

## 17 RISK MANAGEMENT (MAJOR ACCIDENTS & DISASTERS)

### 17.1 Introduction

This chapter describes the Proposed Development in respect of its potential vulnerability to major accidents / disasters, and its potential to give rise to the same.

The assessment is carried out in compliance with the EIA Directive on the assessment of the effects of certain public and private projects on the environment. The EIA Directive provides in Article 3 that an environmental assessment shall identify, describe and assess in an appropriate manner, in the light of each individual case, the direct and indirect significant effects of a project on specified factors, namely: (a) population and human health; (b) biodiversity, with particular attention to protected species and habitats; (c) land, soil, water, air and climate; (d) material assets, cultural heritage and the landscape; and (e) the interaction between the factors referred to in points (a) to (d). Further, the effects on these factors must include: -

*“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”*

The underlying objective of this assessment is to ensure that appropriate precautionary actions are taken for those projects which *“because of their vulnerability to major accidents and/or natural disasters, are likely to have significant adverse effects on the environment”* (Recital (15) to the 2014 EIA Directive (Directive 2014/52/EU)).

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### 17.2 Assessment Methodology

The scope and methodology of this assessment is centred on the understanding that the Proposed Development will be designed, built and operated in line with best international current practice. As such, major accidents resulting from the Proposed Development are very unlikely.

The scope and methodology presented in the following sections are based on the provisions of the EIA Directive, the EPA Guidelines, and EU Commission guidance, as well as professional judgement.

A risk analysis-based methodology that covers the identification, likelihood and consequences of major accidents and/or disasters has been used for this assessment (refer to Section 17.5 for further detail on this approach).

The assessment of the risk of major accidents and/or disasters 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.

#### 17.2.1 Guidance and Legislation

##### 17.2.1.1 Legislative Requirements

The following paragraphs set out the requirements of the EIA Directive in relation to major accidents and/or disasters. Recital 15 of the 2014 EIA Directive states: -

*“In order to ensure a high level of protection of the environment, precautionary actions need to be taken for certain projects which, 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. For such projects, it is important to consider their vulnerability (exposure and resilience) to*

*major accidents and/or disasters, the risk of those accidents and/or disasters occurring and the implications for the likelihood of significant adverse effects on the environment. In order to avoid duplications, it should be possible to use any relevant information available and obtained through risk assessments carried out pursuant to Union legislation, such as Directive 2012/18/EU of the European Parliament and the Council and Council Directive 2009/71/Euratom, or through relevant assessments carried out pursuant to national legislation provided that the requirements of this Directive are met.”*

It is clear from the EIA Directive that a major accident and/or disaster assessment is most readily applied to ‘Control of Major Accident Hazards involving Dangerous Substances’ (COMAH) sites or major industrial / energy installations. Although the proposed development at this location is not of this nature, the assessment of major accidents and disasters for the Proposed Development has been carried out for completeness.

Article 3 of the EIA Directive requires that the EIAR shall identify, describe and assess in the appropriate manner, the direct and indirect significant effects on population and human health, biodiversity, land, soil, water, air and climate, material assets, cultural heritage and landscape deriving from (amongst other things) the “*vulnerability of the project to risks of major accidents and/or disasters that are relevant to the project concerned*”.

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.”*

#### 17.2.1.2 Guidance Documents

A number of guidance documents and published plans have been reviewed and considered in order to inform this assessment, as described in the following sections.

- Environmental Protection Agency Guidelines (2022).
- National Risk Assessment 2024: Overview of Strategic Risks.
- European Commission – Environmental Impact Assessment of Projects – Guidance on the preparation of the Environmental Impact Assessment Report (2017).
- Guidance on Assessing and Costing Environmental Liabilities (2014).
- A Framework for Major Emergency Management Guidance Document 1-A Guide to Risk Assessment in Major Emergency Management (2010).
- A Guide to Risk Assessment in Major Emergency Management (2010).

### 17.3 Receiving Environment

The application site comprises three land parcels, “Site 3”, “Site 4” and “Site 5”, located within the statutory Clonburris Strategic Development Zone (SDZ) development boundary, for which the Clonburris SDZ Planning Scheme 2019 has been approved.

The overall Clonburris SDZ lands extend to a gross development area of 281ha, with a net development area of 151ha. This has approved development potential for c.9,500 dwellings. SDCC ownership extends to 39.5ha of the Clonburris SDZ lands, which have been the subject of a Masterplan study for approximately 2,600 dwellings.

The Site 3, Site 4 and Site 5 lands amount to c. 29.39ha, within the Kishoge Development Area of the Clonburris SDZ Planning Scheme area. These sites are in the ownership of South Dublin County Council.

### **17.3.1 Wider Context**

The Clonburris Strategic Development Zone (SDZ) covers approximately 281ha and is located approximately 16km to the west of Dublin City Centre, between the built-up suburbs of Lucan, Clondalkin and Liffey Valley.

The Dublin-Kildare/Cork railway line, with two existing stations – Clondalkin-Fonthill and Kishoge, bisects the northern and southern parts of the SDZ lands. The Grand Canal borders the southern edge of the SDZ. Two strategic roads traverse the SDZ on a north south axis, Grange Castle Road (R136) and Fonthill Road (R113), forming connections to the surrounding suburbs.

### **17.3.2 Accessibility**

Site 3 will be accessible to vehicles, cyclists and pedestrians from Adamstown Avenue and the Clonburris Northern Link Street (NLS). The NLS was granted permission on 10 February 2025 under SDCC Reg. Ref. SDZ24A/0033W. It will form a junction with Adamstown Avenue within Site 3, to the west of Grange Castle Road and north of the Dublin-Kildare/Cork rail line.

Pedestrian, cycle and vehicular will also be available from the existing entrance at Tullyhall Rise, along the northern boundary of Site 3. And a pedestrian and cycle access will be provided from the permitted green link under Reg. Ref. SDZ24A/0033W, located adjacent to Lucan East Educate Together National School. A new pedestrian access is proposed via Rossberry Park to the north west corner of Site 3.

Site 4 will be accessed from the permitted Southern Link Street (SLS), granted under SDCC Reg. Ref. SDZ20A/0021, from which vehicular, cycle and pedestrian access is provided.

At Site 5, vehicular, pedestrian and cycle access to the parcel in the south will be from Thomas Omer Way via a new left-in-left-out junction at Lynch's Lane and from the R136 via the permitted Clonburris NLS (SDZ24A/0033W). Vehicular, pedestrian and cycle access to the north parcel will be from Thomas Omer Way via a new signalised junction. New pedestrian connections are facilitated to the Foxborough and Omer Walk residential estates.

The proposed development of Sites 3, 4 & 5 also includes a network of internal local roads, providing further vehicular, pedestrian and cycle access, in accordance with the Design Manual for Urban Roads and Streets (DMURS).

## **17.4 Characteristics of the Proposed Development**

### **17.4.1 The Proposed Development- Site 3**

The proposed development comprises 580no. residential units in a mix of house, apartment, duplex and triplex units comprising 1-bedroom, 2-bedroom and 3-bedroom typologies; 2-storey childcare facility; All associated and ancillary site development and infrastructural works including surface level car parking, bicycle parking, hard and soft landscaping and boundary treatment works, including public, communal and private open space, public lighting, bin stores and foul and water services. Vehicular access to the site will be from Adamstown Avenue and the Northern Link Street, proposed under permitted application Reg. Ref. SDZ24A/0033W.

A full project description is provided in Chapter 3: Description of Proposed Development.

#### 17.4.2 The Proposed Development- Site 4

The proposed development comprises 436no. residential units in a mix of house, apartment, duplex and triplex units comprising 1-bedroom, 2-bedroom, 3-bedroom and 4-bedroom typologies; a childcare facility on the ground floor of Block F; retail unit; community building; employment uses; and, all associated and ancillary site development and infrastructural works including surface level car parking, bicycle parking, hard and soft landscaping and boundary treatment works, including public, communal and private open space, public lighting, bin stores and foul and water services. Vehicular access to the site will be via the Southern Link Street (SLS) permitted under SDZ20A/0021.

A full project description is provided in Chapter 3: Description of Proposed Development.

#### 17.4.3 The Proposed Development- Site 5

The proposed development comprises 236 no. residential units including 55no. social housing units, 113no. affordable purchase units and 68no. cost rental units. The scheme provides for a mix of 1, 2 and 3-bedroom units in a range of dwelling typologies, as follows:

- a) 35no. houses
- b) 110no. duplex units
- c) 33no. triplex units, and
- d) 58no. apartments

The proposal also includes all associated and ancillary site development and infrastructural works including a total of 219no. car parking spaces at undercroft and surface level, bicycle parking, hard and soft landscaping and boundary treatment works, public, communal and private open space, public lighting, waste storage areas and foul and water services. Vehicular access to the site will be from Thoms Omer Way and the Northern Link Street (NLS) proposed under concurrent application Reg. Ref. SDZ24A/0033W.

A full project description is provided in Chapter 3: Description of Proposed Development.

### 17.5 Potential Impact of the Proposed Development

#### 17.5.1 Proposed Development

As discussed above, the scope and methodology of this assessment is centred on the understanding that the Proposed Development would be designed, built and operated in line with best international current practice. As such, the vulnerability of the Proposed Development to risks of major accidents and/or disasters is considered low.

Current EIA practice already includes an assessment of some potential accidents and disaster scenarios such as pollution incidents to ground and watercourses, as well as assessment of flooding events. These are described in detail in the relevant EIAR assessment Chapters (refer to Chapter 8: Water and Chapter 7: Land, Soil and Geology for further detail).

##### 17.5.1.1 Site Specific Risk Assessment

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 guidance.

The criteria for categorising impact are derived from the DoEHLG guidance (Refer to below tables). The following steps were undertaken as part of the site-specific risk assessment: -

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

- Risk evaluation.

### Risk Identification

The identification of plausible risks has been carried out in consultation with relevant specialists. A Risk Register which was prepared during the design of the Proposed Development was also reviewed in order to inform the identification of risks for this assessment. The identification of risks has focused on non-standard but plausible incidents that could occur at the Proposed Development during the Construction and Operation phases.

In accordance with the European Commission Guidance risks are identified in respect of the developments: -

- 1) Potential vulnerability to disaster risks.
- 2) Potential to cause accidents and/or disasters.

### Risk Classification

Having identified 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 20.1 defines the likelihood ratings that have been applied.

The approach adopted has assumed a 'risk likelihood' where one or more aspects of the likelihood description are met, i.e. any risk to the Proposed Development less than extremely unlikely to occur has been excluded from the assessment. The likelihood rating assigned to each risk has assumed that all proposed mitigation measures and/or safety procedures are in place and have succeeded in reducing or preventing the major accident and/or disaster occurring.

Rating	Classification	Effect 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 communicates; and/or little opportunity, reason or means to occur. May occur once every 100-500 years.
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 10-100 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.

**Table 17.1:** Risk Classification Table – Likelihood.

### 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 occurring. The consequence of the impact if the event occurs has been assigned as described in Table 17.2.

The consequence of a risk to 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.

Ranking	Consequence	Impact	Description
1	Minor	Life, Health, Welfare Environment Infrastructure Social	Small number of people affected; no fatalities and small number of minor injuries with first aid treatment. No contamination, localised effects <€0.5M. Minor localised disruption to community services or infrastructure (<6 hours).
2	Limited	Life, Health, Welfare Environment Infrastructure Social	Single fatality; limited number of people affected; a few serious injuries with hospitalisation and medical treatment required. Localised displacement of a small number of people for 6-24 hours. Personal support satisfied through local arrangements. Simple contamination, localised effects of short duration €0.5-3M 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. €3-10M. 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 €10-25M. 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 >€25M. Serious damage to infrastructure causing significant disruption to, or loss of, key services for prolonged period. Community unable to function without significant support.

**Table 17.2:** Risk Classification Table – Likelihood.

### Risk Evaluation

In accordance with the DoEHLG 2010 Guidelines, the evaluated major accidents and natural disasters (MANDs) will be subject to a risk matrix to determine the level of significance of each risk for each scenario. These have been grouped according to 3 categories: -

- **High Risk**

Scenarios that have an evaluation score of 12 – 25, as indicated by the Red Zones in Table 17.3.

- **Medium Risk**

Scenarios that have an evaluation score of 8 – 11 as indicated by the Amber Zone in Table 17.3.

- **Low Risk**

Scenarios that have an evaluation score 1 – 7, of as indicated by the Green Zones in Table 17.3.

Likelihood	5 – V. Likely					
	4 – Likely					
	3 – Unlikely					
	2 – V. Unlikely					
	Ext. Unlikely					
		1 Minor	2 – Limited	3 Serious	4 – V. Serious	5 – Catastrophic
Consequence of Impact						

**Table 17.3:** Levels of Significance.

Significant effects resulting from MANDs are adverse effects that are described as ‘Significant’, ‘Very Significant’ or ‘Profound’ under the EPA Guidelines (2022) and Volume 2, Section 2: The EIA Process of this report. Consequently, MANDs that fall within Amber or Red Zones (‘Medium’ or ‘High’ Risk Scenarios) are brought forward for further consideration and assessment for further mitigation.

#### 17.5.1.2 Construction Phase

Risk ID	Potential Risk	Possible Cause	Requirement for Further Assessment?
<b>Potential Vulnerability to Accidents and/or Disasters</b>			
<b>A</b>	Flooding of site.	<ul style="list-style-type: none"> <li>Extreme weather – periods of heavy rainfall, taking into account climate change, strong winds and tidal events.</li> </ul>	<p>No.</p> <p>The application site (Site 3, Site 4 and Site 5) is not at risk of flooding.</p> <p>The Flood Risk Assessment, prepared by JBA Consulting in relation to Site 4 demonstrates that, with the proposed mitigation measures in place, the development can proceed without increasing flood risk to the site or surrounding areas.</p> <p>Refer to the findings of the Flood Risk Assessments, prepared by DBFL Consulting Engineers, CS Consulting Engineers and JBA Consulting for further detail relating to the Proposed Development.</p>
<b>Potential to Cause Major Accidents and/or Disasters</b>			
<b>B</b>	Fire / Explosion.	<ul style="list-style-type: none"> <li>Damage to unmapped services / utilities during earth works.</li> <li>Vehicle and vehicle collision.</li> </ul>	<p>No.</p> <p>The Construction Phase of the Proposed Development will be carried out in accordance with all relevant health and safety guidance and legislation, as well as the provisions of the Construction Environmental Management Plan (CEMP), prepared by DBFL Consulting Engineers with input from CS Consulting Engineers and RPS Consulting.</p>
<b>C</b>	Unplanned outages / disruption to services.	<ul style="list-style-type: none"> <li>Damage to unmapped services / utilities during earth works.</li> </ul>	<p>No.</p> <p>Disruption to services not considered to constitute a ‘major accident or disaster’ for the purposes of this assessment.</p>

<b>D</b>	Road traffic accidents resulting from construction phase traffic or temporary construction traffic management measures.	<ul style="list-style-type: none"> <li>• Driver error.</li> <li>• Object on road.</li> <li>• Failure of vehicle control systems.</li> <li>• Public confusion.</li> </ul>	<p>No.</p> <p>The Construction Phase of the Proposed Development will be carried out in accordance with all relevant health and safety guidance and legislation, as well as the provisions of the Construction Environmental Management Plan, prepared by DBFL Consulting Engineers with input from CS Consulting Engineers and RPS Consulting.</p>
<b>E</b>	Contamination of the groundwater / surface water.	<ul style="list-style-type: none"> <li>• Construction phase spills or leakages.</li> </ul>	<p>No.</p> <p>The Construction Phase of the Proposed Development will be carried out in accordance with construction best-practice and provisions of the Construction Environmental Management Plan, prepared by DBFL Consulting Engineers with input from CS Consulting Engineers and RPS Consulting.</p>
<b>F</b>	Falling debris from construction vehicles / cranes or cranes striking rail overhead cables or poles.	<ul style="list-style-type: none"> <li>• Inadequate securing.</li> <li>• Overloading of vehicles.</li> </ul>	<p>No.</p> <p>The Construction Phase of the Proposed Development will be carried out in accordance with construction best-practice and provisions of the Construction Environmental Management Plan, prepared by DBFL Consulting Engineers, with input from CS Consulting Engineers and RPS Consulting.</p>
<b>G</b>	Release of asbestos fibres to atmosphere or surface water.	<ul style="list-style-type: none"> <li>• Inadequate handling and removal of Asbestos Containing Materials (ACMs).</li> <li>• Removal of un-surveyed ACM.</li> </ul>	<p>No.</p> <p>The Construction Phase of the Proposed Development will be carried out in accordance with construction best-practice and provisions of the Construction Environmental Management Plan, prepared by DBFL Consulting Engineers, with input from CS Consulting Engineers and RPS Consulting.</p>

**Table 17.4:** Risk Register – Construction Phase.

None of the potential Construction Phase risks considered have been identified as requiring further assessment.



## 17.5.1.3 Operational Phase

Risk ID	Potential Risk	Possible Cause	Requirement for Further Assessment?
<b>Potential Vulnerability to Disaster Risks</b>			
H	Flooding of site.	<ul style="list-style-type: none"> <li>Extreme weather – periods of heavy rainfall, taking into account climate change, strong winds and tidal events.</li> </ul>	<p>No.</p> <p>The site is not at risk of flooding.</p> <p>The Proposed Development will have no impact on floodplain storage and conveyance. The likelihood of flooding is further minimised with adequate sizing of the on-site surface network and SuDS measures. Refer to findings of the Flood Risk Assessments, prepared by DBFL Consulting Engineers, CS Consulting Engineers and JBA Consulting for the proposed development.</p> <p>The Flood Risk Assessment, prepared by JBA Consulting in relation to Site 4 demonstrates that, with the proposed mitigation measures in place, the development can proceed without increasing flood risk to the site or surrounding areas.</p>
I	Incident at nearby SEVESO site resulting in off-site environmental impact.	<ul style="list-style-type: none"> <li>Fire / Explosion.</li> <li>Equipment / Infrastructure failure.</li> </ul>	<p>No.</p> <p>A “consultation distance” is very broadly defined under Regulation 2 of the COMAH Regulations as <i>“a distance or area relating to an establishment, within which there are potentially significant consequences for human health or the environment from a major accident at the establishment. The consultation distance for some types of COMAH facility ranges from 300m for establishments where the risk is from flammable non-pressurised materials to 1 km for establishments where chemical processing involving flammable or toxic substances takes place, to 2km for establishments with bulk storage of pressurised or toxic substances, triggering an obligation on the Planning Authority to notify the HSA.”</i></p> <p>The consultation distance is included in <i>italics</i> after each listed COMAH site.</p> <p><b>Nearest Upper Tier Sites: -</b></p> <ul style="list-style-type: none"> <li>Intel Ireland Limited, Collinstown Industrial Park, Leixlip, Co. Kildare: c. 7km from proposed development. <i>[Consultation Distance: 1 km]</i></li> <li>Dachser Ireland Ltd, Blackchurch Business Park, Rathcoole, Dublin: c. 8k from proposed development. <i>[Consultation Distance: 1 km]</i></li> <li>BOC Gases Ireland Ltd, PO Box 201, Bluebell Industrial Estate, Dublin 12: c. 7km from proposed development. <i>[Consultation Distance: 1 km]</i></li> </ul> <p><b>Nearest Lower Tier Sites:-</b></p> <ul style="list-style-type: none"> <li>Microsoft Ireland Ltd, Grangecastle International Business Park, Clondalkin, Dublin 22: c. 1.1km from proposed development. <i>[Consultation Distance: 1 km]</i></li> <li>Brenntag Chemicals Distribution (Ireland) Ltd, Unit 405, Greenogue Business Park,</li> </ul>

Risk ID	Potential Risk	Possible Cause	Requirement for Further Assessment?
			<p>Rathcoole, Dublin 24: c. 4km from proposed development. <i>[Consultation Distance: 1 km]</i></p> <ul style="list-style-type: none"> <li>• Iarnrod Éireann, Iarnrod Éireann Maintenance Works, Inchicore, Dublin 8: c. 6km from proposed development. <i>[Consultation Distance: 1 km]</i></li> <li>• Irish Distillers Ltd, Robinhood Road, Fox &amp; Geese, Clondalkin, Dublin 22: c. 5km from proposed development. <i>[Consultation Distance: 1 km]</i></li> </ul> <p>As can be seen from the list above, the closest COMAH sites are c. 1.1km and c. 4km from the application sites of the proposed residential development. The consultation distance in both cases is 1km.</p>
<b>Potential to Cause Accidents and/or Disasters</b>			
<b>J</b>	Fire / Explosion.	<ul style="list-style-type: none"> <li>• Equipment or infrastructure failure.</li> <li>• Act of terrorism.</li> <li>• Electrical problems.</li> </ul>	<p>No.</p> <p>The Proposed Development will be designed, built and operated in line with best international current practice, and will be compliant with all relevant Health and Safety and Fire regulation and guidance.</p>
<b>K</b>	Collision of Aircraft.	<ul style="list-style-type: none"> <li>• Failure of air traffic control systems.</li> <li>• Act of terrorism.</li> </ul>	<p>No.</p> <p>The Proposed Development does not include buildings in excess of 6 storeys.</p> <p>Dublin Airport is located approximately 15km of the site to the north-east. The application site is situated outside the flight path/outer public safety zone for the southern runway at Dublin Airport.</p> <p>Casement Aerodrome (Baldonnell) is located approximately 2km south of the application site. The application site is situated outside of the flight path/outer public safety zone for the Aerodrome.</p>
<b>M</b>	Vehicle collisions on site.	<ul style="list-style-type: none"> <li>• Public negligence.</li> <li>• Failure of vehicular operations.</li> </ul>	<p>No.</p> <p>The internal road network and car parking areas have been subject to a Road Safety Audit and have been designed in accordance with the Design Manual for Urban Roads and Streets (2013).</p> <p>Private car use is also minimised by reduced car parking, provision of bicycle and pedestrian facilities and ready access to quality public transport.</p> <p>Individual vehicular accidents / incidents are not considered to constitute a 'major accident / disaster' for the purposes of this assessment.</p>
<b>N</b>	Incident at nearby Kishoge Train Station.	<ul style="list-style-type: none"> <li>• Act of terrorism.</li> <li>• Explosion / Fire.</li> </ul>	Yes. See below for further risk assessment.
<b>O</b>	Collision of Train	<ul style="list-style-type: none"> <li>• Derailment causing impact with buildings</li> </ul>	<p>No.</p> <p>The rail corridor is adequately protected in line with Irish Rail safety requirements. Trains will be travelling slower than usual as they will be entering or exiting Kishoge Train Station.</p>

Table 17.5: Risk Register – Operational Phase.

The potential Operational Phase risks identified for further assessment includes item 'N' - 'Incident at nearby Kishoge Train Station'.

### Risk Assessment

Risk ID	Potential Risk	Possible cause	Environmental Effect	Likelihood Rating	Consequence Rating	Risk Score (Consequence x Likelihood)
N	Incident at nearby Kishoge Train Station.	<ul style="list-style-type: none"> <li>Fire / explosion.</li> <li>Act of terrorism .</li> </ul>	<ul style="list-style-type: none"> <li>Illness, injury or death</li> <li>Air quality effects</li> </ul>	1	5	5
<p><b>Basis of Likelihood:</b> Whilst the <i>National Risk Assessment 2024</i> has identified the risk to Ireland from both domestic and international terrorism, such an incident is considered 'very unlikely' in that there are no similar 'recorded incidents or anecdotal evidence' of an attack of this magnitude in Ireland. The location of the station is not within the city centre and therefore makes the location less of a potential target.</p> <p><b>Basis of Consequence:</b> Such an attack in Ireland could have significant impact in terms of public safety and security in the short term. Likewise, a breakdown in international peace and security arising from inter-state wars or other armed conflicts could have significant repercussions for Ireland and the EU, including potential impacts on energy supplies, transport routes or the environment. Thus, a 'very serious' consequence is identified in that such an event would result in numerous injuries and possibly fatalities, and there would be 'localised effects for an extended duration.'</p>						

**Table 17.6:** Risk Assessment – Operational Phase

This risk assessment in Table 17.6 categorises each of the potential risks by their 'risk score'. A corresponding risk matrix is provided in Table 17.7 which is colour coded in order to provide an indication of the critical nature of each risk. As outlined in Section 17.5.1.1, the red zone represents 'high risk scenarios', the amber zone represents 'medium risk scenarios' and the green zone represents 'low risk scenarios'.

Likelihood	5 – V. Likely					
	4 – Likely					
	3 – Unlikely					
	2 – V. Unlikely					
	1 – Ext. Unlikely					
		1 – Minor	2 – Limited	3 – Serious	4 – V. Serious	5 – Catastrophic
Consequence of Impact						

**Table 17.7:** Levels of Significance.

### Construction Phase

None of the potential risks to be noted during the Construction Phase was identified as requiring further assessment.

### Operational Phase

From examining the plausible risks presented in Table 17.6, the scenario with the highest risk score in terms of a major accident and/or disaster was identified as being 'Incident at nearby Kishoge Train Station'.

These risks were both given a score of 5, indicating a scenario that is '**extremely unlikely**' to occur, but which would have '**catastrophic**' consequences for the station and neighbouring development should it do so. According to the risk matrix in Table 17.7, this indicates a '**low risk scenario**'.

The Global Terrorism Index (GTI) is a comprehensive study analysing the impact of terrorism for 163no. countries and which covers 99.7 per cent of the world's population. In 2024, Ireland ranked as the 88<sup>th</sup> country most impacted by terrorism of the 163no. countries. Whilst the National Risk Assessment 2024 has identified the risk to Ireland from both domestic and international terrorism, there are no similar 'recorded incidents or anecdotal evidence' of attacks of this magnitude in Ireland.

### 17.5.2 Do-Nothing Impact

In the event that the Proposed Development does not proceed, the site would remain in its current undeveloped, greenfield state. In absence of an increased number of people residing, working or visiting the site, there would be no increase in the risk of major accidents occurring due to human interaction, should a disaster take place.

### 17.5.3 Cumulative

As outlined in sections 17.5.1.2 and 17.5.1.3 above, no likely risks of a major accident / disaster occurring are identified during the Construction Phase.

A low risk of major accident / disaster is identified during the Operational Phase, in respect of the likelihood of a catastrophic incident occurring at Kishoge Train Station (e.g. major fire/explosion).

No cumulative effects are identified.

### 17.5.4 Proposed Development

#### 17.5.4.1 Construction Phase

The potential risk during the Construction Phase of the Proposed Development is the same as described under 17.5.1.2.

#### 17.5.4.2 Operational Phase

The potential risk during the Operational Phase of the Proposed Development is the same as described under 17.5.1.3.

#### 17.5.4.3 Do-Nothing Impact

The 'do-nothing' impact of the Proposed Development will be the same as described under 17.6.1.

## 17.6 Mitigation Measures (Ameliorative, Remedial or Reductive Measures)

### 17.6.1 Rating of Major Accidents and Disasters Without Mitigation

#### 17.6.1.1 Construction Phase

The mitigation measures relevant to each environmental factor outlined in chapters 5 – 18 of the EIAR, as well as the CEMP, will be implemented during the Construction Phase of the development and will collectively mitigate any risk of major accidents and disasters during this time.

The Construction Phase of the Proposed Development will be carried out in accordance with best practice site management measures relating to health and safety and emergency response. These measures are described in the CEMP.

**17.6.1.2 Operational Phase**

No mitigation or monitoring measures are identified for the proposed development, specific to reducing the risk of major accident / disaster occurring at Kishoge Train Station, during the operational phase.

**17.7 Residual Impact of the Proposed Development**

The risk of a major accident and/or disaster during the Construction Phase of the Proposed Development is considered low.

The risk of a major accident and/or disaster during the Operational Phase of the Proposed Development is considered low.

**17.8 Monitoring**

No monitoring of the proposed development, associated with risks of major accidents and/or disaster, is proposed during Construction or Operational Phases.

**17.9 Reinstatement**

No reinstatement measures are necessary during the Construction or Operational Phases of this development.

**17.10 Difficulties Encountered**

No difficulties were encountered during the assessment process.