

Chapter 17 Interrelationships, Major Accidents and Cumulative Effects

17.1 Introduction

In addition to the assessment of impacts on individual topics presented in the previous chapters of this Environmental Impact Assessment Report (EIAR), the interactions between these factors have also been considered and are presented in Table 17.1. This chapter also assesses the expected effects arising from the vulnerability of the project to risks of major accidents and/or disasters that are relevant to the project. Finally, the cumulative effects of the proposed development with those of previous developments, current development in planning and proposed future developments which are reasonably foreseeable have also been assessed and are described in this chapter. Potential transboundary impacts are also assessed.

17.2 Methodology

17.2.1 Interrelationships

The determination of interrelationships was facilitated through an iterative design process that included consultation between designers, environmental specialists and technical specialists. In addition, the process was informed by consultation with statutory and non-statutory consultees and in particular with the Department of Culture, Heritage and the Gaeltacht (the National Monuments Service and National Parks and Wildlife Service). Where potential exists for interaction between two or more environmental topics, the relevant specialists have taken these into account when making their assessment and, where possible, complimentary mitigation measures have been proposed. The findings from this assessment are presented in Section 17.3.

17.2.2 Major Accidents and Disasters

Article 3 of the Environmental Impact Assessment (EIA) Directive, as amended by Directive 2014/52/EU, requires that: *“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”*. Furthermore, Annex IV, Section 8 of the 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 disasters which are relevant to the project concerned.”

The Directive also states that 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.”

This chapter comprises an assessment of the vulnerability of the proposed development to risks of major accidents and/or disasters which are relevant to the proposed development.

The assessment of major accidents and disasters is a new requirement and national guidelines are not yet available. In the absence of such guidance, Highways England's (equivalent body to Transport Infrastructure Ireland (TII)) guidance has been consulted.

As identified in the EIAR chapters, the proposed development is designed, and will be built and operated, in accordance with best practice. It has been ensured that the proposed development is capable of being constructed safely and without risk to health, can be maintained safely, and complies with all relevant health and safety legislation.

An understanding of the potential consequences of major accidents and disasters due to the proposed development was gained through a desktop study, the results of which are discussed in Section 17.4.

In assessing the expected effects arising from the vulnerability of the project to risks of major accidents and disasters that are relevant to the project, the assessment has assessed:

- The potential of the project to cause major accidents and disasters, including implications for human health, cultural heritage, and the environment; and
- The vulnerability of the project to potential accidents and disasters, including the risk to the project of both natural disasters (e.g. flooding) and man-made disasters (e.g. technological disasters).

The methodology adopted included three main stages, as follows:

- Stage 1: a long list of all possible major accident and disaster events was developed. This list drew upon a variety of sources, including the UK Government's Risk Register of Civil Emergencies. Major events with little relevance (for example volcanic eruptions) were not included. Stage 1 also included an initial review of potential receptors to identify any groups that were considered necessary to include in the assessment;
- Stage 2: a screening exercise was undertaken to review the long list of major events and to give consideration to their relevance to the proposed scheme, and therefore whether they should be included on the project specific short list of events requiring further consideration; and
- Stage 3: where further design mitigation is unable to remove the potential interaction between a major accident and disaster event and a particular topic, the relevant EIAR chapter identifies the potential consequence for receptors covered by the topic and gives a qualitative evaluation of the potential for the significance of the reported effect to be increased as a result of that event.

The qualitative evaluation of the potential for the significance is presented in Table 17.2 of this chapter. The residual assessment is based on the exceptionality of the major accident and disaster event to the proposed development and whether there is a significant effect after the application of mitigation.

17.2.3 Cumulative Effects

In assessing cumulative effects, the following were the principal sources consulted:

- An Bord Pleanála website;
- Cork County Council Planning Department; and
- EIA Portal.

Development objectives in the relevant current development plans were also considered. This cumulative assessment has considered cumulative impacts that are:

- a) Likely;
- b) Significant; and

- c) Relating to an event which has either occurred or is reasonably foreseeable together with the impacts from this development.

Proposed and existing developments and plans, identified as having potential for cumulative effects in combination with the proposed development, are assessed in Section 17.5 of this chapter.

17.3 Interrelationships

Interrelationships arise from the interaction between the impacts and proposed mitigation for one discipline with another associated discipline. An example of this would be the provision of noise barriers to mitigate the impacts of noise on the surrounding environment could have a negative impact in terms of landscape and visual impact.

The impacts and the mitigation provided has been considered by all disciplines to ensure all the interactions have been fully considered within this EIAR.

Table 17.1 shows the principal interrelationships identified for the proposed development and they are described in this section.

Table 17.1 Matrix of Key Interrelationships

Receptor / Activity	Traffic and Transport	Human and Population Health	Biodiversity	Soils and Geology	Hydrogeology	Hydrology	Landscape and Visual	Noise and Vibration	Air Quality and Climate	Archaeology and Cultural Heritage	Architectural Heritage	Material Assets and Land
Traffic and Transport	✓	✓	✓			✓	✓	✓	✓			✓
Population and Human Health	✓	✓	✓									
Biodiversity		✓	✓	✓			✓	✓				✓
Soils and Geology	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓
Hydrogeology					✓							
Hydrology		✓	✓			✓	✓					✓
Landscape and Visual		✓	✓				✓			✓		✓
Noise and Vibration		✓	✓				✓	✓				✓
Air Quality and Climate		✓	✓						✓			✓
Archaeology and Cultural Heritage		✓								✓		
Architectural Heritage											✓	
Material Assets and Land	✓	✓			✓	✓	✓					✓

17.3.1 Traffic and Transport Will Interact / Interrelate with the Following:

Population and Human Health

During the construction stage, the construction traffic will result in heavy goods vehicles (HGVs) transporting materials and plant/machinery along the R572 Regional Road. This is likely to have an impact on local residents and road users as well as visitors, adding to the noise and vibration, air quality and visual impacts. A Traffic Management Plan (TMP) will be implemented during the construction stage to facilitate

ongoing access to the existing cable car throughout the construction phase, as far as is practicable.

Operation stage traffic will also interact with population on R572 including residents and road users. The visitor numbers to the Dursey Island cableway are likely to increase at peak times due to the increased capacity of the cableway and the car parking areas, increasing the volume of traffic along the R572. A Visitor Management Plan will be implemented to control the visitor numbers during peak times and to ensure a more evenly spread of visitors throughout the season, reducing the impact on local residents and road users. Additionally, the upgrades to a portion of the R572 will have a positive impact on both visitors and locals by easing the existing congestion problems.

Biodiversity

The impact of construction traffic and construction machinery required have been assessed in Chapter 07 Biodiversity for their impact on the biodiversity within Beara Peninsula and the surrounding European and nationally designated sites. Air quality and dust emissions as a result of construction traffic and the potential for interactions with designated sites have also been assessed in Chapter 13 Air Quality and Climate. Air quality mitigation measures including a Dust Minimisation Plan, will reduce impacts on the biodiversity of the area as a result of construction traffic.

Hydrology

As a result of the provision of the proposed development, there is a risk to water quality through pollution and spillage accident risk. Best practice guidelines will be adhered to during the construction and operation phases to minimise the risk of spillage and pollution.

Landscape and Visual

The increase in construction traffic related to piling rigs, cranes and other plant and machinery will result in temporary negative visual impacts. These impacts will be mitigated through the use of high-quality hoarding around the construction site. During operation, more organised car parking arrangement and will represent positive landscape and visual impacts.

Noise and Vibration

Noise and vibration levels will increase as a result of construction traffic along the R572. Mitigation measures, as well as compliance with measures outlined in the Outline Construction Environmental Management Plan (CEMP) in Appendix 4.1 of this EIAR, will be put in place during construction to reduce the short-term noise impacts of construction traffic.

Operation stage traffic will increase noise and vibration levels within the surrounding area. The increased volume of traffic is anticipated due to the provision of greater capacity car parking areas and cableway. The assessment of the impacts on noise and vibration levels is detailed in Chapter 12 Noise and Vibration of this EIAR and has taken into account the predicted traffic levels modelled for operation stage.

Air Quality and Climate

Air pollutant emissions will also increase during the construction stage as a result of construction traffic. Mitigation measures such as a Dust Minimisation Plan have been developed and are presented in Chapter 13 Air Quality and Climate of this EIAR to mitigate potential short-term air quality impacts from construction traffic.

The increase in operation stage traffic levels from increased number of visitors entering and exiting the Dursey Island cableway site will result in an increase in air quality emissions within the project location and its surrounding area. The assessment of the impacts on air quality and climate is detailed in Chapter 13 Air Quality and Climate and has taken into account the predicted traffic levels modelled for operation stage.

Material Assets and Land

The construction stage of the proposed development will include an upgrade to a portion of the R572. Short term impacts on local users and visitors will arise due to these road works. The impact of this on road users is addressed in Chapter 16 Material Assets and Land.

During the operation phase, the upgraded portion of the R572 is likely to alleviate current congestion along the route and to anticipate for volumes of traffic generated by the proposed development. The impact has been addressed in Chapter 5 Traffic Analysis and Chapter 16 Material Assets and Land. The impact of this requirement on the demand for parking within the area has been addressed in Chapter 5 Traffic Analysis and Chapter 16 Material Assets and Land.

17.3.2 Population and Human Health Will Interact / Interrelate with the Following:

Traffic and Transport

The construction stage of the proposed development will increase traffic along the R752 due to the haulage of materials in and out of site. The impact of these traffic movements has been incorporated in the traffic assessment in Chapter 5 of this EIAR.

The anticipated increase in visitor numbers to the proposed development are likely to increase traffic volumes during peak times and will likely impact the local residents and road users. The online booking system will be implemented to ensure a more even spread of visitors throughout the day and will thus ease congestion along the R572 during peak times.

Biodiversity

Increased visitors to the site during operation will alter the existing setting of the site and will result in potential impacts on the receiving biodiversity environment. Appropriate mitigation will be implemented to ensure that the increase in visitor numbers will not result in impacts on biodiversity. Impacts on the biodiversity of the site are discussed in Chapter 7 Biodiversity of this EIAR.

17.3.3 Biodiversity Will Interact / Interrelate with the Following:

Population and Human Health

The removal of Invasive Alien Species (IAS) from the site will remove the risk of spreading of IAS in its current state by population and human beings visiting the site during both construction and operation stages. Therefore, the resultant risk of damage to nearby properties and infrastructure will be removed and the site will be more appealing to the population. An Invasive Species Management Plan is in place at the site and is presented in Appendix 7.4 of this EIAR.

Soils and Geology

The removal of IAS from the site will improve the soil quality and remove the risk of IAS spreading across the site.

Landscape and Visual

The existing biodiversity and coastal character of the site has been incorporated into the Landscape Design Statement for the site which is included in Appendix 4.6 of this EIAR. Planting species that can withstand the harsh maritime environment have been selected to be included within the landscape plan to ensure the robust landscape plan compliments the site's unique location on the water.

Noise and Vibration

It is expected that biodiversity will reduce noise and vibration impacts as the sensitivity of migratory fish to noise and vibration impacts has resulted in the implementation of noise and vibration mitigation measures. For example, reduced working hours for piling operations are required to reduce noise and vibration impacts on migratory fish.

Material Assets and Land

The removal of IAS will remove the threat of spread to neighbouring properties. The presence of IAS can devalue and degrade properties and land. An Invasive Species Management Plan will be put in place at the site and is presented in Appendix 7.4 of this EIAR.

17.3.4 Soils and Geology Will Interact / Interrelate with the Following:

Traffic and Transport

During the construction stage of the proposed development, the construction traffic will be generated from earthworks which will involve import of infill material as well as export of waste material off site. The construction traffic for the earthworks station of construction has been assessed in Chapter 5 Traffic and Transport and will not create significant impacts.

Population and Human Health

The excavation of soil and rock from the foundation and parking footprint will create slight temporary negative impact related to noise and dust generation to visitors to the site. As the excavated rock will be substantially reused on site and minimal volume of fill will be required to be brought in, there will be no impact to human health generated by the construction activities or construction traffic. The ground investigation showed no areas of contaminated land, therefore there is no predicted impact from the contaminated ground to either construction workers or members of public.

During the construction stage, construction traffic will arise due to earthworks which is required to transport material in and out of site. These transportation and excavation of material movements are likely to result in short-term/momentary traffic impacts to local residents, road users and visitors over the short term.

Biodiversity

Earthworks during the construction stage have the potential to impact on the Kenmare River Special Area of Conservation (SAC) and the Beara Peninsula Special Protection Area (SPA) through construction site runoff, the risk of release of contaminants from the ground, noise and vibration, and air quality impacts. A suite of best practice techniques, mitigation measures and guidelines have been outlined in Chapter 09 Hydrogeology, Chapter 10 Hydrology, Chapter 07 Biodiversity and the Outline CEMP and Environmental Operating Plan (EOP) presented in Appendices 4.1 and 4.2 of this EIAR to mitigate impacts on the European and nationally designated sites within the site of the proposed development and the surrounding area.

Hydrogeology

During earthworks have the potential to release contaminants to the surface which is discussed in Chapter 09 Hydrogeology of this EIAR.

Hydrology

During construction stage, earthworks within and alongside surface waters can have an impact on the water quality of watercourses. The source of contamination may be elevated silt/sediment loading in construction site runoff. A suite of mitigation measures has been proposed to mitigate water quality impacts due to earthworks, as contained in Chapter 7 Biodiversity, Chapter 10 Hydrology and within the Outline CEMP presented in Appendix 4.1 of this EIAR.

Landscape and Visual

Earthworks during construction stage will have an impact on the landscape of the site. The landscape is of high importance however, any landscape and visual impact due to earthworks and the movement of material will be short term and hoarding will be provided during construction to mitigate impacts the effect will be short term. Additionally, as the majority of the construction activities will be undertaken during off peak visitor times, the impact on visitors is likely to not be significant. Landscape and visual effects have been assessed in Chapter 11 Landscape and Visual Analysis of this EIAR.

Noise and Vibration

During construction stage, the construction machinery required for earthworks will potentially have short term impacts on noise and vibration. The noise modelling for earthworks have been included in the assessment and mitigation measures are outlined in Chapter 12 Noise and Vibration and in the Outline CEMP. The mitigation measures will mitigate noise and vibration impacts due to earthworks as well as impacts associated with movement of construction materials where possible.

Air Quality and Climate

Earthworks and the movement of construction materials during construction stage have the potential to create airborne dust. A Dust Minimisation Plan is presented in Appendix 13.2 of this EIAR and aims to mitigate this short term potential impact.

Archaeological and Cultural Heritage

Two cultural heritage assets will be directly impacted by the earthworks during construction stage of the proposed development; (a) Dursey Island Cable Car and associated infrastructure, and (b) the site of a vernacular structure. Mitigation measures to reduce the impact from earthworks are outlined in Chapter 14 Archaeology and Cultural Heritage of this EIAR.

Material Assets and Land

Earthworks during the construction stage have the potential to impact the visitor numbers, and consequently the local economy. However, the impact will be short term and earthworks will be carried out during off peak visiting times. The potential impacts and mitigation measures are outlined in Chapter 16 Material Assets and Land and within the Outline CEMP attached as Appendix 4.1 of this EIAR.

17.3.5 Hydrology Will Interact / Interrelate with the Following:

Population and Human Health

The upgraded water drainage system and water treatment system as well as telecommunications (on mainland side only) will have a positive impact on the visitors of the proposed development during operation. The SuDS features will mitigate any potential impacts relating to changes in runoff rates and volumes whilst also maintaining quality of water in vicinity of Dursey Sound.

Biodiversity

Construction activities have the potential to pose a risk to nearby watercourses, particularly in this case to Dursey Sound, which could affect a range of marine species. Chapter 07 Biodiversity, Chapter 10 Hydrology and the Outline CEMP set out mitigation measures to prevent the runoff of contaminants during construction stage. These measures will mitigate the risk to biodiversity within the Kenmare River SAC and any other European Sites.

During the operation phase, the SuDS water treatment features will mitigate any potential impacts on water quality, whilst also maintaining quality of water in vicinity of Dursey Sound.

Landscape and Visual

During the operation of the proposed development, SuDS features, will be incorporated into the Landscaping Strategy (see Appendix 4.6) and will create landscaped areas which will be integrated into the planting and surface finishes.

Material Assets and Land

The provision of SuDS surface water drainage system during operation stage will provide treatment to surface water runoff prior to discharge to Dursey Sound. The upgraded system will incorporate the anticipated visitor numbers to the site of the proposed development.

17.3.6 Landscape and Visual Will Interact / Interrelate with the Following:

Population and Human Health

The development of a public realm and landscaping design as detailed in Chapter 4 of this EIAR and included in Appendix 4.6 will provide positive impacts on population and human health during the operation stage. The use of native plants and species and settings which incorporate the current setting of the site will help mitigate the impact of the development as a whole and will also create a modern urban quarter for the population and visitors to enjoy.

Biodiversity

The Landscaping Strategy (see Appendix 4.6) encourages the use of native tree species and has been developed in conjunction with the recommendations of the project ecologist. Species have been chosen for the site and for the green roofs to enhance and support biodiversity within the site. Pollinator friendly species and coastal grasses have been selected to enhance the biodiversity of the site as part of the landscaping scheme. These mitigation and enhancement measures are provided in Chapter 7 Biodiversity and Chapter 11 Landscape and Visual Analysis of this EIAR.

Archaeological and Cultural Heritage

Construction haulage and construction machinery are likely to have a visual impact on the sites of cultural heritage. These impacts and mitigation measures are provided in Chapter 11 Landscape and Visual.

Material Assets and Land

During operation, landscape mitigation measures will help create a modern urban quarter which will attract visitors and tourists to the area, representing a positive impact on material assets and land.

17.3.7 Noise and Vibration Will Interact / Interrelate with the Following:

Population and Human Health

Noise and Vibration impacts from the construction noise will potentially interact with population and human health over short term. Population and human health impacts as a result of noise and vibration increases have been assessed in Chapter 12 Noise and Vibration and Chapter 06 Population and Human Health of this EIAR.

Biodiversity

During construction and operation, noise and vibration impacts have potential to interact with the biodiversity within the Beara Peninsula, namely that of the Kenmare River SAC and the Beara Peninsula SPA. The predicted impacts are discussed in Chapter 07 Biodiversity and mitigation measures have been included in the Outline CEMP located in Appendix 4.1 of this EIAR.

Landscape and Visual

Noise mitigation measures during construction has potential to positively interact with landscape and visual impacts. The use of high quality noise mitigating hoarding around the site during construction will help mitigate the visual impacts of the construction stage.

Material Assets and Land

Noise and vibration levels during construction stage will also interact with Material Assets and Land. Residential properties and Businesses along the R572 may be subject to indirect impacts during construction and operation as a result of noise and vibration increases.

17.3.8 Air Quality and Climate Will Interact / Interrelate with the Following:

Population and Human Health

The construction activities are likely to increase air pollutant and dust emissions and have the potential to impact population and human health. During the operation stage, traffic-related air emissions are likely to generate a number of air pollutants into the atmosphere. Mitigation measures during both the construction and operation stages are discussed in Chapter 13 Air Quality and Climate and Chapter 06 Population and Human Health in this EIAR.

Biodiversity

Air pollutant and dust emissions have the potential to interact with the biodiversity of the area due to pollutant deposition. The potential for deposits on the Kenmare River SAC and Bears Peninsula SPA are assessed in Chapter 13 Air Quality and Climate of this EIAR.

Material Assets and Land

Dust generated from construction activities may cause annoyance or nuisance to businesses and residents within the area. Measures to control the production of dust such as the Dust Minimisation Plan, which has been prepared as part of this EIAR, will be put in place by the contractors to reduce any potential impacts experienced by receptors. Good communication between the contractors and business owners as well as residents in the proximity of construction activities will facilitate on-going operations.

17.3.9 Archaeological and Cultural Heritage Will Interact / Interrelate with the Following

Population and Human Health

The existing mainland pylon will be retained onsite as per the mitigation measures outlined in Chapter 14 Archaeological and Cultural Heritage will enhance the cultural element at the proposed development site for the local population and visitors to enjoy.

17.3.10 Material Assets and Land Will Interact / Interrelate with the Following:

Traffic and Transport

The road improvement works to a portion of the R572 will have a positive impact on traffic by relieving congestion problems for the road users including residents, local road users as well as visitors.

Population and Human Health

The provision of a new Dursey island cableway and a visitor centre will have positive impacts on population and human health. The development will enhance the leisure experience in the area for locals and visitors alike. The development of the visitor centre and the provision of an increased capacity car parking area will provide jobs to the locals and will bring more visitors to the area, having a beneficial effect on the local economy.

Hydrogeology

The upgrade to the supporting infrastructure and utilities within the study area of the proposed development and its surroundings (including mainland and island water supply and wastewater treatment systems) will improve welfare facilities and will cater for the anticipated increase in visitor numbers.

Hydrology

The upgrade to the supporting infrastructure and utilities within the study area of the proposed development and its surroundings (including mainland and island water supply and wastewater treatment systems) will improve welfare facilities and will cater for the anticipated increase in visitor numbers. The surface water drainage system will comprise SuDS features which will attenuate and cleanse the surface water runoff from the dirt prior to discharge to Dursey Sound.

Landscape and Visual

The development of the land will have an impact on the Landscape and Visual setting of the site. The impact as a result of the development the visitor centre and the expansion of the car parking area is contained in Chapter 11 Landscape and Visual.

17.4 Major Accidents and Disasters

17.4.1 Potential for Major Accidents and Disasters

In the absence of national guidance on assessment of major accidents and disasters, the following methodology has been developed:

- Identifying hazards;
- Screening these hazards;
- Defining the impact;
- Assessing the likelihood of occurrence; and
- Assessing the remaining risks.

17.4.2 Stage 1 Assessment

A copy of the long list of major accident and disaster events is provided in Table 17.2. Although the majority of these major events are already considered under other legislative or design requirements, this is not considered to be sufficient reason to eliminate them from further consideration. However, where it is concluded that the need for compliance is so fundamental, and the risk of any receptors being affected so remote, such major events have not been included on the shortlist.

Likewise, it is considered reasonable and proportionate to exclude certain receptor groups from the outset. Construction workers, as a receptor, can be excluded from the assessment, because existing legal protection is sufficient to minimise any risk from major events to a reasonable level.

Table 17.2 Stage 1 Assessment for Accidents and Disasters

		Relevant for long list?	Why? (note if risk to the project, or project exacerbates risk)	Potential Receptors	Covered already in EIAR? If so, where?	Continue to Stage 3 (see Chapter 4)?
Natural Disasters						
1 Geological Disasters						
1.1	Avalanches and landslides	Yes	Landslides have been considered as a fundamental part of the design. This will ensure that the risk is designed out, both in terms of the vulnerability of the proposed development to these types of events, and also in terms of the potential for the proposed development to increase the risk of such an event happening. It is considered that there is no receptor that could therefore be of greater risk.	N/A	N/A	No
1.2	Earthquakes	No	The site is not in a geologically active area and as such, earthquakes are not considered to be a real risk or serious possibility.	N/A	N/A	No
1.3	Sinkholes	No	The geology of the study area is not prone to sinkholes.	N/A	N/A	No
2 Hydrological Disasters						
2.1	Floods	Yes	Both the vulnerability of the project to flooding and its potential to exacerbate flooding have been covered in the Hydrology chapter of this EIAR and has been reported on in the EIAR, both in terms of the risk to the proposed development and increased risk due to the proposed development.	The proposed visitor centre, car park and cable car landing points	Yes - Chapter 10: Hydrology	No
2.2	Tsunami / Storm surge	Yes	The site is exposed to sea levels and the effect of storm surges have been considered in the assessment of flood risk. See Item 2.1 above.	The proposed visitor centre, car park and cable car landing points	Yes - Chapter 10: Hydrology	No

		Relevant for long list?	Why? (note if risk to the project, or project exacerbates risk)	Potential Receptors	Covered already in EIAR? If so, where?	Continue to Stage 3 (see Chapter 4)?
3 Meteorological Disasters						
3.1	Blizzards	No	Blizzard conditions could affect users of the proposed development. However the risk is no different from other coastal developments in Ireland.	Visitors and residents	N/A	No
3.2	Cyclonic storms	No	No - not applicable.	N/A	N/A	No
3.3	Droughts	No	Droughts are only considered as a disaster due to water shortages for essential services and where there are indirect impacts on food production, loss of soils etc. The proposed development is not considered to be vulnerable to drought.	N/A	N/A	No
3.4	Thunderstorms	Yes	The proposed building and cableway design will consider the potential risk of lightning strikes, though the risk is not considered to be any greater than any other buildings.	Visitors and residents	No	No
3.5	Hailstorms	No	No	N/A	N/A	No
3.6	Heat waves	Yes	The proposed development design will consider the effect of high temperatures; however the proposed development will be no more vulnerable than any other development.	N/A	N/A	No
3.7	Tornadoes	No	Although there are tornadoes in Ireland, their destructive force tends to be much less than in other parts of the world and the proposed development is not particularly vulnerable to any potential effects.	N/A	No	No
3.8	Wildfires	Yes	The landscaping proposed for the proposed development will not be dense, however the risk of wildfires is thought to be no greater than for other existing urban developments.	Development users, habitats and species.	No	No
3.9	Air Quality Events	Yes	Although relevant, as vehicles emissions can contribute to poor air quality, it is not considered necessary to undertake any more assessment than is already proposed for the air quality assessment.	Visitors and residents	Yes - Chapter 13: Air Quality and Climate	No

		Relevant for long list?	Why? (note if risk to the project, or project exacerbates risk)	Potential Receptors	Covered already in EIAR? If so, where?	Continue to Stage 3 (see Chapter 4)?
4 Space Disasters						
4.1	Impact events and airburst	No	The proposed development is considered to be no more vulnerable than any other development.	N/A	N/A	No
4.2	Solar flare	No	The proposed development is considered to be no more vulnerable than any other development.	N/A	N/A	No
5 Transport						
5.1	Road Accidents	Yes	The risk posed by spillage from hazardous loads as a result of a road traffic accident e.g. fuel tankers is considered in the Hydrology and Hydrogeology chapters of this EIAR.	Road users, aquatic environment.	Yes - Chapter 9: Hydrogeology and Chapter 10: Hydrology	Yes
5.2	Rail Accidents	No	No	N/A	No	No
5.3	Aircraft Disasters	No	There is not considered to be an increased risk to visitors or residents.	N/A	N/A	No
5.4	Maritime Disasters	Yes	The proposed development is located adjacent to the sea and the effect of extreme tidal levels, wave and wind conditions were considered during the design of the proposed development.	Visitors and residents	Yes – Chapter 16: Material Assets	No
6 Engineering Accidents/Failures						
6.1	Bridge Failure	No	There is no bridge proposed as part of the proposed development	N/A	No	No
6.2	Tunnel Failure or Fire	No	There are no proposed tunnels as part of the proposed development	N/A	N/A	No
6.3	Dam Failure	No	There are no dams that would affect the proposed development	N/A	N/A	No
6.4	Flood Defence Failure	Yes	The site has been designed to protect against flooding by means of ensuring the proposed development is of a certain height.	N/A	Chapter 4: Description of the Proposed Development	No
6.5	Mast and Tower Collapse	Yes	Roadside signs and lighting will be part of the proposed development. They will be designed to modern design standards.	Road users	No	No

		Relevant for long list?	Why? (note if risk to the project, or project exacerbates risk)	Potential Receptors	Covered already in EIAR? If so, where?	Continue to Stage 3 (see Chapter 4)?
6.6	Building failure or fire	Yes	The proposed buildings have been designed to the latest design standards and measures.	Population, Biodiversity	Chapter 4: Description of the Proposed Development	Yes
6.7	Utilities failure (gas, electricity, water, sewage, oil, communications)	Yes	Utilities including water and wastewater provisions have been designed and will be provided as part of the proposed development.	Hydrology, Hydrogeology, Material Assets	Chapter 04: Description of the Proposed Development Chapter 09: Biodiversity Chapter 16: Material Assets	No
7 Industrial Accidents						
7.1	Defence industry	No	None in the study area	N/A	No	No
7.1	Energy Industry (fossil fuel)	No	None in the study area	N/A	No	No
7.1	Oil and gas refinery / storage	No	None in the study area	N/A	No	No
7.1	Food Industry	Yes	A café is proposed as part of the development. Health and Safety will be implemented by the occupier when appointed.	Population, Biodiversity, Material Assets	No	No
7.1	Chemical Industry	No	None nearby	N/A		
7.1	Manufacturing Industry	No	None nearby	N/A	N/A	No
7.1	Mining Industry	Yes	None nearby	N/A	No	No

		Relevant for long list?	Why? (note if risk to the project, or project exacerbates risk)	Potential Receptors	Covered already in EIAR? If so, where?	Continue to Stage 3 (see Chapter 4)?
8 Crime/Civil Unrest						
8.1	Crime or Civil Unrest	No	No more vulnerable than any other developments.	N/A	No	No
8.2	Cyber attacks	Yes	No more vulnerable than any other developments.	N/A	No	No
9 Disease						
9.1	Human disease	No	No more vulnerable than any other development.	N/A	No	No
9.2	Animal and Plant disease	Yes	The removal of onsite Invasive Alien Species is required to permit development. Biosecurity will be considered in the construction and operational phases.	Biodiversity	Chapter Biodiversity 07	Yes

17.4.3 Stage 2 Assessment

In general, major accident and disaster events, as they relate to the proposed development, will fall into three categories:

- Events that could not realistically occur, due to the type of development or its location;
- Events that could realistically occur, but for which the proposed development, and associated receptors, are no more vulnerable than any other development; and
- Events that could occur, and to which the proposed development is particularly vulnerable, or which the proposed development has a particular capacity to exacerbate.

The screening stage was undertaken primarily to identify this third group of major events, which would then form the shortlist of events to be taken forward for further consideration.

17.4.4 Stage 3 Assessment

Stage 3 of the assessment requires more detailed consideration of the short list of major events developed during Stage 2, though this may only mean that the risk needs to remain on the design risk register until it is closed out through design. Major events that were included on the short list and which have subsequently been considered in more detail are presented in Table 17.3.

Table 17.3 Assessment of Remaining Risks Associated with the Proposed Development

Major Event	Reason for consideration on Short List	Potential Receptors	Mitigation	Residual Significance
Road Accidents	The risk posed by spillage from hazardous loads as a result of a road traffic accident, e.g. fuel tankers, is considered in the Hydrology and Hydrogeology chapters of this EIAR. The proposed development will introduce these types of vehicles to the site.	Road users, aquatic environment.	Due to the history of very few road accidents in the area and the low speed limits in the area, it is expected that spillages as a result of traffic accidents will be unlikely. Chapter 10 Hydrology of this EIAR has assessed spillage events during construction such as accidental spillages of hydrocarbons, concrete, cement products etc. Mitigation measures have been included in Chapter 10 Hydrology and in the Outline CEMP and Outline EOP prepared for the development which will, as a minimum, require the development to be formulated in consideration of standard best practice. An Outline Incident Response Plan has also been included in the Outline EOP for the construction stage. Mitigation measures will attenuate and cleanse the surface water runoff from the site prior to discharge to Dursey Sound.	Not significant
Building Failure or Fire	The proposed buildings, car park and cableway structures have been designed to the most recent design regulations and fire exits have been incorporated into the designs.	Visitors and residents	Once the proposed development is in operation, it is not likely to cause any major accidents and/or disasters due to the nature of the development. The proposed development will comply with safety requirements listed in the Outline Recovery and Evacuation Report prepared by Roughan & O'Donovan for Dursey Island Cable Car in 2019. The proposed buildings are designed to comply with Building Regulations Technical Guidance Documents (TGD) Part B – Fire Safety (2006).	Not Significant
Animal and Plant disease	There is currently IAS within the study area which will be dealt with before construction. However biosecurity will be considered in the construction and operational phases for the proposed development.	Visitors, residents, biodiversity	An Invasive Alien Species Management Plan has been developed to control IAS within the site prior to construction. A site survey will be carried out prior to development to ensure that IAS have been eradicated as per the Management Plan and that no regrowth has occurred. The contractors will be in charge of the management of IAS during construction and where eradication has not been successful they will put in place a Management Plan for the treatment of any remaining IAS.	Not significant

There are no “Seveso” sites (establishments within the meaning of the Chemicals Act (Control of Major Accident Hazards Involving Dangerous Substances) Regulations 2015) in close proximity to the proposed development. The closest Seveso site, Zenith Energy Bantry Bay Terminal Ltd. in Reenrour, Bantry, is located approximately 43km east of the proposed development.

- Weather Events;

The assessment identified that weather events are the principal hazards encountered with respect to cable car and visitor centre operation, including rainfall, wind and ice and their potential contribution to natural disasters and major accidents such as collisions. Flooding is a likely event that may occur in the vicinity of the proposed development and impacts associated with flooding are examined in Chapter 10 Hydrology of this EIAR.

The principal objectives for the proposed drainage system include:

- To provide improved water quality by means of treatment prior to discharge;
- To ensure that the impact of the drainage outfalls on the receiving Dursey Sound is negligible; and
- To minimise the impact of runoff on the receiving environment.

The maintenance and operation of the proposed cableway will be in line with the 2016 report for the existing cableway “Safety Requirements for Dursey Island Cable Car – Precommissioning Inspection, Maintenance, Operational Inspection and Checks”.

The elements of the proposed development which are envisaged to be operated and maintained are as follows:

- Landscaping maintenance of all landscaping areas;
- Road sweeping and de-icing operations of the carpark and approach road;
- Regular maintenance of the permeable pavements in the form of brushing and vacuuming;
- Resurfacing works of the carpark and approach road, as necessary; and
- Periodic inspection and maintenance of all civil infrastructure elements.

The maintenance and operation of the visitor centre and café will include the following:

- Maintenance of all mechanical and electrical (M&E) equipment located within each building; and
 - Internal and external cleaning
- Risk of Slope Failure

The proposed development has been designed to ensure that the cablecar landing points and the visitor centre are positioned at a distance from the rock face. The rock slopes are considered too distant from the landing points to have an adverse effect. Therefore, the likelihood of slope failure resulting in impacts on the cable car or visitor centre is negligible.

Ensuring the proposed development is resilient to major accidents and disasters includes the provision of warning systems to warn users of incidents in advance of hazards, and the management and operation of the proposed development. The likelihood of the proposed development causing major accidents and/or disasters is negligible. During construction, workers will be vulnerable to accidents while working on site, however the contractor will have a safety statement and safety plan in place which will include procedures to protect their employees while on site. The likelihood

of the proposed development causing major accidents and /or disasters is very small and is not significant.

Likewise, it is considered reasonable and proportionate to exclude certain receptor groups from the outset. Construction workers, as a receptor, can be excluded from the assessment, because existing legal protection is sufficient to minimise any risk from major events to a reasonable level. Another potential source of major events related to the proposed development is road traffic accidents during its operation. These can clearly impact on people through fatalities and serious injury, but can also impact on the environment through the spillage of fuel and hazardous loads. However, for the proposed development, Chapter 5 Traffic Analysis of this EIAR has included elements in its design to minimise this risk. The likelihood of the proposed development causing major accidents and /or disasters is very small and is not significant.

17.5 Cumulative Effects

Projects

- Barry O'Neill
- Lehanemore Community Co-operative Society Ltd.;
- Telefonica Ireland Ltd.;
- RTE Transmission Network Ltd.;
- Allihies Parish Co-operative Society Limited;
- Dzogchen Beara Trust;
- Hutchison 3G Ireland;
- Meat Packing Facility;
- Retention of Office, Hatchery and Seaweed Production; and
- Café and Tourist Accommodation

17.5.1 Barry O'Neill [Planning Ref.: 19473]

In July 2019, permission was sought from CCC by Barry O'Neill for the construction of a detached tourist accommodation and facility building to incorporate (i) a café, (ii) guest accommodation and (iii) facilities for walkers and cyclists, and also for the installation of a wastewater treatment system and all associated site works in the townland of Ballynacallagh, on Dursey Island. However, the planning application in question was withdrawn on the 30th of August 2019. It is possible that, at some point in the future, permission will again be sought for this project or some derivation thereof. However, no details are known of when or in what form a planning application for this project might be re-submitted. Therefore, it is neither possible nor appropriate to make a full assessment of the nature or significance of any potential adverse effects arising from this project in combination with the proposed development.

17.5.2 Lehanemore Community Co-operative Society Ltd [Planning Refs.: 09198, 12439 and 1973]

Lehanemore Community Co-operative Society Ltd. received permission to construct a car park with all associated site works in 2009. Subsequently, in July 2012, Lehanemore Community Co-operative Society Ltd. submitted a planning application for the construction of a car park, erection of safety barriers, construction of a vehicular entrance and associated site works. Permission was granted with conditions in September 2012. They then applied for planning permission for the construction of car park and vehicular entrance, erection of safety barriers and associated site works in

February 2019 and are awaiting a result. No likely significant cumulative impacts are predicted due to the construction of the car park and associated works which is located 1.7km northeast of the proposed development.

17.5.3 Telefonica Ireland Ltd. [Planning Ref.: 14735]

In December 2014, Telefonica Ireland Ltd. sought permission for the retention of existing 30m high telecommunications support structure carrying antennas and link dishes together with associated equipment containers and security fences which was previously granted under reference number 08/2030 and forms part of their cellular and digital broadband communications network at Knockaura, Coom, Allihies, Co Cork. Telefonica was granted planning permission with conditions in March 2015. No likely significant cumulative impacts are predicted due to the retention of the telecommunications support structure which is located 11.3km northeast of the proposed development.

17.5.4 RTE Transmission Network Ltd. [Planning Ref.: 12691]

In November 2012 RTE Transmission Network Ltd. sought permission for the retention of a 36-metre high tower, concrete bases and chain-link fencing for the continuation of use as a communications station as granted in 2013. The tower is within an existing chain-link fence compound using an existing access route. (This application is subsequent and subject to alterations to a previous grant of permission by Cork County Council planning reference 07/2700). No likely significant cumulative impacts are predicted due to the retention of the communication tower which is located 12km northeast of the proposed development.

17.5.5 Allihies Parish Co-operative Society Ltd. [Planning Ref. 10327]

Permission was granted for the construction of a storage shed, outdoor seating and an exhibition area at the rear of Allihies Mine Museum Building in 2010. No likely significant cumulative impacts are predicted due to these upgrades to the museum which is located 8.2km northeast of the proposed development.

17.5.6 Dzogchen Beara Trust [Planning Refs.: 10350 and 14517]

Permission was granted in 2010 for a proposed development which consisted of an expansion of the existing Dzogchen Beara Retreat Centre Facility, consisting of a temple building 14.5m height, along with three adjacent single storey ancillary buildings and connection to existing onsite sewage and water facilities. Ancillary building No. 1 includes provision of two self-contained accommodation units (one for a caretaker of the temple building, and one for a resident monastic). Ancillary building No. 2 provides toilet facilities, and ancillary building No. 3 provides additional storage for the temple building, and all ancillary site works. In 2014 permission was granted for the extension of the duration of this permission. No likely significant cumulative impacts are predicted due to this development which is located 12.1km southeast of the proposed development.

17.5.7 Hutchison 3G Ireland [Planning Refs.: 09716 and 09717]

Permission was granted in September 2009 for the construction of a 12m slim line monopole with 3 no. 2.1m panel antennas and 1 no. 0.6m radio link dishes attached, equipment cabinet, fencing and associated site works as part of the Governments National Broadband Scheme. No likely significant cumulative impacts are predicted due to this monopole which is located 12km east of the proposed development, in Lickbarahane.

In September 2009, permission was also granted for the construction of a 24m slim line monopole with 3 no. 2.1m panel antennas and 1 no. 0.6m radio link dishes attached, equipment cabinet, fencing and associated site works as part of the Governments National Broadband Scheme. No likely significant cumulative impacts are predicted due to this development which is located 15km northeast of the proposed development, in Coulagh.

17.5.8 Meat Packing Facility [Planning Ref.: 12109]

Permission was granted with conditions for the construction of a meat packing facility and associated site works in August 2012. No likely significant cumulative impacts are predicted due to the construction and operation of the meat packing facility which is located 10km northeast of the proposed development, in Caherkeen.

17.5.9 Retention of Office, Hatchery and Seaweed Production [Planning Ref.: 13162]

Retention of the following was granted with conditions in June 2013: (a) office/toilet prefabricated unit and permission to relocate same within site boundaries, (b) two storage containers for general storage and permission to relocate same within site boundaries, (c) two vehicular entrances, (d) a hatchery unit, (e) a drier unit and (f) septic tank system and planning permission for the following: (i) alterations to an existing vehicular entrance, (ii) close up the second vehicular entrance and construct a new vehicular entrance, (iii) removal of three containers from site, (iv) construct a new agricultural building for seaweed line preparation and seaweed drying (existing hatchery unit and drier unit to be relocated and incorporated in this building) and (v) revise the existing yard layout to include hard surfaced areas and open green areas, and also to include all associated site works.

No likely significant cumulative impacts are predicted due to this development, which is located 15km east of the proposed development, in Oakmount.

17.5.10 Cork County Development Plan 2014-2020

This Development Plan sets out Cork County Council's policies and objectives for the proper planning and sustainable development of the County from 2014 to 2020. Key strategic sites supporting and fostering entrepreneurship are promoted. The proposed development supports the Cork County Development Plan and it is therefore considered that there will be positive cumulative impacts as a result of the proposed development.

17.5.11 West Cork Municipal District Local Area Plan

This Local Area Plan sets out detailed planning strategy and land use zoning as appropriate for the towns and villages of the West Cork Municipal District from 2017. The policies, objectives and zoning objectives for existing and future development of the West Cork Municipal District have been considered as part of the proposed development. Therefore, it is considered that there will be positive cumulative impacts as a result of the proposed development.

17.5.12 Dunmanus - Bantry - Kenmare Flood Risk and Management Plan (CFRAM)

The purpose of the Plan is to set out the strategy, including a set of proposed measures, for the cost-effective and sustainable, long-term management of flood risk in the River Basin, including the areas where the flood risk has been determined as being potentially significant.

The proposed development will satisfy the proposals outlined in the Plan and therefore, it is considered that there will be positive cumulative impacts as a result of the proposed development.

17.6 Potential Future Developments

The Applicant (CCC) is aware that, since the proposed development will promote economic development on Dursey Island and in the vicinity on the mainland, it is also likely to induce further development (particularly that which relates to tourism and recreation) nearby, including on Dursey Island. Since such developments are purely hypothetical, potential in-combination effects between these and the proposed development cannot be assessed at this juncture. However, it should be noted that CCC has every intention to manage development in the area in accordance with national, regional and local policies, including the West Cork Island Integrated Development Strategy (2010), the Cork County Development Plan 2014 – 2020, and the West Cork Municipal District Local Area Plan (2017), the latter of which states that *“Development on [Dursey Island] will only be permitted where it is shown that it is compatible with the requirements of the Habitats Directive and the protection of these sites”*. Furthermore, in the process of developing the EIAR and NIS for the proposed development, CCC have developed a more in-depth understanding of the management measures that are required in order to conserve the various aspects of the environment on Dursey Island, and in the vicinity of the cable car site on the mainland. This knowledge will be used to inform subsequent judgements of CCC with respect to planning proposals for the area in question that are submitted to them in the future.

17.7 Conclusion

Interrelationships

The interrelationships between the individual environmental disciplines have been considered and assessed. It is concluded that once relevant mitigation measures are implemented, no residual likely significant effects will exist as a result of the construction or operation of the proposed Dursey Island Cable Car and Visitor Centre.

Major Accidents and Disasters

There are no “Seveso” sites (establishments within the meaning of the Chemicals Act (Control of Major Accident Hazards Involving Dangerous Substances) Regulations 2015) in close proximity to the proposed development. The closest Seveso site, Zenith Energy Bantry Bay Terminal Ltd. in Reenrour, Bantry, is located approximately 43km east of the proposed development.

The design of the proposed development has taken account of the potential for flooding and it is considered that there is minimal flood risk as a result of the proposed development. In relation to accidents resulting in a spillage of polluting material, the risk of these occurring will be significantly reduced and if a spillage should occur the proposed development incorporates drainage to allow the spilled material to be contained and treated prior to discharge.

Cumulative Impacts

It is considered that the scale of the works and implementation of effective environmental control measures will avoid all likely significant effects on environmental parameters. There is no potential for cumulative impacts arising in combination with

any other plans or projects and therefore no potential for in combination effects on environmental parameters.

Based on the above, it can be objectively concluded, in view of best scientific knowledge, on the basis of objective information and provided effective mitigation is in place, that the proposed development, individually or in combination with other plans and projects, will not have a significant adverse effect on the receiving environment.