance datum (mAOD) adopted based on Catchment Flood Risk Assessment and Management (CFRAM) modelling and Office of Public Works (OPW) data. The assessment confirmed the Proposed Development does not encroach on floodplain storage or increase flood risk elsewhere. Some inundation of the retained promenade access may occur during extreme events, the residual flood risk is considered low and manageable.

15.4.4 Geological

As set out in Chapter 7: Land Soils and Geology, the Proposed Development site comprises predominantly made ground in the marina and waterfront areas, with shallow and poorly drained mineral soils occurring to the south. Subsoil mapping indicates the presence of limestone-derived tills and gravels across most of the Proposed Development site, with a small area of cut-over raised peat at the

⁷ IPCC (2021) *Climate Change 2021: The Physical Science Basis* <https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_FullReport.pdf>

⁸ Met Éireann (2024) *Human-caused Climate Change Brings Increased Storm Rainfall* <<https://www.met.ie/human-caused-climate-change-brings-increased-storm-rainfall>>

⁹ Met Éireann Storm Centre <https://www.met.ie/climate/storm-centre>

southwestern extent. Bedrock consists of undifferentiated Viséan limestones, typically more than 10 m below ground level.

Based on the above information, no major accidents or natural disasters related to ground conditions are anticipated at the Proposed Development site. The combination of stable mineral soils, limestone-derived subsoils, deep bedrock, and limited areas of cut-over peat indicates a low risk of ground instability or geotechnical failure.

15.4.5 Fires

Fire risk at the Proposed Development site is generally low, as much of the area consists of hard surfaces, wet habitats and managed grassland that do not readily ignite. Localised pockets of scrub, hedgerows or dry grass may present a slightly elevated seasonal risk during prolonged dry periods, consistent with national wildfire-risk patterns in Ireland.

The Proposed Development is primarily surrounded by pasture with pockets of woodland and scrub, which do not typically support large or fast-moving fires under normal Irish weather conditions. During extended dry spells, scrub and unmanaged grass can become combustible. There are also some peat bog areas in the surrounding area, which can become more susceptible to smouldering or surface fires during prolonged dry spells. However, overall, the likelihood of a natural fire event occurring in this area remains low.

Large gorse and wildfires are identified as natural meteorological hazards within the region, particularly during prolonged dry spells or due to fires deliberately or accidentally started on adjacent lands. Historical data highlights wildfire occurrences in Roscommon. There were occasional rural wildfires, typically small and linked to grassland, scrub or bog, along with one major, high-impact wildfire event (May 2025) that burned extensive bog and forestry and threatened residential areas, indicating that such risks have the potential to be significant but manageable through proper planning and mitigation.

Based on the mild temperate climate and recent meteorological data recorded at Mount Dillon, County Roscommon (approximately 26km north of the site) between January 2023 and May 2026 (for more details, see Chapter 10), the risk of wildfires is considered minor. The primary fire risk on the site would stem from fires deliberately or accidentally started on adjacent lands.

The Standard Operating Guidance for fire services, as issued by the National Directorate for Fire and Emergency Management, remains applicable for the management of fires in rural areas, reducing the severity of any fire should one take place.

15.4.6 Transportation

Key trip-generating land uses within the study area include the Hodson Bay Hotel, Athlone Golf Club, Baysports Waterpark, marina facilities and a range of lakeshore and water-based recreational amenities. The area also contains dispersed residential development and associated open space lands.

Access is primarily car-based, with Athlone providing regional rail and bus connections. The L2020 Local Road is the principal access route, linking the N61 National Road to Hodson Bay Marina and waterfront facilities, and crossing the Dublin-Galway and Dublin-Westport/Ballina railway line at the Hodson Bay Level Crossing (XM038).

Traffic and parking surveys were undertaken between 31st July and 6th August 2025, comprising three Automatic Traffic Counts (ATCs) on the L2020 Local Road and video-based parking surveys across Hodson Bay. Results indicate moderate traffic volumes generated primarily by hotel guests, recreational users and seasonal tourism activity, with demand increasing during weekends and peak summer periods.

All ATC locations recorded 85th percentile speeds above the posted 50 km/h speed limit, with the highest recorded value reaching 67.3 km/h. These results indicate that vehicle speeds along the L2020 Local Road are consistently higher than the posted speed limit. Refer to Chapter 14, section 14.1 for further details on baseline traffic data.

Existing parking provision comprises 353 spaces distributed across multiple locations within Hodson Bay, primarily serving the hotel, marina and waterfront amenities. No dedicated bus or boat trailer parking is currently provided.

While transport and utility infrastructure are present in the vicinity, including the N61 National Road, L2020 Local Road, railway line and electricity network, the scale and nature of the infrastructure present, together with established operational and safety controls, indicate that the likelihood of major accidents or disasters associated with this infrastructure is very low.

15.4.7 Industrial

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-site of the accident.

The Proposed Development is not connected to or in the vicinity of any site regulated under the Chemicals Act (Control of Major Accident Hazards Involving Dangerous Substances) Regulations 2015 (S. I. No. 209 of 2015), commonly referred to as SEVESO sites.¹⁰ These regulations, which transpose the EU SEVESO III Directive (2012/18/EU) into Irish law, are designed to prevent and mitigate the consequences of major accidents involving hazardous substances, thereby protecting human health, the environment, and property.¹¹

The nearest SEVESO site is located approximately 37.5km southeast of the Proposed Development site. As the Proposed Development is not in proximity to any such regulated site. Accordingly, no significant effects associated with major industrial accidents involving dangerous substances are anticipated.

15.4.8 Contamination

There is no surface watercourse on the Proposed Development site. Much of the rainfall that falls on permeable areas across the Proposed Development site percolates to ground and likely travels via subsurface flow to Lough Ree which is located at the western site boundary. There is also likely some infiltration through the moderately permeable subsoils to the limestone bedrock. As the overall local topography gently slopes from west to east, any overland runoff will generally flow eastward.

The majority of the Proposed Development site is urban fabric with artificial surfaces that are served with a stormwater network. A substantial amount of rainfall is collected through gullies and the stormwater network, which likely outfall to Lough Ree. Some ponding of water has been observed at the gullies and car parking spaces in the northern area of the Proposed Development site, which is likely due to blocked drainages or high lake water levels in winter. The existing roadway is served by gullies which are assumed to outfall to Lough Ree.

The existing stormwater network for the Hodson Bay Hotel are discussed further in Chapter 8: Hydrology and Hydrogeology. There is one observed existing stormwater outflow which passes through an oil interceptor before discharging into Lough Ree along the marina wall to the north (local authority reference number: WP-16-11, ID 2023_983).

As set out in Chapter 8: Hydrology and Hydrogeology, Lough Ree is a lake waterbody within and adjacent to the Proposed Development site; as a result, there is potential for impact on water quality or the downstream receptors due to discharge or spillage of fuel, chemical solvents into watercourse or percolated to groundwater. These impacts are addressed in detail in Chapter 8: Hydrology and Hydrogeology of this EIAR.

¹⁰ HSE, SEVESO III – Public Consultation. Available at: <https://www.hse.ie/eng/services/list/3/emergencymanagement/seveso/>

¹¹ European Parliament and Council, 2012. Directive 2012/18/EU of 4 July 2012 on the control of major-accident hazards involving dangerous substances, amending and subsequently repealing Council Directive 96/82/EC. Official Journal of the European Union, L 197, pp. 1–37. Available at: <https://eur-lex.europa.eu/eli/dir/2012/18/oj>

15.4.9 Health and Safety

The Proposed Development site is currently existing Baysports Waterpark building, marquees, toilet block and associated structures, the existing Waterways Ireland marina, car parking areas, vegetated areas, public amenity space areas and the L2020 Local Road corridor. The primary land-use in the vicinity of the site comprises mainly tourism & recreation, residential (one-off housing) and agricultural pasture.

As set out in the above sections, the receiving environment indicates a very unlikely risk associated with geological hazards such as peat instability, landslides, earthquakes or extreme meteorological events, beyond those typically seen in Ireland in winters, such as storms and heavy rainfall. Likewise, the site is not located within the consultation distance of any Seveso establishment and is not considered vulnerable to industrial accidents arising from hazardous substances. However, hydrocarbons will be present onsite and there is potential for run off into the lake without proper controls in place. Portions of the Proposed Development site are identified for flood risk owing to its location adjacent to Lough Ree and within a low-lying lakeside environment. While transport and utility infrastructure are present in the vicinity, including the N61 National Road, L2020 Local Road, railway line and electricity network, the scale and nature of the infrastructure present, together with established operational and safety controls, indicate that the likelihood of major accidents or disasters associated with this infrastructure is very low. Furthermore, as the site is an existing Waterways Ireland marina, there is a risk of a boating incident; however, with established operational and safety controls, the likelihood of major accidents or disasters associated with this is very low.

The site is served by the existing statutory emergency services, including An Garda Síochána (Athlone Garda Station), the National Ambulance Service and the Fire Service, which provide established emergency response coverage for the area. Acute hospital care is available at Portlincula University Hospital, with local primary care provided at Clonbrusk Primary Care Centre. All works on site are, and will continue to be, subject to the statutory health and safety framework set out under the Safety, Health and Welfare at Work Act 2005 (as amended).

15.4.10 Baseline Conditions Summary

The principal natural hazards relevant to the Proposed Development relate to flooding and severe weather events, as described in the sections below. Mitigation measures are detailed in all relevant chapters in relation to mitigation measures to avoid the release of hazardous materials, spills or contamination events at the Proposed Development site, and a detailed traffic management safety measures are provided in Chapter 14 Material Assets of this EIAR.

During construction of the Proposed Development, all staff will be made aware of and adhere to the Health & Safety Authority's '*Guidelines on the Procurement, Design and Management Requirements of the Safety, Health and Welfare at Work (Construction) Regulations 2013*'. A Health and Safety Plan covering all aspects of the construction process will address the Health and Safety requirements in detail. This will be prepared on a preliminary basis at the procurement stage and developed further at construction stage. An Emergency Response Plan (ERP) is detailed in Appendix 4-2 Construction Environment Management Plan (CEMP) of this EIAR. The ERP provides details of procedures to be adopted in the event of an emergency in terms of site health and safety and environmental protection. The ERP will be updated with any and all additional relevant information and procedures prior to construction of the Proposed Development.

15.5 Risk Assessment

This section outlines the possible risks associated with the Proposed Development for the construction phase and the operation and maintenance phase.

These risks have been assessed in accordance with the relevant classification as outlined in Table 15-1 and Table 15-2.

As outlined in Section 15.3.3 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.

15.5.1 Likely Significant Effects

15.5.1.1 Do-Nothing Scenario

If the Proposed Development were not to proceed, the site would continue to function as it does at present, with no change in existing risks associated with major accidents and natural disasters. The impact of this is considered neutral in the context of the EIAR. In the absence of the Proposed Development, there would be no potential for the Proposed Development to cause or be affected by a major accident or natural disaster during either the construction or operational phases. However, the opportunity to redevelop a key tourism and amenity area in County Roscommon, and to provide safer access to the site for road users, pedestrians and cyclists would be lost. Additionally, the opportunity to fulfil socio-economic development goals, tourism promotion and the public realm enhancement, would be lost.

15.5.1.2 Assessment 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. Five risks specific to the construction of the Proposed Development have been identified and are presented in Table 15-4.

Table 15-4 Risk Register - Construction Phase

Risk ID	Potential Risk	Possible Cause
Potential vulnerability to disaster risks		
A	Severe Weather Severe weather emergencies may involve significant threats to infrastructure and vulnerable sections of the community, as well as icy roads and gales and dense and persistent fog can result in poor driving conditions and increasing transportation hazards. There is currently an arrangement in place by Met Éireann to issue public service severe weather warnings to the Local Authorities.	Extreme weather- periods of heavy rainfall, taking into account climate change and strong winds.
B	Flooding High levels of surface water on site.	Extreme weather- periods of heavy rainfall, taking into account climate change and strong winds.
Potential to cause accidents and / or disasters.		
C	Water and Road/Rail Traffic Incident Collisions onsite and offsite with vehicles involved in construction of Proposed Development.	Driver negligence or failure of vehicular operations on site roads. Traffic Management Plan not implemented. Boating accident near marina construction zones rail/ construction traffic incident.
D	Contamination Discharge or spillage of fuel, chemical solvents into watercourse or percolated to groundwater.	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.
E	Fire Risk of fire resulting loss of, or damage to habitats. Potential water quality impacts as a result of sediment laden runoff.	Storage of fuels and potential for hot works associated with the construction works on site.

15.5.1.3 Assessment of Effects During Operation and Maintenance Phase

Risks specific to the operation and maintenance phase of the Proposed Development have been identified and presented in Table 15-5.

Table 1.5-5 Risk Register - Operation and Maintenance Phase

Risk ID	Potential Risk	Possible Cause
Potential vulnerability to disaster risks		
F	Severe Weather Risk to operational activity on site, damage to bridges and other structures.	Extreme weather- periods of heavy rainfall, taking into account climate change and strong winds.
G	(Wild) fires Risk of fire resulting loss of, or damage to habitats. Potential water quality impacts as a result of sediment laden runoff.	Lightning. Fires lit by others for land management purposes on adjacent lands.
H	Flooding High levels of surface water on site.	Extreme weather- periods of heavy rainfall, taking into account climate change and strong winds.
Potential to cause accidents and / or disasters.		
I	Water and Road/Rail Traffic Incident Personal injury or loss of life.	Collision and/or Sinking Failure to enforce operation and maintenance procedures.
J	Collapse / damage to structures Breach to on-site structures leading to damage & flooding	Damage to marina infrastructure due to a structural defect/ seismic event/ extreme weather event. Malfunction of maintenance procedures.
K	Contamination Ground water and surface water quality contamination from surface water drainage.	The operational phase of the Proposed Development will result in the production of surface water.

15.5.1.4 Assessment of Effects – 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.

Table 15-6 Risk Assessment

Risk ID	Potential Risk	Possible Cause	Environmental Effect	Likelihood Rating	Basis of Likelihood	Consequence Rating	Basis of Consequence	Risk Score (Consequence x Likelihood)
Construction Phase								
A	Severe Weather	Extreme weather-periods of heavy rainfall, taking into account climate change and strong winds. Acute, one-off damaging storm events.	Illness or loss of life; Sedimentation of nearby watercourses.	2	Ireland has experienced an increasing frequency of severe storm events in recent years (as discussed in Section 15.4.2 above), reflecting a broader trend of more frequent and intense storms associated with climate change. However, the likelihood of a severe weather event affecting the Proposed Development is reduced through mitigation measures set out in the CEMP, where construction activities will take account of weather forecasts and predicted severe weather, and works will be paused in advance of such events. On this basis, the likelihood of a	1	The risk of severe weather conditions 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’. Severe weather may cause increased mobilisation of sediment which will be controlled via the project design and mitigation measures.	2

Risk ID	Potential Risk	Possible Cause	Environmental Effect	Likelihood Rating	Basis of Likelihood	Consequence Rating	Basis of Consequence	Risk Score (Consequence x Likelihood)
					severe weather event affecting the Proposed Development is considered very unlikely.			
B	Flooding	Extreme weather-periods of heavy rainfall, taking into account climate change and strong winds	Illness or loss of life; Sedimentation of nearby watercourse	4	The risk of flooding at the Proposed Development site is considered likely to occur, based on the findings of Chapter 8 and the Flood Risk Assessment (Appendix 8-1). Regular recorded flood incidents, including events in 2000, 2004, and 2010, together with strong anecdotal evidence, indicate that flooding at the site is likely to occur 'once every 1 to 10 years.'	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' No contamination of environment (e.g. watercourses), localised effects.	4
C	Water and Road/Rail Traffic Incident	Driver negligence or failure of vehicular operations on site roads and public road network in which works will take place. Collision and/or sinking.	Injury or loss of life.	3	Active travel improvement works will be undertaken as part of the Proposed Development. These works will be delivered under phased traffic-management arrangements, including lane narrowing, temporary traffic signals or stop/go control, reduced speed limits, and pedestrian-management measures. These controls	1	A minor consequence is predicted. Having regard to the scale and nature of the infrastructure present, together with established safety controls, a 'small number of people would be affected' should a vehicular, rail, or boating accident occur, with 'no fatalities and small number of minor injuries with first aid treatment.'	3

Risk ID	Potential Risk	Possible Cause	Environmental Effect	Likelihood Rating	Basis of Likelihood	Consequence Rating	Basis of Consequence	Risk Score (Consequence x Likelihood)
		Traffic Management not implemented.			will ensure that local access is maintained throughout the construction period. A Construction Environmental Management Plan (CEMP) and a Traffic Management Plan (TMP) will also be prepared. As such, it can be determined that there is some 'opportunity, reason or means' for a vehicle, rail, or boating accident to occur on site, 'at some time.' An unlikely risk is therefore predicted.			
D	Contamination	Accidental spillage during refuelling of construction plant with petroleum hydrocarbons. The accumulation of small spills of fuels and lubricants during routine plant use.	Contamination of local drinking water supplies, surface waters and groundwater aquifers.	2	As outlined in Chapter 4, minimal refuelling or maintenance of construction vehicles or plant will take place on site, with refuelling activities restricted to construction machinery, which will be carried out in dedicated refuelling locations by competent personnel.	2	The risk of a fuel spillage or impact on the site drainage network 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 bunded containment areas and proposed drainage mitigation measures during construction. The potential residual environmental effects are described in detail in Chapter 8 which	4

Risk ID	Potential Risk	Possible Cause	Environmental Effect	Likelihood Rating	Basis of Likelihood	Consequence Rating	Basis of Consequence	Risk Score (Consequence x Likelihood)
		Release of effluent from on-site wastewater systems.			A suite of safety measures for mobile fuel storage and refuelling operations will be implemented, as provided in the CEMP (Appendix 4-2). 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.		concludes that there will be no significant environmental effects.	
E	Fires	Storage of fuels and potential for hot works during the construction works on site. Equipment or infrastructure failure. Employee negligence.	Illness or loss of life. Damage to, or depletion of aquatic habitats and species. Short term impacts on ambient air quality.	2	A suite of safety measures for mobile fuel storage and refuelling operations will be implemented, as provided in the CEMP (Appendix 4-2). Equipment used during the construction phase will be maintained in good working order, mitigating electrical fire. Due to the above, the likelihood of fire occurring is very unlikely.	1	During construction, the consequence of a fire is considered minor, reflecting the implementation of the CEMP, which sets out site evacuation and emergency response drill procedures in the event of a fire. Having regard to the scale and nature of the Proposed Development, together with proposed safety controls, a 'small number of people would be affected' should a fire occur, with 'no fatalities and small number of minor injuries with first aid treatment.'	2

Risk ID	Potential Risk	Possible Cause	Environmental Effect	Likelihood Rating	Basis of Likelihood	Consequence Rating	Basis of Consequence	Risk Score (Consequence x Likelihood)
Operation and Maintenance Phase								
F	Severe Weather	Extreme weather-periods of heavy rainfall, taking into account climate change and strong winds. Acute, one-off damaging storm events.	Injury or loss of life. Structural damage, fallen trees, or disruption to power and telecommunications infrastructure.	2	Ireland has experienced an increasing frequency of severe storm events in recent years (as discussed in Section 15.4.2 above), reflecting a broader trend of more frequent and intense storms associated with climate change. However, the likelihood of a severe weather event affecting the Proposed Development is reduced through operational and safety measures, as set out in Chapter 4: Description. On this basis, the likelihood of a severe weather event affecting the Proposed Development is considered very unlikely.	1	These storm events will most likely occur in winter when Baysports facilities aren't operational, and recreational boating and commercial activities in the Lough Ree are out of season. Therefore, the risk of severe weather conditions during the operation and maintenance 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'.	2
G	(Wild) Fires	Lightning Fires lit by others for land management purposes on adjacent lands.	Injury or loss of life. Damage to, or depletion of habitats and species; and Short term impacts on ambient air quality.	2	There is little risk of a fire starting within Proposed Development site because there will be no bulk storage of hydrocarbons or chemicals, storage of wastes, management of flammable or other hazardous materials on	1	The consequence of a fire starting from the surrounding area and spreading onto the site is considered minor. A 'small number of people would be affected' should a fire occur, with 'no fatalities and small number of	2

Risk ID	Potential Risk	Possible Cause	Environmental Effect	Likelihood Rating	Basis of Likelihood	Consequence Rating	Basis of Consequence	Risk Score (Consequence x Likelihood)
		Accident/fuel spillage leading to a fire.			site during the operation and maintenance phase. There is a risk of fire spreading from adjacent landholdings, but due to the nature of the Proposed Development (i.e., and proximity to water), the pathway for wildfire to spread to and affect the Proposed Development is limited. On this basis, the likelihood of a wildfire affecting the Proposed Development is considered very unlikely.		minor injuries with first aid treatment.'	
H	Flooding	Extreme weather- periods of heavy rainfall, taking into account climate change and strong winds	Illness or loss of life.	4	Based on the findings of Chapter 8, the Proposed Development site has a high probability of flooding, and this is supported by historical flood events, together with anecdotal evidence of flooding affecting local roads in the of the site. The risks associated with flooding during the operational and maintenance phase are reduced through mitigation by design,	1	Flooding during the operational and maintenance 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' No contamination of environment (e.g. watercourses), localised effects.	4

Risk ID	Potential Risk	Possible Cause	Environmental Effect	Likelihood Rating	Basis of Likelihood	Consequence Rating	Basis of Consequence	Risk Score (Consequence x Likelihood)
					including the raising of finished floor levels above the predicted flood level., providing resilience to extreme flood events inclusive of climate change and residual uncertainty. However, this measure does not extend to the roads and site access. Therefore, it is considered that the likelihood of flooding is 'likely.'			
I	Water and Road/Rail Traffic Incident	Collision and/or sinking. Failure to enforce operation and maintenance procedures.	Injury or loss of life.	2	Navigation on the marina will be governed by the Waterways Ireland Navigational Bye-Laws and will regulate matters such as registration of craft, navigation of craft, and mooring at public berths. Enforcement of the bye-laws will be undertaken by the Waterways Ireland Inspectorate of Navigation. The Proposed Development promotes sustainable travel, improves accessibility for all users, enhances road safety and provides	1	A minor consequence is predicted. A 'small number of people would be affected' should a collision occur, with 'no fatalities and small number of minor injuries with first aid treatment.'	2

Risk ID	Potential Risk	Possible Cause	Environmental Effect	Likelihood Rating	Basis of Likelihood	Consequence Rating	Basis of Consequence	Risk Score (Consequence x Likelihood)
					sufficient parking capacity to support the continued operation and future growth of Hodson Bay as a strategic tourism, recreation and leisure destination. Taking account of the embedded design measures and proposed mitigation, it is considered to be very unlikely that a traffic (water, road, or rail) incident would occur.			
J	Collapse / damage to structures	Breach or failure of marina infrastructure due to structural defect, extreme weather event, or ground movement. Failure of inspection and maintenance procedures.	Injury or loss of life. Contamination of local drinking water supplies, surface waters and groundwater aquifers.	1	According to the Irish National Seismic Network (INSN), earthquakes measuring ~2 on the Richter Scale are “normal” in terms of seismicity in Ireland. These are known as microearthquakes; they are not commonly felt by people and are generally recorded only on local seismographs. As such, structures in Ireland, such as bridges, are extremely unlikely to be damaged or collapse due to seismic activity.	2	The risk of infrastructure collapse during the operation and maintenance phase will result in a limited consequence in that there will be a ‘few serious injuries, limited people affected’ and simple contamination, with localised effects of short duration.	2

Risk ID	Potential Risk	Possible Cause	Environmental Effect	Likelihood Rating	Basis of Likelihood	Consequence Rating	Basis of Consequence	Risk Score (Consequence x Likelihood)
					Management and maintenance procedures will be implemented by Waterways Ireland to minimize the risk of structural defects or malfunctions.			
K	Contamination	Ground water and surface water quality contamination from surface water drainage.	Contamination of local drinking water supplies, surface waters and groundwater aquifers.	1	The operational phase of the Proposed Development will result in the production of surface water. If not adequately treated, there is potential for indirect impacts on ground water and surface water quality. However, water quality risks will be reduced by use of interception storage, silt traps, and oil/petrol interceptors.	2	The risk of a fuel spillage or impact on the site drainage network during the operation 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 drainage measures during operation and maintenance. The potential residual environmental effects are described in detail in Chapter 8 which concludes that there will be no significant environmental effects.	2

The risk assessment for each of the potential risks identified are consolidated in Table 15-7 which provides their risk scores. A corresponding risk matrix is provided in Table 15-8, which is colour-coded in order to provide an indication of the critical nature of each risk. As outlined in Section 15.2.3.2.2, the red zone represents high-risk scenarios, the amber zone represents medium-risk scenarios, and the green zone represents low-risk scenarios. Further elaboration on the assigned risk ratings is provided in Sections 15.5.1.5. and 15.5.1.8 following the tables.

Table 15-7 Risk Scores

Risk ID	Potential Risk	Likelihood Rating	Consequence Rating	Risk Score
Construction Phase				
A	Severe Weather	2	1	2
B	Flooding	4	1	4
C	Water and Road/Rail Traffic Incident	3	1	3
D	Contamination	2	2	4
E	Fire	2	1	2
Operation and Maintenance Phase				
F	Severe Weather	2	1	2
G	Fires	2	1	2
H	Flooding	4	1	4
I	Water and Road/Rail Traffic Incident	2	1	2
J	Collapse / damage to structures	1	2	2
K	Contamination	1	2	2

Table 15-8 Risk Matrix

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

Table 15-8, presents the potential risks identified during the construction and operation of the Proposed Development all of which can be classified as ‘low risk scenarios.’

The scenarios with the highest risk score in terms of a major accident and/or natural disaster during the construction and operational phases of the Proposed Development are identified below.

15.5.1.5 Flooding During Construction

Based on the Classification of Likelihood of risks as set out in Table 15-1, there is a likely potential for a flood event during the construction phase based on the findings of Chapter 8: Hydrology and Hydrogeology of this EIAR and the Flood Risk Assessment (Appendix 8-1). Regular recorded historical flood incidents, together with anecdotal evidence, indicate that flooding at the site is likely to occur.

It is considered that when the mitigation and monitoring measures outlined in Section 15.5.2 and 15.5.3 below and, in the CEMP, (Appendix 4-2) are implemented, the likelihood of flooding will be 'likely' to occur but will have 'minor' consequences should it do so, representing a **'low-risk scenario'** during the construction phase.

15.5.1.6 Contamination During Construction

There is a potential risk of contamination from site activities during the construction phase from 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 and Chapter 8 of the EIAR, 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.

15.5.1.7 Traffic Incident During Construction

There is a potential risk of a major traffic incident during the construction phase from heavy goods vehicles (HGVs) or plant machinery interacting with Irish rail trains that pass through the Proposed Development site or a large traffic incident with HGV and local traffic interactions. This could occur due to driver negligence, failure of vehicular operation when crossing the railway line, and lack of implementation of traffic management. The risk of boating incident is not considered given that the marina will be shut down for recreational boating activities during the construction phase.

As outlined in Section 14.1 of Chapter 14 Material Assets of this EIAR, specific traffic management measures during the construction phase will be in place. With the implementation of these measures, there will be no significant residual effect associated with this potential impact.

15.5.1.8 Flooding During Operation

As discussed in Chapter 4 Description and Appendix 8-1 Flood Risk Assessment, the finished floor levels of the buildings have been raised to 38mAOD and incorporates a 0.5m freeboard allowance above the design flood level, providing resilience to extreme flood events inclusive of climate change and residual uncertainty. The development does not encroach upon functional floodplain storage, does not obstruct flood conveyance and will not increase flood risk elsewhere. While sections of the retained promenade access may be inundated during extreme events, the gradual nature of lake flooding and the non-residential use of the building ensure that residual risk is low and manageable.

The risk of flooding is 'likely' to occur and will have 'minor' consequences should it do so, representing a **'low-risk scenario'** during the operational phase.

15.5.2 Mitigation Measures

As outlined in Section 15.5.1, the scenario with the highest risk score in terms of the occurrence of major accident and/or disaster was identified as Contamination and Traffic Incident during the construction phase and 'Flooding' at the site during the construction phase and operation phase.

15.5.2.1 Mitigation during the Construction

The Proposed Development has been designed and will be built in line with current best practice and, as such, mitigation against the risk of major accidents and/or disasters will be embedded through the design. In accordance with the provision of the European Commission 'Guidance on the preparation of Environmental Impact Assessment Reports', a Risk Management Plan (RMP) will be prepared and implemented on site to ensure an effective response to disasters or the risk of accidents. The RMP will include sufficient preparedness and emergency planning measures.

A CEMP has been prepared for the Proposed Development and is included in Appendix 4-2 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.

Other best practice and mitigation measures for the Proposed Development are set out below.

Health and Safety

- Health and Safety will be a priority on site at all times; all works will be undertaken in accordance with the requirements of the Safety, Health and Welfare at Work Act 2005 (as amended). This will encompass the use of all necessary Personal Protective Equipment and adherence to The Site Health and Safety Plan.
- An Emergency Response Plan (ERP) will be implemented and adhered to on site. The ERP provides details of procedures to be adopted in the event of an emergency in terms of site health and safety and environmental protection. Please see Chapter 4 Description and Appendix 4-2 CEMP (Construction Environmental Management Plan) for details.

Severe Weather

The works programme for the construction phase will incorporate weather forecasts, with particular emphasis on predicted rainfall. Excavations, soil/subsoil movements, and vegetation stripping will be suspended or scaled back in the event of heavy rain forecasts. The extent of these adjustments will be directly proportional to the anticipated rainfall levels.

The following forecasting systems will be utilised daily to inform and direct construction activities at the Proposed Development site:

- General Forecasts: Available on a national, regional and county level from the Met Éireann website (www.met.ie/forecasts). These provide general information on weather patterns including rainfall, wind speed and direction but do not provide any quantitative rainfall estimates;
- MeteoAlarm: Alerts to the possible occurrence of severe weather for the next 2 days. Less useful than general forecasts as only available on a provincial scale;

- 3-hour Rainfall Maps: Forecast quantitative rainfall amounts for the next 3 hours but does not account for possible heavy localised events;
- Rainfall Radar Images: Images covering the entire country are freely available from the Met Eireann website (www.met.ie/latest/rainfall_radar.asp). The images are a composite of radar data from Shannon and Dublin airports and give a picture of current rainfall extent and intensity. Images show a quantitative measure of recent rainfall. A 3-hour record is given and is updated every 15 minutes. Radar images are not predictive; and,
- Consultancy Service: Met Eireann provide a 24-hour telephone consultancy service. The forecaster will provide interpretation of weather data and give the best available forecast for the area of interest.

Operation and maintenance of the marina at Hodson Bay will continue to be the responsibility of Waterways Ireland. During the operational phase of the Proposed Development, the marina will remain open year-round, except during periods of exceptional weather or necessary maintenance activities. During these times, Waterways Ireland reserves the right to close the navigation.

Hydrological

- Surface water drainage measures, pollution control and other preventative measures have been incorporated into the project design to minimise significant adverse impacts on water quality and downstream receptors. A Drainage Strategy, prepared by CIVIC Engineers is included as Appendix 4-4.
- The surface water drainage plan focuses on silt management and to control runoff rates. The key surface water control measure is that there will be no direct discharge of untreated development runoff into any water bodies, surrounding land, or adjacent roadways during either the construction or operational and maintenance phases of the Proposed Development. During the operational and maintenance phase, water quality risks are reduced by use of interception storage, silt traps, and oil/petrol interceptors. SuDS principals will be employed, as described in Section 8.4.1, Chapter 8: Hydrology and Hydrogeology.

Overall, the Proposed Development presents no significant impacts to surface water and groundwater quality, provided the proposed mitigation measures, as set out in Chapter 8: Hydrology and Hydrogeology are implemented.

15.5.2.2 Mitigation during the Operational

Water traffic Incident

Operation and maintenance of the marina at Hodson Bay will continue to be the responsibility of Waterways Ireland. Potential effects during operation include a potential risk of watercraft collision and/or sinking caused by inadequate enforcement of operation and maintenance procedures.

The following management and maintenance procedures will be implemented by Waterways Ireland to minimise the risk of watercraft collision incidents:

- The marina at Hodson Bay will be operated and maintained by Waterways Ireland. The navigation will be open all year round with the exception of exceptional weather or maintenance activities where Waterways Ireland reserves the right to close navigation. Other restrictions may apply outside the navigation season.
- Navigation on the marina will be governed by the Waterways Ireland Navigational Bye-Laws and will regulate matters such as registration of craft and mooring at public berths. Enforcement of the bye-laws will be undertaken by the Waterways Ireland Inspectorate of Navigation.
- Speed limits for water traffic on Lough Ree on the approach to the marina and around the marina is limited to 5km/h.

More detail on the operational and maintenance phase of the Proposed Development can be found in Section 4.8 of Chapter 4: Description of this EIAR.

Traffic Incident

- **Mitigation by Design:** The Proposed Development includes Active Travel site access improvements, including a shared cycle / pedestrian pathway along the length of the L2020 Local Road from the N61 National Road junction to the Hodson Bay Marina. The Proposed Development will also see the implementation of traffic calming measures along the L2020 Local Road accessing the site.
- A detailed Traffic Management Plan (TMP) will be prepared by the Contractor and agreed upon with the relevant local authorities prior to the commencement of the construction phase, as detailed in Chapter 14: Material Assets of this EIAR. By adhering to the TMP, the risk of traffic incidents will be reduced.

15.5.3 Monitoring

15.5.3.1 Monitoring during Construction

- A CEMP has been prepared and submitted with the application. A final construction-stage CEMP will be prepared by the appointed contractor prior to commencement. 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 4-2 for the CEMP which sets out the minimum standards to be employed by the contractor.
- The contractor will assign a member of the site staff as the environmental manager with the responsibility for ensuring the environmental measures prescribed in this document are adhered to. Any environmental incidents or non-compliance issues will immediately be reported to the project team.
- Weather monitoring and forecasting as detailed in section 15.5.2 will be undertaken for the duration of the construction phase.

15.5.3.2 Monitoring During Operation

As discussed above, the Proposed Development has been designed and will be built and will operate in line with current best practice and, as such, mitigation against the risk of major accidents and/or disasters will be embedded through the design.

- The marina infrastructure will be subject to a maintenance schedule which will be managed by Waterways Ireland. As part of this maintenance schedule, damage to marina infrastructure will be inspected and fixed as required to ensure the ongoing safety of recreational boat users of the facility.

15.5.4 Residual Effects

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

Flooding in the vicinity of the site and along retained access routes is likely to occur. However, the vulnerability of the Proposed Development itself is low due to embedded flood mitigation measures including raised finished floor levels and freeboard allowances.

It is considered that when the mitigation and monitoring measures outlined in the CEMP are implemented and adhered to there will not be significant residual effect(s) associated with the construction and operation of the Proposed Development.

15.5.5 Significance of Effects

No significant effects on vulnerability to major accidents and natural disasters are anticipated.

15.5.6 Assessment of Cumulative and In Combination Impacts

A search in relation to projects that may have the potential to result in a cumulative impact with the project on the environment was carried out as part of the EIAR. The Proposed Development has been considered, cumulatively with the projects set out in Chapter 2: Background of the EIAR.

The projects within Appendix 2-1 predominantly comprise one off housing as well as an application for the current Baysports Waterpark facilities Planning Reference 31584-23, Granted, 2024 and an application by ESB for the restringing of 35.7 km of overhead lines (OHL) from Athlone to Lanesboro (Planning Reference 2460559, Granted 2024).

The potential for major accidents or natural disasters from one off housing developments is considered extremely unlikely. As such, the potential for any of the aforementioned impacts to exceed the associated development boundaries of the projects listed in Appendix 2-1 is considered unlikely. As such, potential for cumulative effects between developments listed in Appendix 2-1 and the Proposed Development on Major Accidents and Natural Disasters is considered Unlikely, Imperceptible and Negative for both the construction and operational phases.

The Baysports Waterpark application (Planning Reference 31584-23, Granted, 2024) comprises marquees, prefabricated buildings and waterslide inflatable installations. These works are of minimal environmental impact, with negligible to no potential major accidents and natural disasters. Furthermore, these works are already installed onsite and will be dismantled and relocated temporarily to facilitate the construction of the Proposed Development. As such, cumulative effects with Planning Reference 31584-23 cannot occur and cumulative effects from the dismantling and relocating of this type of development alongside the construction phase of the Proposed Development are not anticipated.

The nearest works associated with the application by ESB (Planning Reference 2460559, Granted 2024) to restring existing overhead lines is approximately 500m from the N61-L2020 junction and is located within the middle of an agricultural field on the other side of the N61. This project is small scale, minimally invasive with no spatial overlap with the Proposed Development. Likewise, this project is likely to be completed by the time the construction phase of the Proposed Development commences, and as such, temporal overlap is unlikely.

The Proposed Development, with mitigation measures in place, was found to have no potential for significant in-combination or cumulative effects associated with the potential for the project to be impacted by major accidents or natural disasters or the Proposed Development's potential to cause major accidents or natural disasters. This is based on the low risk associated with the Proposed Development described in this Chapter of the EIAR and a review of the nature of the surrounding land uses and projects existing or intended in the surrounding area.