

CLONASLEE FLOOD RELIEF SCHEME

Environmental Impact Assessment Report Chapter 19: Risks of Major Accidents or Disasters



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19 RISKS OF MAJOR ACCIDENTS OR DISASTERS

19.1 Introduction

This chapter of the Environmental Impact Assessment Report (EIAR) presents the assessment of the expected effects from risks of major accidents and/or disasters. The assessment is considered under two main scenarios:

- 1. The likelihood and consequence for the Proposed Scheme to cause a major accident and/or natural disaster.
- 2. The likelihood and consequence for the Proposed Scheme to be vulnerable to hazards resulting from a major accident and/or natural disaster.

This chapter has been informed by input from the relevant EIA specialist and their respective discipline chapters of this EIAR.

19.2 Methodology

19.2.1 Legislation

Article 3 of the EIA Directive (as amended) requires the assessment of expected effects of major accidents and/or disasters within EIA. Article 3(2) of the Directive states:

"... the effects referred to in paragraph 1 on the factors set out therein shall 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."

Annex IV (information for the EIAR) of the 2014 EIA Directive requires:

"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."

The 2014 EIA Directive also 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."

The Major Accidents (Seveso III) Directive (2012/18/EU) is an EU Directive that seeks to prevent major industrial accidents involving dangerous substances and to limit the consequences of such accidents on people and the environment. In Ireland, the Chemicals Act (Control of Major Accident Hazards involving Dangerous Substances) Regulations 2015 (S.I. No. 209 of 2015) (the 'Control of Major Accident Hazards Involving Dangerous Substances (COMAH) Regulations'), implements the Seveso III Directive. The directive addresses Seveso sites, where hazardous substances are produced, used or stored. Any Seveso sites in proximity to the Proposed Scheme are considered in **Section 19.2.3**.

19.2.2 Guidance

Consideration has been given to the following relevant policy documents in the preparation of this chapter:

- Guidelines on the information to be contained in Environmental Impact Assessment Reports (EPA, 2022)
- National Risk Assessment for Ireland (2023)
- Laois County Development Plan (2021-2027)
- Laois County Council Major Emergency Plan (2021)

- Laois County Council Climate Action Plan (2024-2029)
- A National Risk Assessment for Ireland 2020 (Department of Defence (DoD), 2021)
- Major Accidents and Disasters in EIA: A Primer (IEMA & ARUP, 2020)
- Government of Ireland draft Protocol 10: Multi-Agency Response to Flood Emergencies September 2021
- Geological Survey Ireland Spatial Resources Database. (Accessed 3rd July 2024)

There is no specific national guidance with regard to the Environmental Impact Assessment (EIA) of major accidents and/or disasters. However, the topic is included in the more general national EIA guidance, notably:

- Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (EPA, 2022) which state: "To address unforeseen or unplanned effects the Directive further requires that the EIAR takes account of the vulnerability of the project to risk of major accidents and/or disasters relevant to the project concerned and that the EIAR therefore explicitly addresses this issue. The extent to which the effects of major accidents and / or disasters are examined in the EIAR should be guided by an assessment of the likelihood of their occurrence (risk)" (section 3.7.3 of EPA, 2022).
- Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (August 2018) which state that there are two key considerations under this requirement, namely:
 - "The potential of the project to cause accidents and/or disasters, including implications for human health, cultural heritage, and the environment.
 - "The vulnerability of the project to potential disasters/accidents, including the risk to the project of both disasters (e.g., flooding) and man-made disasters (e.g., technological disasters)."

The Guidelines also require that an EIAR include: "... the expected effects arising from the vulnerability of the project to risks of major accidents and/or disasters that are relevant to the project. Where appropriate, the description of expected significant effects should include details of the preparedness for and proposed response to such emergencies."

In the absence of a specific approach in national guidance, the approach used to carry out the risk assessment for this EIAR is based on that outlined in the following UK publication:

- Institute of Environmental Management and Assessment (IEMA) Major Accidents and Disasters in EIA: A Primer (IEMA 2020)
- A Framework for Major Emergency Management. Guidance Document, Department of Housing local Government and Heritage (DHLGH, 2021)

19.2.2.1The Laois County Council Climate Action Plan 2024-2029

Laois County Council (LCC) has prepared a Climate Action Plan 2024-2029 (Plan) to create a low carbon and climate resilient County by delivering and promoting high quality practice in climate action at the local level. The aim of the Plan is to set out actions to address the mitigation of greenhouse gases, the implementation of climate change adaption measures, and strengthen the alignment between national climate policy and the delivery of effective local climate action. The commitment by local authorities to monitor, evaluate, and report annually on the implementation of activities contained in their respective local authority CAP provides for more reliable and ambitious climate action, and supports national climate ambitions to 2050.

The climate Actions of the LCC Plan are in a structured format, ensuring alignment between on-the-ground initiatives and the overarching vision the Plan aims to achieve. A total of 114 Actions are categorised into five themes with Theme 2 relating to the Built Environment and Transport, under which flood relief schemes will be delivered and subsequently monitored in the County. Tho objectives of greatest relevance to this assessment are listed in **Table 19-1**.

Th En Tra	eme 2 Built wironment and ansport:	The bui climate efficien	It environment and transportation syste -resilient, with a focus on achieving em cy goals as part of our journey toward a	ems are des issions redu a decarbonis	igned to I uction and sed socie	be d energy ty
No	.Action	Objectiv	e	Tracking Measure	Partners	Timeframe
37	Laois County Council will continue to support (subject to statutory processes and adherence to environmental standards) the development of OPW flood protection schemes in the towns of Mountmellick, Portarlington and Clonaslee; these schemes will make these settlements more resilient to flooding	 E1: 1 prote E4: 1 requin w E6: 1 prote F4: 1 of the chan climation 	To continue to implement approved flood action and drainage measures To continually adapt our baseline maintenance irements in the face of climate driven changes reather patterns. To continue to implement approved flood action and drainage measures. To recognise that some communities or sectors e population may be more impacted by climate age itself or measures introduced to combat ate change	Completion of flood protection scheme.	fOPW	2024-2029
40	Laois County Council will implement the use of a flood and incident recording system, such as WIRE app or similar, to enhance real-time data collection, reporting, and monitoring of flood events and incidents.	 C1: other C7: know relate E4: Trequin we 	To maintain and develop cooperations with r bodies at a local/ regional/ national level To continually develop expertise and vledge within the local authority on climate ed issues. To continually adapt our baseline maintenance irements in the face of climate driven changes eather patterns.	Number of events recorded.	N/A	2024-2029

Table 19-1: Laois County Council Climate Action Plan Objectives pertaining to Flood Relief Implementation

19.2.3 Zone of Influence

The Zone of Influence (ZOI) for Risks of Major Accidents and/ or Disasters encompasses all the ZOI's across the various disciplines within this EIAR.

The consultation distance for Seveso Sites (also known as COMAH establishments), which have potential for major accident hazard under the COMAH Regulations 2015 (S.I. No. 209 of 2015), is 200m from respective Seveso Sites. The nearest Seveso Site is Synergy Health in Tullamore, over 15km from the Proposed Scheme Area and as such, Seveso Sites are not considered further in this assessment.

19.2.4 Key Parameters for Assessment

According to EIA Directive 2014/52/EU, the Proposed Scheme's potential to cause accidents and/or natural disasters focuses on the effect to human health, cultural heritage and the environment. Environmental receptors are identified as those listed within Article 3 of the EIA Directive, namely population and human health, biodiversity (particularly species and habitats protected under the Habitats Directive (92/43/EEC) and Birds Directive (2009/147/EC), land, soil, water, air, climate, material assets, cultural heritage and the landscape.

The likelihood for a major accident or natural disaster to affect the Proposed Scheme or for the Proposed Scheme to result in a major accident or natural disaster, resulting in significant adverse effects on these receptors, is based on the design and activities associated with the construction and operational phases of the Proposed Scheme as described in detail in **Chapter 5: Project Description**.

19.2.5 Assessment Criteria and Significance

This assessment broadly applies the approach set out in Major Accidents and Disasters in EIA: A Primer (IEMA, 2020). Unlike other assessments within the EIAR, the assessment does not deal with likely effects. The scope of this assessment focuses on potential sudden events of low likelihood, which may reasonably occur, resulting in major negative impacts on receptors. This approach directs the assessment to focus on "low likelihood but potentially high consequence events" such as a major spill, explosion, fire etc. Smaller incidents (spills, sediment loss etc.) are addressed elsewhere in this EIAR in the relevant topic chapters. This chapter focuses on major events only.

Additionally, other chapters of the EIAR typically apply the standard definitions provided within the EPA 2022 Guidelines, which describe 'significance' as "...a concept that can have different meanings for different topics." In the context of Major Accidents and Disasters, the understanding of what constitutes a 'significant' effect or impact differs. The IEMA (2020) approach defines a "significant environmental effect" as one which "could include the loss of life, permanent injury and temporary or permanent destruction of an environmental receptor which cannot be restored through minor clean-up and restoration" and this definition has been adopted for the purposes of this assessment.

19.2.5.1 Assessment Methodology

In accordance with the approach presented in the IEMA Primer (IEMA, 2020), this assessment follows three stages (screening, scoping, assessment) as follows:

- Stage 1 Screening: The IEMA Primer (2020) states that "during screening it should be sufficient to identify if a development has a vulnerability to major accidents and / or disasters and to consider whether a development could lead to a significant effect."
- Stage 2 Scoping: Scoping is undertaken to determine in more detail whether there is potential for significant effects as a result of major accidents and/or disasters associated with the Proposed Scheme. If the Proposed Scheme is screened in for the assessment of impacts in relation to major accidents and/or disasters at Stage 1, Stage 2 aims to provide a more detailed determination as to whether there is potential for significant effects.

The IEMA Primer (2020) further states that the assessment of impacts in relation to major accidents and/or disasters may be scoped out if it can be shown that:

- "There is no source-pathway-receptor linkage of a hazard that could trigger a major accident and/or disaster or potential for the scheme to lead to a significant environmental effect"
- "All possible major accidents and/or disasters are adequately covered elsewhere in the assessment or covered by existing design measures or compliance with legislation and best practice."

The Primer further notes that:

"A major accidents and/or disasters assessment will be relevant to some developments more than others, and for many developments it is likely to be scoped out of the assessment".

- Stage 3 Assessment: The assessment stage provides further understanding on the likelihood of a risk event occurring and identifies the requirement for further mitigation. If hazard types are screened in at Stage 2, they are brought forward to Stage 3 for detailed consideration of the potential for significant impacts to occur. The following exercises are carried out in the Stage 3 Assessment:
 - Setting out the baseline: Hazard identification and receptor tagging.
 - Assessment:
 - Identifying reasonable worst-case impact.
 - Selecting the grouped risk events that need further assessment
 - Understanding the likelihood of a risk event occurring
 - Mitigation: Identifying the requirements for secondary mitigation.

19.2.5.2 Risk Classification Approach

Following the steps undertaken in Stage 1 and Stage 2, the potential risk of identified hazards brought forward to the Stage 3 assessment are then evaluated using criteria outlined in **Table 19-2** (likelihood of occurrence),

Table 19-3 (consequence of impact) and **Table 19-4** (risk assessment), which have been adapted from the following:

- EPA (2022) Guidelines on the information to be contained in Environmental Impact Assessment Reports.
- Department of Defence (2023) A National Risk Assessment for Ireland.
- IEMA (2020) Major Accidents and Disasters in EIA: A Primer.

Table 19-2: Classification of National Likelihood Criteria (DOD National Risk Assessment for Ireland 2023)

Rating	Classification	Description
1	Extremely Unlikely	100 or more years between occurrences
2	Very Unlikely	51-100 years between occurrences
3	Unlikely	11-50 years between occurrences
4	Likely	1-10 years between occurrences
5	Very Likely	Ongoing/Less than one year between occurrences

Rating	Classification of Potential Impact (DoD, 2021)	Significance of Effects EPA, 2022)	Description
1	Very Low Impact	Slight	 People: Deaths less than 1 in 250,000 people for population of interest (<20) OR Critical injuries/ illness less than 1 in 250,000 (<20) OR Serious injuries less than 1 in 100,000 (<51) OR Minor injuries only Environment: Simple, localised contamination. Economic: Up to 1% of Annual Budget, <€0.9bn. Essential Services: Very low disruption to the delivery of services essential for the maintenance of vital societal functions or economic activities. Social: Limited disruption to community.
2	Low Impact	Moderate	 People: Deaths greater than 1 in 250,000 people for population of interest (>20) OR Critical injuries/illness greater than 1 in 250,000 (>20) OR Serious injuries greater than 1 in 1 100,000 (>51). Environment: Simple, regional contamination, effects of short duration. Economic: Greater than 1% of Annual Budget, >€0.9bn. Essential Services: Low disruption to the delivery of services essential for the maintenance of vital societal functions or economic activities Social: Community is functioning with considerable incomponents.
3	Moderate	Significant	 People: Deaths greater than 1 in 100,000 people for population of interest (>51) OR Critical injuries/illness greater than 1 in 100,000 (>51) OR Serious injuries greater than 1 in 40,000 (>128). Environment: Heavy contamination, localised effects of extended duration. Economic: Greater than 2% of Annual Budget, >€1.8bn. Essential Services: Low disruption to the delivery of services essential for the maintenance of vital societal functions or economic activities Social: Community only partially functioning
4	High Impact	Very Significant	 People: Deaths greater than 1 in 40,000 people for population of interest (>128) OR Critical injuries/illness greater than 1 in 40,000 (>128) OR Serious injuries greater than 1 in 20,000 (>255). Environment: Heavy contamination, widespread effects of extended duration. Economic: Greater than 4% of Annual Budget >€3.6bn. Essential Services: High disruption to the delivery of services essential for the maintenance of vital societal functions or economic activities Social: Community functioning poorly.
5	Very High Impact	Profound	 People: Deaths greater than 1 in 20,000 people for population of interest (>255) OR Critical injuries/illness greater than 1 in 20,000 (>255). Environment: Very heavy contamination, widespread effects of extended duration. Economic: Greater than 8% of Annual Budget, >€7.3bn. Essential Services: Loss of delivery of services essential for the maintenance of vital societal functions or economic activities. Social: Community unable to function without significant support

Table 19-3: Classification of National Impact Criteria (DOD National Risk Assessment for Ireland 2023)

Hazards scoped in at Stage 2 are evaluated and categorised using a risk matrix, developed using the approach and information outlined in both the national risk assessment documents, provisions outlined in the IEMA Primer, and the EPA Guidelines. This matrix is used to determine the level of significance of each risk for each hazard scenario.

Risks have been grouped in three categories outlined in **Table 19-4**; red refers to 'High Risk' scenarios that have an assessment score between 15 and 25, orange refers to 'Medium Risk' scenarios that score between 8 and 12, and green refers to 'Low Risk' scenarios scoring between 1 and 6.

Table 19-4: Risk Matrix

	Consequences of Impacts							
		1- Slight	2-Moderate	3-Significant	4-Very Significant	5-Profound		
Likelihood	5-Very Likely	5	10	15	20	25		
	4-Likely	4	8	12	16	20		
	3-Unlikely	3	6	9	12	15		
	2-Very Unlikely	2	4	6	8	10		
	1-Extremely Unlikely	1	2	3	4	5		

19.2.6 Consultations

An EIA scoping report was issued to approx. 50 no. stakeholders including the HSE and HSA on several occasions between February 2021 to June 2024; however, no response was received to date from either stakeholder. Refer to **Chapter 3 Consultation** for details of all scoping responses received and public engagement undertaken to date.

19.3 Risk Assessment

19.3.1 Stage 1: Screening

The Proposed Scheme has been screened in for the consideration of major accidents and/or disasters. This is based on the nature of the Proposed Scheme, the construction and operational activities, and the sensitivity of the receiving environment. It is conceivable (although highly unlikely) that:

- The Proposed Scheme could result in a major accident and/or disaster.
- The Proposed Scheme could interact with other (non-scheme related) sources of hazards or events that could conceivably make it vulnerable to a major accident and/or disaster.
- Should an external (non-scheme related) major accident and/or disaster occur, the Proposed Scheme could conceivably exacerbate the risk of significant (negative) impacts associated with same.

19.3.2 Stage 2: Scoping

A scoping exercise was undertaken to determine where there was potential for significant effects as a result of major accidents and/or disasters associated with the Proposed Scheme. As a starting point, the broad categories in the National Risk Assessment for Ireland 2021/2022 were considered (including strategic headings of transportation, technical, natural/ environmental, geopolitical and social/ economic), along with scheme-specific risks and hazards noted throughout the specialist Chapters in the EIAR. Based on the long list of categories and events identified, a number were scoped out for the following reasons:

a. There is no potential for the Proposed Scheme to cause a significant environmental impact from the specific event type in question.

- b. There is sufficient mitigation considered through design and/or there is recognised design standards which have been applied to the design element to consider the hazard not significant.
- c. Hazards without a relevant environmental receptor were discounted as they lacked a source-pathwayreceptor linkage.
- d. The hazard was otherwise assessed within relevant sections of the EIAR and/or associated documentation.

Hazards considered to have potential significant environmental impact, with a source-pathway-receptor linkage to an environmental receptor were carried to Stage 3 – Assessment.

Table 19-5 and **Table 19-6** identifies the potential sources of hazard for the Proposed Scheme at construction and operation phase respectively. The hazards that have potential to give rise to major accidents and disasters from or to the Proposed Scheme, are scoped in for Stage 3 – Assessment.

19.3.3 Stage 3 - Assessment

The Stage 3 assessment involves a more detailed appraisal of the shortlisted major events or hazards identified and assessed during Stage 2 Scoping. The shortlist and assessment of those events and/or hazards scoped in for Stage 3 are presented in **Table 19-7**. Events and hazards are assessed based on their likelihood and impact and resulting level of significance, and scored and ranked as Low, Medium or High (based on the process outlined in **Section 19.2.5**).

Hazard Type **Scoping Assessment Potential Receptor Scoping Outcome** Transportation **Major Construction Road** The risk to/from the Proposed Scheme to cause a major . Traffic & Scoped Out for Further Assessment - Works considered Traffic Accident road traffic accident in Clonaslee or along haulage Transportation small in scale thus additional vehicles required for the routes during the construction phase as a result of construction of the Proposed Scheme is low impact and Population • increased levels of construction traffic and HGVs is low. extremely unlikely for the Proposed Scheme to contribute Human Health to a major Construction Road Traffic Accident. The Proposed Scheme included a Construction Traffic Management Plan to minimise local traffic disruption and to ensure safe practises are in place e.g., temporary traffic lights/stop go systems and manned egress/access of Heavy Goods Vehicles to and from construction sites. N/A Rail, Aviation, Ferries, N/A Scoped Out for Further Assessment- not applicable to this **Boat River Cruises** location Economic Fiscal N/A N/A N/A Impact on Critical Utilities/ Works will be required both directly to, and in the vicinity • Utilities (water, waste, Scoped in for Further Assessment – There is the potential Infrastructure of, existing utilities including water abstraction locations. communications. to directly impact utilities within the Scheme Area during the The Proposed Scheme includes for temporary local electricity) construction phase. service diversions: Human Health • There is a risk from the Proposed Scheme to cause damage to critical Infrastructure (existing overground and underground utilities) during the construction phase, notably water mains, electricity and telecommunications. This could lead to interruption of critical services, contamination of drinking water, or potential fatalities. There is a risk to the Proposed Scheme from the ٠ presence of utilities during site clearance and earthworks, where underground and overhead electricity cables may be encountered. Consultation with service providers is ongoing. There is a risk that the Proposed Scheme could impact on the ICW Waste Water Treatment infrastructure including sewage network due to the

Table 19-5: Stage 2 – Scoping Assessment for Major Accidents and/or Disasters: Construction Phase

proximity of works to this infrastructure.

Hazard Type	Scoping Assessment	Potential Receptor	Scoping Outcome
Accidents at Seveso Sites/ COMAH Establishments	There are no Seveso sites within proximity to the Proposed Scheme.	 Population Human Health Biodiversity	Scoped Out for Further Assessment – No pathway for potential accidents and /or disasters. Likelihood is deemed as Extremely Unlikely and would have a very low impact.
Geological Hazard			
Earthworks Failure/ Slope Instability	The landslide susceptibility of the majority of Area 1, Area 2 and Area 3 is classified as "Low" (inferred), with a sma portion of lands located 800m west of Area 2 classified as "Moderate" and "High" landslide susceptibility. There are no seismic events recorded by the Irish National Seismic Network within a 2km radius of the Study Area. The closest recorded seismic event is recorded at approx. 90km north-east at Enfield (Ref.: dias1983rvxj; 8 magnitude earthquake event on the Richter scale of measurement on the 11th September 1983 (INSN, 2023)	 a Biodiversity I Land, Soil and Hydrogeology Water 	Scoped Out for Further Assessment - The overall potential for occurrence of geohazards within the study area is considered to be unlikely to extremely unlikely with a low to very low impact .
Collapse/ Damage to Structures	 The Proposed Scheme is not considered vulnerable from embankment, flood wall or debris trap collapse which could have the potential to damage existing structures/ utilities, to cause injury to construction workers or lead to environmental damage to biodiversity and water quality. There is a risk to the Proposed Scheme from other (external) sources or activity to cause collapse/ damage to structures associated with the Proposed Scheme during the construction phase e.g., traffic collision with reinforced all on Chapel St. 	 Human Health Population Material Assets: Waste and Utilities Biodiversity Water 	Scoped Out for Further Assessment - Best practice construction methodology will ensure a collapse or failure of infrastructure is extremely unlikely with a low impact result in an unlikely event of failure. The likelihood of a collision with the reinforced wall causing failure is extremely unlikely due to the fact that the original wall will remain inside the reinforced stonework and the best practise methodologies used during construction. Regular maintenance and inspection of flood infrastructure will be undertaken through its lifespan.
Meteorological Risk			
Extreme Weather – Flood Events and storm surges; extreme cold weather- snow and ice.	 There is a risk of flood defence failure and the inherent residual risk if an event greater than the Target Standard of Protection (SoP) occurs. There is a potential risk to the safety of construction site workers and plant/construction equipment during the construction phase if an extreme weather event occurred. The Proposed Scheme is not considered vulnerable to cold weather events during construction. 	 Human Health Population Material Assets: Waste and Utilities Biodiversity Water 	 Scoped in for Further Assessment – The Proposed Scheme does not require the removal of existing flood defence measures during the construction phase. The Proposed Scheme adds new flood measures and reinforces existing structures that act as de facto flood defences e.g., Chapel St wall. The appointed Contractor must have a Flood Warning Action Plan in place prior to commencing works. Upon a flood warning being issued by Met Éireann all plant and equipment will be removed from the channel and any excavations backfilled and compacted to replicate the conditions prior to the works. Note excavated material will be side casted within the red line boundary or

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Hazard Type	Scoping Assessment	Potential Receptor	Scoping Outcome
			 transported to nearby storage areas within compounds (adjacent/within 200m of works area). The following measures will be implemented during the Construction Phase to reduce the increased risk of flooding during construction: Monitoring of weather events during the construction and operational phases
			 Completion of the works in short sections to minimise flood risk. With these measures in place, the likelihood of a major flood to cause a major accident and/or disaster is deemed as extremely unlikely and would have a very low, localised impact.
Contamination			
Release of Pollutants into Surface and Groundwater Bodies, Water Supplies and Sensitive Ecological Receptors	Works near water pose a risk to the environment, namely from accidental spillage or release of contaminated materials. The Public Supply Source Protection Area of the Tullamore South and Clonaslee Public Water Supply (PWS) is mapped within the southern portion of the Study Area including Area 1- Brittas Woods and Area 2- Chapel St. The environment would be sensitive to accidental spill due to the human health and ecological impacts.	 Human Health Biodiversity Land, Soil and Hydrogeology Water 	Scoped Out for Further Assessment: With the implementation of the mitigation measures pertaining to run off, contamination, fuel bunding and storage as detailed in Chapter 10: Land Soil, Geology and Hydrogeology and Chapter 11: Water), the potential for contamination through pollution is considered to be unlikely to extremely unlikely with a low to very low impact.
Epidemic and Pandemic Ac	cidents; Food Situation Crisis; Geopolitical; Social Ris	sk; Cybersecurity	
N/A	N/A	N/A	N/A

Table 19-6: Stage 2 – Scoping Assessment for Major Accidents and/or Disasters: Operational Phase						
Hazard Type	Scoping Assessment	Potential Receptor	Scoping Outcome			
Transportation						
Major Construction Road Traffic Accident	 Maintenance activities will not cause significant increases to traffic volume. The Proposed Scheme is not considered vulnerable to traffic flow or accidents during the Operational Phase 	Traffic and TransportationHuman Health	Scoped Out for Further Assessment – No discernible change to the current baseline during the operational phase; potential for accidents Scheme related traffic accidents is considered to be extremely unlikely with a very low impact .			
Economic						
Impact on Critical Utilities / Infrastructure	There is considered to be no risk from the Proposed Scheme in terms of impacts to critical utilities / infrastructure during the operational phase.	 Population Material Assets: Waste & Utilities 	 Scoped Out for Further Assessment– A protective concrete slab over the Uisce Éireann infrastructure is incorporated into the embankment design in Area 1 to ensure structural integrity of the water supply pipe during the operational phase. Any and all temporary diversions to utilities during the construction phase will have been reinstated for the operational phase and will not be required during the operational phase. If, under exceptional and limited circumstances, temporary diversions are required for maintenance, agreements will be sought will all utility providers prior to any works. 			
Accidents at Seveso Sites / COMAH Establishments	• There are no Seveso sites within proximity to the Proposed Scheme.	 Population Human Health Biodiversity	Scoped Out for Further Assessment – No pathway for potential accidents and /or disasters. Likelihood is deemed as Extremely Unlikely and would have a very low impact.			
Geological Hazard						
Earthworks Failure/ Slope Instability	• As discussed in Table 19-4 , the landslide susceptibility of the majority of the Scheme Area is low with a lack of seismic events recorded in or near the Scheme Area. The nature of the works during the maintenance phase (inspections, repairs, removal of debris, vegetation and vermin control), requires little to low earthworks.	BiodiversityLand, Soil and HydrogeologyWater	Scoped Out for Further Assessment - The overall potential for occurrence of geohazards within the Scheme Area during the operational phase is considered to be unlikely to extremely unlikely with a low to very low impact .			
Collapse / Damage to Structures	• The Proposed Scheme is not considered vulnerable from embankment, flood wall or debris trap collapse which could have the potential to damage existing structures/ utilities, cause injury to maintenance works or residents or to lead to environmental damage to biodiversity and water quality.	Human HealthPopulationBiodiversityWater Quality	Scoped Out for Further Assessment - The flood defences have been designed in line with all relevant design standards. Regular inspections and repairs will be conducted as and when required. See section 5.6 for details on operational phase activities and frequency.			

Hazard Type Scoping Assessment **Potential Receptor Scoping Outcome** The Proposed Scheme is not considered vulnerable • to damage/ failure from influences outside the Proposed Scheme. **Meteorological Risk** The aim of the Proposed Scheme is to protect the Extreme Weather – Flood • Water Scoped Out for Further Assessment - The Proposed • community of Clonaslee from flooding. All selected Events and storm surges; Scheme will reduce the potential for future flood events in Population defences are required to deliver a Target Standard extreme cold weatherthe area. The design of the Proposed Scheme is adaptable Human Health of Protection (SoP) for the 1% Annual Exceedance ٠ snow and ice to High-End Future Scenario predicted flood events. Probability (AEP) rainfall event. The design life of • Biodiversitv the Proposed Scheme is 100 years. The Material Assets implementation of the Proposed Scheme will result in the creation of a Benefitting Area within which 72 residential properties and 2 commercial properties will be protected from future flood events There is a risk to the Proposed Scheme to be impacted from storm / floods which may damage the defence infrastructure resulting in flooding. Contamination The operational phase will require regular visual Release of Pollutants into • Scoped Out for Further Assessment: The potential for Human Health inspections, repairs, debris removal, vegetation release of pollutants during the operational phase is Surface and Groundwater Biodiversity control. Groundworks and/or instream works are not **Bodies, Water Supplies** considered to be very unlikely with a low impact. Land. Soil and anticipated. and Sensitive Ecological Hydrogeology There is considered to be no risk from the Proposed Receptors Scheme in terms of release of pollutants during Water operational phase. Epidemic and Pandemic Accidents; Food Situation Crisis; Geopolitical; Social Risk; Cybersecurity N/A N/A N/A • N/A

Table 19-7: Stage 3 - Assessment of Major Accidents and/or Disasters- Construction Phase

Hazard Type	Source and/or	Reasonable worst consequence if event did occur	Mitigation	Risk Eva	aluation	Risk Score
	Linkage			Classification of National Likelihood Criteria (Refer to Table 20-1)	Classification of National Impact Criteria (Refer to Table 20-2)	High Risk 15 to 25 Med Risk 8 to 12 Low Risk 1 to 6 (Refer to Table 20-3)
Impact on Critical Utilities/ Infrastructure	Works/machine passings near/under ESB overhead lines.	Local power loss temporarily. Potential health and safety risk to construction workers and locals in area should interaction with power lines	Best practise measures such as goal post erection, signage, tool box talks, pre- construction GPR, will be implemented during construction phase. Refer to Section 15-5 of Chapter 15 Material Assets: Waste and Utilities for the full suite of mitigation measures.	2. Very Unlikely	2. Low Impact	4. Low Risk
			Best practise health and safety measures will be in place during the construction phase. Refer to Section 15-5 of Chapter 15 Material Assets: Waste and Utilities and Section 8-5 Human Health for the full suite of mitigation measures.			
	Works near water mains and foul sewers.	Potential damage to water and sewer infrastructure resulting in contamination to local water supply resulting in human health impacts and ecological damage.	The location and depth of these pipelines will be confirmed by slit trenching prior to detailed design. A 'Build over Agreement' with Uisce Éireann will be in place to ensure all parties are satisfied that the wastewater assets are protected <i>in-situ</i> and allowances and contingencies are in place for potential future upgrades. Refer to Section 15-5 of Chapter 15 Material Assets: Waste and Utilities for the full suite of mitigation measures.			
	Works near communication providers.	Local communication loss with providers.	Data requests from utility providers have identified the following underground services in the Chapel Street roadway. These have been verified by GPR survey. A on their location and level will be gained by slit trenching prior to completion of detailed design Refer to Section 15-5 of Chapter 15 Material Assets: Waste and Utilities for the full suite of mitigation measures.			

19.4 Assessment of Impacts

Due to the nature and scale of the Proposed Scheme combined with best practise measures and detailed mitigation and monitoring measures (refer to the supporting Construction Environment Management Plan (CEMP), Section 15-5 of Chapter 15 Material Assets: Waste and Utilities, Section 8-5 Human Health and Chapter 20: Schedule of Environmental Commitments), it is considered that the likelihood of a Major Accident or Natural Disaster occurring from or to, the Proposed Scheme, is very unlikely with a low risk of occurrence.

19.5 Residual Effects

The risk of a major accident and/or disaster during the construction of the Proposed Scheme is considered 'low' in accordance with the 'Guide to Risk Assessment in Major Emergency Management' (DoEHLG, 2010). When the above mitigation is implemented, and all mitigation detailed in the EIAR is implemented, the residual effect(s) associated with the construction, operation and maintenance of the Proposed Scheme are not significant.

19.6 Monitoring

Please refer to **Chapter 20: Schedule of Environmental Commitments** which details all proposed mitigation and monitoring measures for the construction, operation and maintenance of the of the Proposed Scheme.

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

19.7 Cumulative Impact Assessment

A search in relation to plans and projects that may have the potential to result in a cumulative impact with the Proposed Scheme on the environment was carried out as part of the EIAR. The Proposed Scheme has been considered in combination with existing, permitted and proposed projects and plans as set out in **Chapter 18 Interactions and Cumulative Effects** of this EIAR. Following a detailed assessment of the potential for any further impact when considered in combination with any or all the plans and projects, the Proposed Scheme, with mitigation measures in place, is found to have no potential for significant in-combination or cumulative effects on the environment brought about by major accidents or natural disasters. This is based on the low risk associated with the Proposed Scheme as described in this Chapter and a review of the nature of the surrounding land uses and projects existing or intended in the surrounding area.

19.8 Chapter References

- Department of Housing local Government and Heritage (2021). A Framework for Major Emergency Management. Guidance Document.
- Department of Defence (2023) National Risk Assessment for Ireland: Overview of Strategic Risks.
- Department of Defence (2021). A National Risk Assessment for Ireland.
- Department of Environment, Heritage and Local Government (2010). A Guide to Risk Assessment in Major Emergency Management.
- Environmental Protection Agency (2022) Guidelines on the Information to be Contained in Environmental Impact Assessment Reports. EPA, Wexford.
- European Union (2014). Directive 2014/52/EU of the European Parliament and of the Council of 16 April 2014 amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment.

- European Union (2012). Directive 2012/18/EU of the European Parliament and of the Council of 4 July 2012 on the control of major-accident hazards involving dangerous substances, amending and subsequently repealing Council Directive 96/82/EC)
- Government of Ireland (2024) A framework for major emergency management: Guidance Document 11 A Guide to Flood Emergencies
- Government of Ireland (2021) draft Protocol 10: Multi-Agency Response to Flood Emergencies September 2021.
- Geological Survey Ireland Spatial Resources Database. (Accessed 3rd July 2024).
- Institute of Environmental Management and Assessment (IEMA) Major Accidents and Disasters in EIA: A Primer (IEMA 2020).
- Laois County Council Development Plan (2021-2027).
- Laois County Council Major Emergency Plan (2021).
- Laois County Council's Climate Action Strategy (2024-2029).