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# APPROPRIATE ASSESSMENT NATURA IMPACT STATEMENT

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Proposed Sea Wall Repairs on the Lighthouse Road, Skellig  
Michael, Co. Kerry

Prepared on behalf of the Office of Public Works  
by  
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## 1 Introduction and Project Rationale

### 1.1 Introduction

Envirico have been commissioned by Office of Public Works (OPW) to provide ecological consultancy services for the proposed sea wall repairs, at the location Crash Deck No. 2 on the Upper Lighthouse Road, at Skellig Michael, Co. Kerry. The proposed repair works are scheduled to begin once works have been completed on Crash Deck No. 2 in late May to early June and are subject to receipt of Ministerial Consent for the sea wall repairs.

In accordance with the EC Habitats Directive 92/43/EEC (hereafter 'The Habitats Directive') a Screening for Appropriate Assessment (AA) must be undertaken for all projects and/or plans to assess whether there is potential for Likely Significant Effects (LSEs) from the project or plan on European sites (Natura 2000 sites); comprising Special Areas of Conservation (SACs) and Special Protection Areas (SPAs). The proposed development site is located within the island of Skellig Michael, Co. Kerry, with the immediate surrounds typically made up of a landing pier, lighthouse road, associated sea wall, and coastal habitats. No surface water environments are within the project boundary. A location map for the proposed works is presented in Figure.1.

### 1.2 Project Rationale

Skellig Michael is an isolated rock precipice situated in the Atlantic subject to the highly erosive effects of wind, rain, and temperature fluctuation. Rockfalls are a characteristic feature of the island and may occur at any location at any time. On the 13<sup>th</sup> June 2022, a rock fall occurred on the lower lighthouse road adjacent to Cross Cove (refer to Photo.1). Previous rock falls, of varying concern, have occurred on the Skelligs. The sea wall on the Upper Lighthouse Road was damaged by last year's rockfall. These typically happen during the winter months, reflecting the extreme exposure of the site and its vulnerability to increased aggression during these months. There have been incidences during the working season most notably a substantial incident near the workmen's compound in July of 2020, a previous significant rock fall near the landing and some other more modest but nonetheless equally dangerous falls at other locations.

The OPW provided and extended a protective canopy in the area of the cove on the access road from the landing to mitigate debris falling on an ongoing basis at this location. A temporary canopy was also provided on the Upper Lighthouse Road to give protection to OPW personnel while carrying out conservation work in this area. A contract for three substantial canopies is also underway to mitigate the risk of falls at locations where substantial incidences have previously occurred. The structure for Crash Deck No. 2 was installed last year by Costello contractors, with works to complete the remainder of the canopy scheduled for late May and June 2023 (refer to Photo.2). Once the works on the canopy structure have been completed by the contractors, the OPW are scheduled to complete the repairs to

the sea wall from last year's rockfall, subject to the receipt of a Ministerial consent for the proposed works (refer to figure.2). The proposed works will consist of:

- Erecting of a temporary working platform on the seaward side of the damaged wall.
- Proposed re-building of the sea wall to match existing wall structure.
- Proposed re-pointing to the inner wall in lime mortar.
- Proposed stone capping to match existing structure.

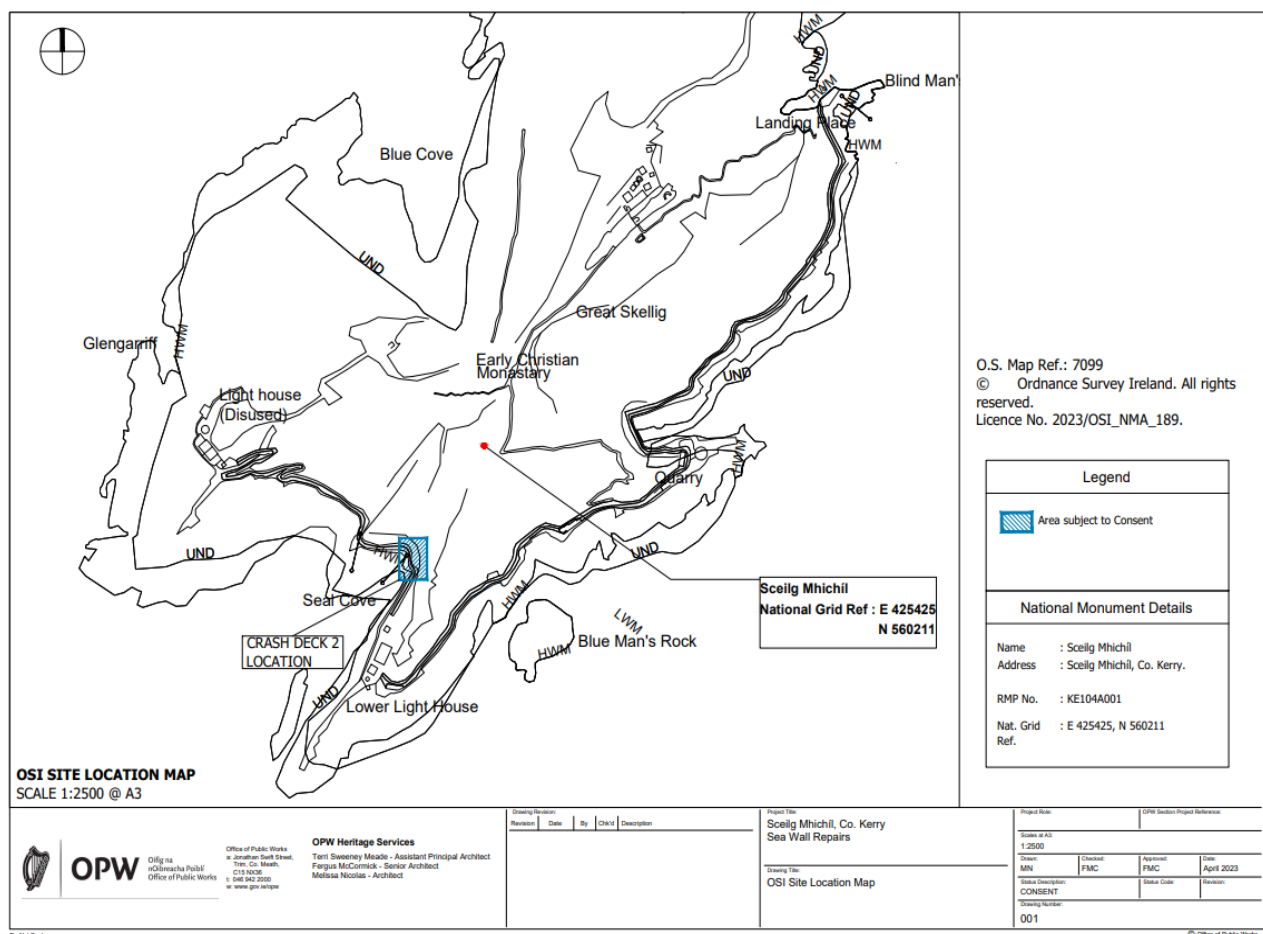


Figure 1: Location of proposed sea wall repairs subject to Ministerial consent (OPW, 2023)





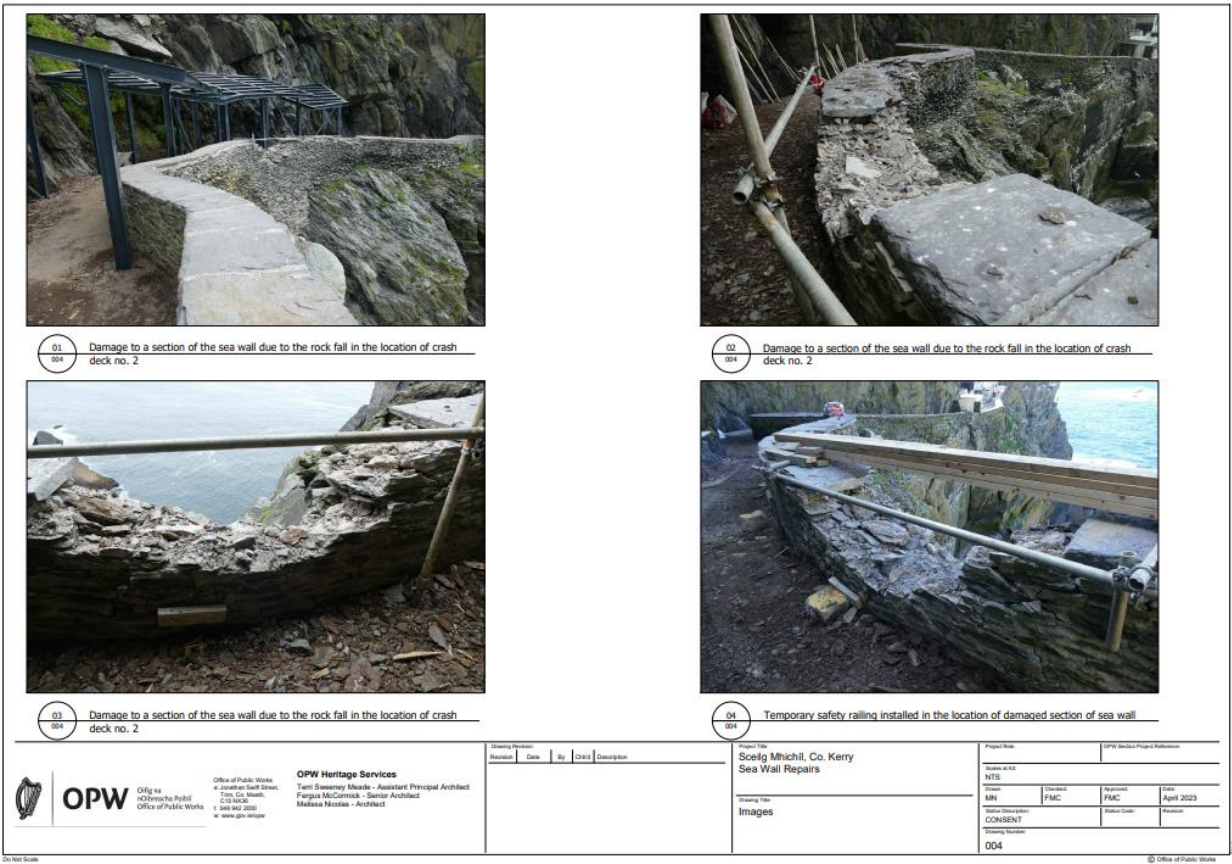


Photo 2: Location of rockfall that occurred in 2022 with Crash Deck No. 2 structure installed (OPW, 2023)

The OPW have a well-established protocol for optimising safety on the Island when the workmen return to the Island in May. The repairs to the sea wall are necessary to protect the remaining structure of the sea wall from potential collapse and to protect the health and safety of construction workers from falls due to exposed opening on wall and elevated location, that constantly use the Lighthouse Road during the islands open season. This fact is obviously significant in health and safety terms with the requirement that the mitigation to deal with it must be as comprehensive as possible and should be put in place immediately as required.

1.3 Statement of Authority

This NIS Report has been prepared by Maurice O Connor, Environmental Consultant. Maurice holds BSc (Hons) degree in Wildlife Biology from Institute of Technology Tralee and an MSc in Ecological Assessment from National University of Ireland Cork (UCC). Maurice is an experienced ecological consultant with over 10 years’ professional experience in Ireland, working independently and within consultancy. He has strong generalist ecological field skills in terrestrial and riparian environments and through his experience can demonstrate undertaking a range of ecological surveys including habitat, invasive and protected species survey, delivering initial site appraisals and identification of ecological



constraints to inform Ecological Impact Assessments (EcIA) and AA. Maurice has undertaken ecological assessments and surveys on a variety of project types (e.g. road schemes, waste, water, energy and housing) involving survey, mitigation and enhancement. During his time as an environmental consultant, Maurice has completed numerous AA assessments for both plans and projects.

## 2 The Appropriate Assessment Process

### 2.1 Legislative Context for Appropriate Assessment

Legislation 42 of the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. 437 of 2011) (as amended) transposes Article 6 of the Habitats Directive (92/43/EEC) into Irish law. The regulations require that where a public authority wishes to progress a project (which is not directly connected with or necessary to the management of the site as a European Site), a screening for Appropriate Assessment (AA) of the project must be carried out by the public authority to assess, in view of best scientific knowledge and in view of the conservation objectives of the site, if that project, individually or in combination with other plans or projects is likely to have a significant effect on the European site. AA screening is required under Article 6(3) of European Union Council Directive 92/43/EEC (also known as the Habitats Directive), section 177U of the Planning and Development Act 2000 to 2018 and amendments (Amendment of Part XAB (appropriate assessment)).

In accordance with the requirements of the Habitats Directive (92/43/EEC) and the Birds Directive (2009/147/EC), Member States have identified a network of sites of conservation importance, hosting habitats and/or species identified in the Directives as needing to be either maintained at or returned to favourable conservation status. These sites are known as the Natura 2000 network and in Ireland, Natura 2000 sites comprise areas designated as Special Areas of Conservation (SACs), candidate Special Areas of Conservation (cSACs), Special Protection Areas (SPAs) and candidate Special Protection Areas (cSPAs).

These Directives require that where a project is likely to have a significant effect on a Natura 2000 Site, while not directly connected with or necessary to the nature conservation management of the site, it shall be subject to 'Appropriate Assessment' to identify any implications for the site in view of the site's conservation objectives. Specifically, Article 6(3) of the Habitats Directive states:

*"Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives.*

*In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public".*

Article 6(4) states:

*“If, in spite of a negative assessment of the implications for the [Natura 2000] site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of a social or economic nature, Member States shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted.”*

This screening for Appropriate Assessment has been carried out in accordance with the following European Commission Guidance:

EC (2000 & 2018) ‘Managing Natura 2000 Sites: The Provisions of Article 6 of the ‘Habitats’ Directive 92/43/EEC’;

EC (2001) ‘Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC’;

NPWS, DEHLG (2009 & 2010). ‘Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities’

European Commission (2006). ‘Nature and Biodiversity Cases: Ruling of the European Court of Justice’.

## 2.2 Stages in Screening and Appropriate Assessment

Screening for Appropriate Assessment (AA) is one of four distinct stages of the appropriate assessment process, as outlined in the European Commission Guidance document (2001). Within these stages the potential of significant impacts/effects upon a Natura 2000 site will be assessed and detailed. The four stages of an AA are summarised below. Article 6(3) of the Habitats Directive, which details this assessment process, is implemented into law in Ireland through the provisions of Sections 177U and 177V of the ‘Planning and Development Act 2000 to 2018’.

All potential effects between activities associated with the proposed development and the ecological components of European sites must be considered. This includes potential effects on mobile species notably, birds, mammals, invertebrates, and migratory fish.

If the prospect of LSEs occurring cannot be excluded on the basis of objective information, the project is taken forward to the next stage of the process, Appropriate Assessment. At Screening, the burden of evidence is to show, on the basis of objective information, and beyond reasonable scientific doubt, that the project will have no LSEs on a European site. If the effect may be significant, or is not known, it would trigger the need for Appropriate Assessment. The entire process can be broken down into four stages (EC, 2001), as outlined below:

**Stage 1 - Screening:** Screening for an AA, in relation to the construction, management/operation and decommissioning of a specific proposed plan or project, shall be completed in order to assess whether said development, either individually or in combination with others, is likely to have a significant effect upon Natura 2000 sites locally, regionally or nationally, in view of these site's conservation objectives.

**Stage 2 - Appropriate Assessment:** The competent authority detailing the AA shall, under Article 6(3) and Section 177V of the 'Planning and Development Act 2000 to 2018', make a decision as to whether or not the proposed development would affect or impact upon the integrity of a Natura 2000 site. Where there are adverse effects on site integrity identified, mitigation measures are proposed, as appropriate, to avoid adverse effects, and as such a Natura Impact Statement is then required. For projects, the AA process is documented within a Natura Impact Statement (NIS). This is provided to the competent authority by the applicant, to facilitate an informed assessment of the project.

**Stage 3 - Assessment of Alternative Solutions:** If following AA, including proposal of mitigation, adverse effects on site integrity remain, or uncertainty remains, an Assessment of Alternatives is required. This process examines alternative ways of achieving the objectives of the project or plan that avoid adverse impacts on the integrity of the European site.

**Stage 4 - Assessment where no alternative solutions exist:** Where alternative solutions, locations, etc. are absent, or if such solutions are likely to have increased levels of impact upon Natura 2000 sites, the competent authority must establish whether or not the plan or project can be considered as necessary for Imperative Reasons of overriding public interest (IROPI).

## 2.3 The Likely Significant Effect test

Screening is underpinned by an interpretation of Likely Significant Effect (LSE), as this interpretation provides the benchmark for a finding of likely effects. Any assessment of significance must satisfy the principles that underpin a satisfactory determination for LSE with regard to the accumulation of impacts and an understanding of the nature, probability and severity of potential impacts. The terms 'likely' and 'significance' have been defined variously by governments and through the courts. The following sections seek to provide clarification on the current interpretation of these key terms as determined by recent guidance and case law.

### 2.3.1 An interpretation of 'likely'

European case law has established that the benchmark requirement of 'likely' should not be regarded as a measure of probability in the context of an AA. Rather, a LSE finding is an acknowledgment that the risk of a significant effect occurring exists. This approach is consistent with the findings in the Waddenzee judgement, which found that "if it cannot be excluded, on the basis of objective information, that it will have a significant effect on that site" then a LSE finding is appropriate.

More recently, this position was upheld in the European Court of Justice (ECJ) in Case C-258/11 (Sweetman v An Bord Pleanála (Ireland)), where the judgment interprets “likely” to mean “may”; “the test is set at a lower level” and “there is no need to establish such an effect; it is merely necessary to determine that there may be such an effect”. In cases where there is a determination that there is no significant effect, the Waddenzee judgment establishes that there must remain “no reasonable scientific doubt as to the absence of such effects.”

#### 2.3.2 An interpretation of ‘significant’

It was clarified in the ECJ Case C-127/02 (the Waddenzee judgment) that the measure of significance should be made against the ecological objectives for which the site was designated: “where a plan or project is likely to undermine the site’s conservation objectives, it must be considered likely to have a significant effect on that site”.

The proposed works are not directly connected with or necessary to the management of any European site therefore Screening for AA is required. This involves the following:

- Proposed development description
- European site(s) identification, qualifying interests and conservation objectives
- Ecology baseline conditions within and in close proximity to proposed development
- Assessment of likely effects
- Screening conclusion.



## 3 Screening Methodology

### 3.1 Desktop review

An ecological desk review was undertaken on the 25<sup>th</sup> April 2023 in order to assess the potential impacts of the proposed project, as detailed in Section 4.1 of this document. The purpose of this review is to collate available data and information relating to the site and relevant Natura 2000 sites. Within this review, sources, publications, and datasets that were consulted included.

- Aerial Photography and 1:50000 mapping
- National Parks and Wildlife Service (NPWS)
- Details and qualifying interests of European sites

#### 3.1.1 Zone of Influence (Zoi)

DHLGH Guidance states that screening for Appropriate Assessment should be carried out for any European site within the likely Zone of Influence of a plan or project. For projects, the guidance recommends that the Zone of Influence must be evaluated on a case-by-case basis regarding the nature, size and location of the project, and the sensitivities of the ecological receptors, and the potential for in combination effects. Projects have the potential to impact on European sites beyond the confines of the individual sites themselves.

The Zone of Influence of a project is the area in which qualifying interests are present which are sensitive to the ecological impacts that may be caused by the activities associated with the project. The zone of influence will therefore vary relative to the scale of the impact and relative to the ecology of the sensitive receptor.

The potential Zone of Influence is defined as:

- Areas directly within the land take for the proposed development
- Areas which will be temporarily affected
- Areas likely to be impacted by hydrological disruption
- Areas where there is a risk of pollution and disturbance (e.g. noise)

To establish the zone of influence, nationally available data on protected habitats and species was mapped using GIS. This data was interrogated for any physical, hydrological, or ecological connectivity to the activities associated with the proposed crash deck installation works.

The desk-based assessment of available records of protected species and habitats included the following sources:

- Conservation Status Assessment Reports [1] (CSARs), Backing Documents and Maps prepared in accordance with Article 17 of the Habitats Directive

- Published and unpublished NPWS reports on protected habitats and species including Irish Wildlife Manual reports, Species Action Plans, and Conservation Management Plans
- Existing relevant mapping and databases e.g. waterbody status, species and habitat distribution etc. (sourced from the Environmental Protection Agency - <http://gis.epa.ie/>, the National Biodiversity Data Centre - <http://maps.biodiversityireland.ie> and the National Parks and Wildlife Services - <http://www.npws.ie/mapsanddata/>)

### 3.1.2 European Sites within Zone of Influence

The Skelligs SPA (004007) is the only Natura 2000 site within the Zone of Influence, this being the area within which there is potential for impacts from the project works. Further Natura 2000 sites within a 15km radius are detailed in Table 1 below. These sites have been assessed for ecological connectivity with the project. Owing to small scale of the project, the remote island nature of the site and lack of connectivity there is no potential for likely significant effect.

Table 1 Natura 2000 sites within 15km

Natura 2000 Site	Site Code	Distance from Works (Km)
Valencia Harbour/Portmagee Channel SAC	002262	14
Puffin Island SPA	004003	11
Skelligs SPA	004007	0
Iveragh Peninsula SPA	004154	13

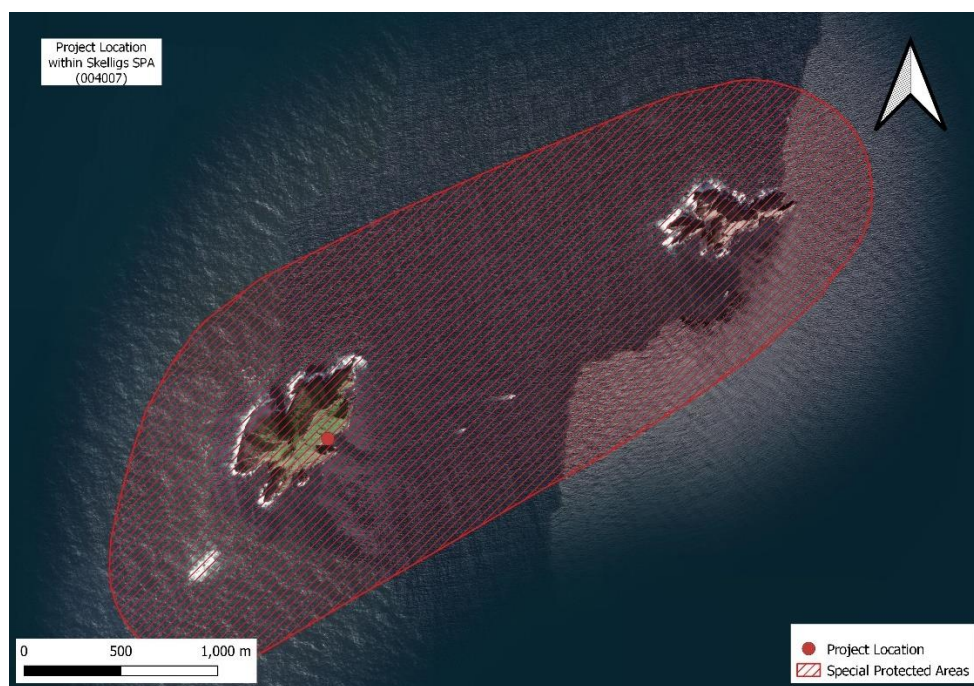


Figure 3 Location of Proposed Development

Qualifying features of the Skelligs SPA (004007) are presented in Table 2 below.

Table 2 Skelligs SPA (004007) Special Conservation Interests (SCIs)

Special Conservation Interests of Skelligs SPA	Species Code
<b>Fulmar (<i>Fulmarus glacialis</i>)</b>	[A009]
<b>Manx Shearwater (<i>Puffinus puffinus</i>)</b>	[A013]
<b>Storm Petrel (<i>Hydrobates pelagicus</i>)</b>	[A014]
<b>Gannet (<i>Morus bassanus</i>)</b>	[A016]
<b>Kittiwake (<i>Rissa tridactyla</i>)</b>	[A188]
<b>Guillemot (<i>Uria aalge</i>)</b>	[A199]
<b>Puffin (<i>Fratercula arctica</i>)</b>	[A204]

The site comprises Great Skellig and Little Skellig islands. These highly exposed and isolated islands, which are separated by a distance of 3 km, are located in the Atlantic some 14 km and 11 km (respectively) off the County Kerry mainland. The geology of the islands is of Old Red Sandstone, with a little slate and veins of white quartzite. Both islands are precipitous rocky sea stacks, Great Skellig rising to 218 m and Little Skellig to 134 m. Great Skellig supports a sparse maritime flora on shallow soils. Common plant species include Thrift (*Armeria maritima*), Sea Campion (*Silene maritima*) and Rock Sea-spurrey (*Spergularia rupicola*), with patches of Red Fescue (*Festuca rubra*), Dock (*Rumex sp.*) and Sea Mayweed (*Matricaria maritima*) occurring frequently. Its lichen flora is notable for the number of rarities that occur, including several species not recorded elsewhere in Ireland. Little Skellig is largely unvegetated, due both to the low soil cover and to the effect that the nesting birds have on the vegetation. However, Sea Mayweed occurs on ledges that are too small for Gannets, and Tree Mallow (*Lavatera arborea*), a local species in Ireland, has been recorded. The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Fulmar, Manx Shearwater, Storm Petrel, Gannet, Kittiwake, Guillemot and Puffin. It is also of special conservation interest for holding an assemblage of over 20,000 breeding seabirds. The Skelligs comprise one of the most important seabird colonies in the country for populations and species diversity. Great Skellig has an internationally important population of Storm Petrel (9,994 pairs in 2002), with birds nesting both in the stonework associated with the monastic settlement and in natural crevices amongst the scree and rock. Little Skellig is best known for its long established and internationally important Gannet colony, with 29,683 pairs in the last full census in 2004. This is by far the largest colony in Ireland and one of the largest in the world. Great Skellig also has one of the largest Puffin colonies in the country, with 6,000 pairs estimated in 2002. Other seabird species which occur on the islands in nationally important numbers are as follows: Fulmar (830 pairs), Manx Shearwater (902 pairs), Kittiwake (1,035 pairs) and Guillemot (1,652 pairs) – all data from 2002. Razorbill (283

pairs - five year mean between 1998 and 2002) occur but below the threshold of national importance. Great Skellig is a traditional site for Chough, though the relatively small size of the island supports only one nesting pair. Peregrine has also nested in some years. The breeding seabirds on the Skelligs have been fairly well documented over the years, with references to the Gannets dating back to the 1700s. Owing to the high importance of the islands for birds, each has been designated a Statutory Nature Reserve. In addition, the non-governmental organisation, Bird Watch Ireland, holds a long-term lease on Little Skellig. This site is one of the top five seabird sites in the country and is of international importance on account of both the assemblage of over 10,000 pairs of breeding seabirds and the individual populations of Storm Petrel and Gannet. The site also holds nationally important populations of a further five species of breeding seabird. Also of note is the regular presence of three species, Storm Petrel, Chough and Peregrine, which are listed on Annex I of the E.U. Birds Directive.

## 4 Screening for Appropriate Assessment

### 4.1 Description of Project

The proposed works consists of sea wall repairs due to rockfall damage, re-pointing of inner sea wall and stone capping to match the existing structure on the Lighthouse Road, Skellig Michael, Co. Kerry. A description of the works is presented in Table 3.

Table 3 Description of Proposed Works

Description	Task
<b><i>Size, scale, area, land-take</i></b>	<p>The footprint of the works will comprise the following:</p> <ul style="list-style-type: none"> <li>Proposed stonework rebuilding of the sea wall to match existing structure.</li> <li>Proposed re-pointing of inner sea wall to match existing structure.</li> <li>Proposed stone capping to the sea wall to match existing structure.</li> <li>Erecting a temporary working platform on the seaward side of the wall with anchor tie-ins.</li> <li>Removal of temporary working platform.</li> </ul> <p>All works will take place within the boundary of the Skelligs SPA (004007). The proposed works will take place within the footprint of the existing Lighthouse Road. The works will not extend beyond this area. There will be some encroachment onto adjacent habitats from temporary working platform.</p>
<b><i>Details of physical changes that will take place during the various stages of implementing the proposal</i></b>	<ul style="list-style-type: none"> <li>Repairs to damaged section of sea wall from rockfall in 2022.</li> <li>Re-pointing of joints on inner section of sea wall.</li> <li>Stone capping on damaged section of wall to match existing structure.</li> <li>Erection of temporary scaffolding (working platform) on the seaward side of the wall with anchor tie ins.</li> </ul>
<b><i>Description of resource requirements for the construction/operation and decommissioning of the proposal (water resources, construction material, human presence etc)</i></b>	<p><b>Construction Materials/Equipment</b></p> <ul style="list-style-type: none"> <li>Temporary scaffolding (working platform) on seaward side of wall</li> <li>Stainless steel rock bolts</li> <li>Stainless steel rock anchors</li> <li>Cement</li> <li>Sand</li> <li>Lime</li> <li>Water for mortar mix</li> <li>Stone &amp; stone capping for wall repairs</li> <li>No. of workers – max. 6</li> </ul>



	<ul style="list-style-type: none"> <li>• Generator and fuel</li> </ul> <b>Tools</b> <ul style="list-style-type: none"> <li>• Power barrow/quad bike for transporting lime mortar &amp; stone material</li> <li>• Cement mixer</li> <li>• Building trowels</li> <li>• Chisels</li> <li>• Power tools (drills for rock bolts etc)</li> </ul>
<b>Description of timescale for the various activities that will take place as a result of implementation (including likely start and finish date)</b>	Pending approval, it is anticipated that the proposed works will be carried out in late June & July 2023. All works will be dependent on weather/boat crossing conditions.
<b>Description of wastes arising and other residues (including quantities) and their disposal</b>	<p>Construction phase wastes will include:</p> <ul style="list-style-type: none"> <li>• Domestic waste arising from workers which shall be taken off the island on a daily basis for the duration of the works and disposed of at a suitably licensed facility.</li> <li>• Workers shall utilise existing OPW staff toilet facilities currently available on the island.</li> <li>• Wastes e.g. packaging, concrete washout to be transported via caterpillar transporter to pier for removal from island and disposed of at a suitably licensed facility.</li> <li>• Removed stone filling/spoil and other waste rock material generated during the construction phase will be stored on the island for re-use during general maintenance and repair works to the lighthouse road and seawall.</li> </ul> <p>No operational phase wastes are envisaged.</p>
<b>Identification of wastes arising and other residues (including quantities) that may be of particular concern in the context of the Natura 2000 network</b>	<ul style="list-style-type: none"> <li>• Mortar/ lime mortar, mortar washout</li> <li>• Paint/primer etc.</li> <li>• Fuel/oil residue generator (minor quantity)</li> </ul>
<b>Description of any additional services required to implement the project or plan, their location and means of construction</b>	<p>Existing services and living accommodation are available on the island for workers for the duration of the works.</p> <p><i>Water shall be brought to the site for mixing lime mortar. Electricity shall be provided by means of a diesel powered generator.</i></p>

## 4.2 Description of project location

Skellig Michael is an island off southwest Ireland in the Atlantic Ocean. It lies approximately 12km off the Iveragh Peninsula in Co. Kerry (refer to Figure.4 below). The island forms part of the Skelligs SPA and is a World Heritage site, being home to an Early Christian settlement with well-preserved access steps, a monastery, a remote hermitage and other monastic structures. The island's isolation has helped to preserve and protect these monastic remains (DHLGH & OPW, 2020).



Figure 4: Project location

## 4.3 Baseline Characterisation

### 4.3.1 Overview of Baseline Data

The site of the proposed works is located on the lighthouse road at Cross Cove, Skellig Michael, Co. Kerry - within the Skelligs SPA (004007). This island is a World Heritage Site and Statutory Nature Reserve which is subject to regular tourist footfall as well as maintenance works teams throughout the summer season. Data which informs this report was gathered in summer 2021 from mid-May to October.

#### 4.3.2 Habitats

##### *Rocky Sea Cliffs CS1*

Rocky cliffs of varying heights surround the island. The bases of these cliffs tend to be smoother where erosion is evident and exposed bed shows signs of past collapses. The upper sections comprise of more ledges and crevices. Vegetation has built up in several areas and is usually dominated by Sea Campion or Thrift, in less exposed areas the vegetation varies and grasses such as Red Fescue and Yorkshire Fog are found. These cliffs provide nesting habitat for several bird species listed on the Skelligs SPA (004007) conservation objectives: Fulmar (*Fulmaris glacialis*), Kittiwake (*Rissa tridactyla*), Guillemot (*Uria aalge*) and Puffin (*Fratercula arctica*).

##### *Stonewalls and Other Stonework BL1*

Old stone walls and stairways of an ancient monastic settlement are found across the site and these provide nesting habitat for several bird species listed on the Skelligs SPA (004007) conservation objectives. The primary protected species associated with this type of habitat which is listed on the conservation objectives of the site is the Storm Petrel (*Hydrobates pelagicus*).

##### *Buildings and artificial surfaces BL3*

Buildings on the island consist of workers huts and associated storage buildings, a helipad, lighthouses and associated outbuildings, and a public composting toilet. These structures provide an important habitat for lichens and bryophytes on the island.

##### *Sea Walls Piers and Jetties CC1*

This habitat comprises of the landing pier which is located at Blind Man's Cove.

##### *Open Marine Water MW1*

Open marine water completely surrounds the island and is important for a variety of marine species.

##### *Sea Inlets and Bays MW2*

There are several naturally occurring inlets and bays located around the island including the landing at the North Steps, Seals Cove and Blind Man's Cove.

#### 4.3.3 Mammals

An assessment of the likely presence of protected and notable mammal and aquatic species, listed on Annexes II, IV and V of the Habitats Directive and under the Wildlife Act 1976-2012 was undertaken. Records of terrestrial mammals were searched for through The National Biodiversity Data Centre (NBDC) and the most recent records taken from ecological survey work carried out on the island from May to October 2021 and are listed in Table 4 below.

Table 4 Mammals recorded on/from the site

Species (Common name)	Species (Scientific name)	Date recorded	Designation
<b>Common Pipistrelle</b>	<i>Pipistrellus pipistrellus</i>	31-Aug-2021	Protected Species: EU Habitats Directive    Protected Species: EU Habitats Directive >> Annex IV    Protected Species: Wildlife Acts
<b>Soprano Pipistrelle</b>	<i>Pipistrellus pygmaeus</i>	04-Sept-2021	Protected Species: EU Habitats Directive    Protected Species: EU Habitats Directive >> Annex IV    Protected Species: Wildlife Acts
<b>Nathusius' Pipistrelle</b>	<i>Pipistrellus nathusii</i>	03-Sept-2021	Protected Species: EU Habitats Directive    Protected Species: EU Habitats Directive >> Annex IV    Protected Species: Wildlife Acts
<b>Leisler's Bat</b>	<i>Nyctalus leisleri</i>	04-Sept-2021	Protected Species: EU Habitats Directive    Protected Species: EU Habitats Directive >> Annex IV    Protected Species: Wildlife Acts
<b>Grey Seal</b>	<i>Halichoerus grypus</i>	23-Aug-2021	Protected Species: EU Habitats Directive    Protected Species: EU Habitats Directive >> Annex II    Protected Species: EU Habitats Directive >> Annex V    Protected Species: Wildlife Acts
<b>Bottlenose Dolphin</b>	<i>Tursiops truncatus</i>	23-Jun-2021	Protected Species: EU Habitats Directive    Protected Species: EU Habitats Directive >> Annex II    Protected Species: EU Habitats Directive >> Annex IV    Protected Species: Wildlife Acts
<b>Common Dolphin</b>	<i>Delphinus delphis</i>	23-Aug-2021	Protected Species: EU Habitats Directive    Protected Species: EU Habitats Directive >> Annex IV    Protected Species: Wildlife Acts
<b>Risso's Dolphin</b>	<i>Grampus griseus</i>	23-Aug-2021	Protected Species: EU Habitats Directive    Protected Species: EU Habitats Directive >> Annex IV    Protected Species: Wildlife Acts
<b>Harbour Porpoise</b>	<i>Phocoena phocoena</i>	23-Aug-2021	Protected Species: EU Habitats Directive    Protected Species: EU Habitats Directive >> Annex II    Protected Species: EU Habitats Directive >> Annex IV    Protected Species: Wildlife Acts    Threatened Species: OSPAR Convention
<b>Fin Whale</b>	<i>Balaenoptera physalus</i>	04-Aug-2021	Protected Species: EU Habitats Directive    Protected Species: EU Habitats Directive >> Annex IV    Protected Species: Wildlife Acts
<b>Humpback Whale</b>	<i>Megaptera novaeangliae</i>	20-Jul-2021	Protected Species: EU Habitats Directive    Protected Species: EU Habitats Directive >> Annex IV    Protected Species: Wildlife Acts
<b>Minke Whale</b>	<i>Balenoptera acutorostrata</i>	10-Aug-2021	Protected Species: EU Habitats Directive    Protected Species: EU Habitats Directive >> Annex IV    Protected Species: Wildlife Acts
<b>European Rabbit</b>	<i>Oryctolagus cuniculus</i>	11-Oct-2021	Invasive Species: Invasive Species    Invasive Species: Invasive Species >> Medium Impact Invasive Species
<b>House Mouse</b>	<i>Mus musculus</i>	11-Oct-2021	Invasive Species: Invasive Species    Invasive Species: Invasive Species >> High Impact Invasive Species

#### 4.3.4 Avifauna

Skellig Michael is the larger of two islands in The Skelligs SPA. During the course of Ecological survey work carried out from May to October 2021 by Envirico ecologist Brian Power, the following avifauna were recorded on or from the island. Special conservation interests (SCIs) of the Skelligs SPA are highlighted in bold.

Table 5 Birds recorded on/from the site

Species (Common name)	Species (Scientific name)	First Date Recorded	Confirmed Breeding
<b>Fulmar</b>	<b><i>Fulmarus glacialis</i></b>	18-May-21	Y
<b>Manx Shearwater</b>	<b><i>Puffinus puffinus</i></b>	18-May-21	Y
<b>Storm Petrel</b>	<b><i>Hydrobates pelagicus</i></b>	18-May-21	Y
<b>Gannet</b>	<b><i>Morus bassana</i></b>	18-May-21	Y
<b>Kittiwake</b>	<b><i>Rissa tridactyla</i></b>	18-May-21	Y
<b>Puffin</b>	<b><i>Fratercula arctica</i></b>	18-May-21	Y
<b>Guillemot</b>	<b><i>Uria aalge</i></b>	18-May-21	Y
<b>Shag</b>	<i>Phalacrocorax aristotelis</i>	18-May-21	Y
<b>Peregrine</b>	<i>Falco peregrinus</i>	18-May-21	Y
<b>Herring Gull</b>	<i>Larus argentatus</i>	18-May-21	Y
<b>Great Black-backed Gull</b>	<i>Larus marinus</i>	18-May-21	Y
<b>Lesser Black-backed Gull</b>	<i>Larus fuscus</i>	18-May-21	Y
<b>Razorbill</b>	<i>Alca torda</i>	18-May-21	Y
<b>Rock Pipit</b>	<i>Anthus petrosus</i>	18-May-21	Y
<b>Wheatear</b>	<i>Oenanthe oenanthe</i>	21-May-21	Y
<b>Chough</b>	<i>Pyrrhocorax pyrrhocorax</i>	18-May-21	Y
<b>Hooded Crow</b>	<i>Corvus cornix</i>	01-Jun-21	Y
<b>Raven</b>	<i>Corvus corvax</i>	18-May-21	Y
<b>Cory's Shearwater</b>	<i>Calonectris borealis</i>	02-Jun-21	N
<b>Oystercatcher</b>	<i>Haematopus ostralegus</i>	22-May-21	N
<b>Pomarine Skua</b>	<i>Stercorarius pomarinus</i>	19-May-21	N
<b>Feral Pigeon</b>	<i>Columba livia domestica</i>	01-Jun-21	N
<b>Barn Swallow</b>	<i>Hirundo rustica</i>	28-May-21	N
<b>House Martin</b>	<i>Delichon urbicum</i>	01-Jun-21	N
<b>Meadow Pipit</b>	<i>Anthus pratensis</i>	19-May-21	N
<b>Pied Wagtail</b>	<i>Motacilla alba yarrellii</i>	18-May-21	N
<b>Willow Warbler</b>	<i>Phylloscopus trochilus</i>	28-May-21	N



<b>Chiffchaff</b>	<i>Phylloscopus collybita</i>	30-May-21	N
<b>Sooty Shearwater</b>	<i>Ardenna grisea</i>	20-Jun-21	N
<b>Collared Dove</b>	<i>Streptopelia decaocto</i>	22-Jun-21	N
<b>Rose Coloured Starling</b>	<i>Pastor roseus</i>	24-Jun-21	N
<b>Cormorant</b>	<i>Phalacrocorax carbo</i>	08-Jul-21	N
<b>Swift</b>	<i>Apus apus</i>	17-Jul-21	N
<b>Starling</b>	<i>Sturnus vulgaris</i>	18-Jul-21	N
<b>Balearic Shearwater</b>	<i>Puffinus mauretanicus</i>	19-Jul-21	N
<b>Leach's Petrel</b>	<i>Hydrobates leucorhous</i>	19-Jul-21	N
<b>Great Shearwater</b>	<i>Ardenna gravis</i>	05-Aug-21	N
<b>Turnstone</b>	<i>Arenaria interpres</i>	06-Aug-21	N
<b>Purple Sandpiper</b>	<i>Calidris maritima</i>	06-Aug-21	N
<b>Great Skua</b>	<i>Stercorarius skua</i>	10-Aug-21	N
<b>Curlew</b>	<i>Numenius arquata</i>	10-Aug-21	N
<b>Long-tailed Skua</b>	<i>Stercorarius longicaudus</i>	10-Aug-21	N
<b>Arctic tern</b>	<i>Sterna paradisaea</i>	18-Aug-21	N
<b>Artic Skua</b>	<i>Stercorarius parasiticus</i>	15-Sep-21	N
<b>Pied Flycatcher</b>	<i>Ficedula hypoleuca</i>	30-Aug-21	N
<b>Sedge Warbler</b>	<i>Acrocephalus schoenobaenus</i>	30-Aug-21	N
<b>Robin</b>	<i>Erithacus rubecula</i>	30-Aug-21	N
<b>Spotted Flycatcher</b>	<i>Musciapa striata</i>	30-Aug-21	N
<b>Snow Bunting</b>	<i>Plectrophenax nivalis</i>	11-Oct-21	N
<b>Kestrel</b>	<i>Falco tinnunculus</i>	14-Sep-21	N

#### 4.3.5 Invasive Species

Two species listed on the Non-native species Risk Assessment for Ireland were observed on the island. House Mouse (*Mus musculus*) is listed on the High-Risk category (with a score of 20/25) and was recorded regularly over summer 2021. European Rabbit (*Oryctolagus cuniculus*) is listed on the Medium Risk Category (with a score of 16/25) was also recorded regularly on the island.

#### 4.3.6 Aquatic Environment

There were no freshwater aquatic features within the confines of, or adjacent to the site. The marine water environment is characterised by Figures 5 and 6 below. The Southwestern Atlantic Seaboard (HAs 21;22) is the coastal water body adjacent to the site and within the Skelligs SPA (004007). Water Framework Directive status of this coastal water body is as of yet unassigned. This water body is deemed Not at Risk by the EPA.

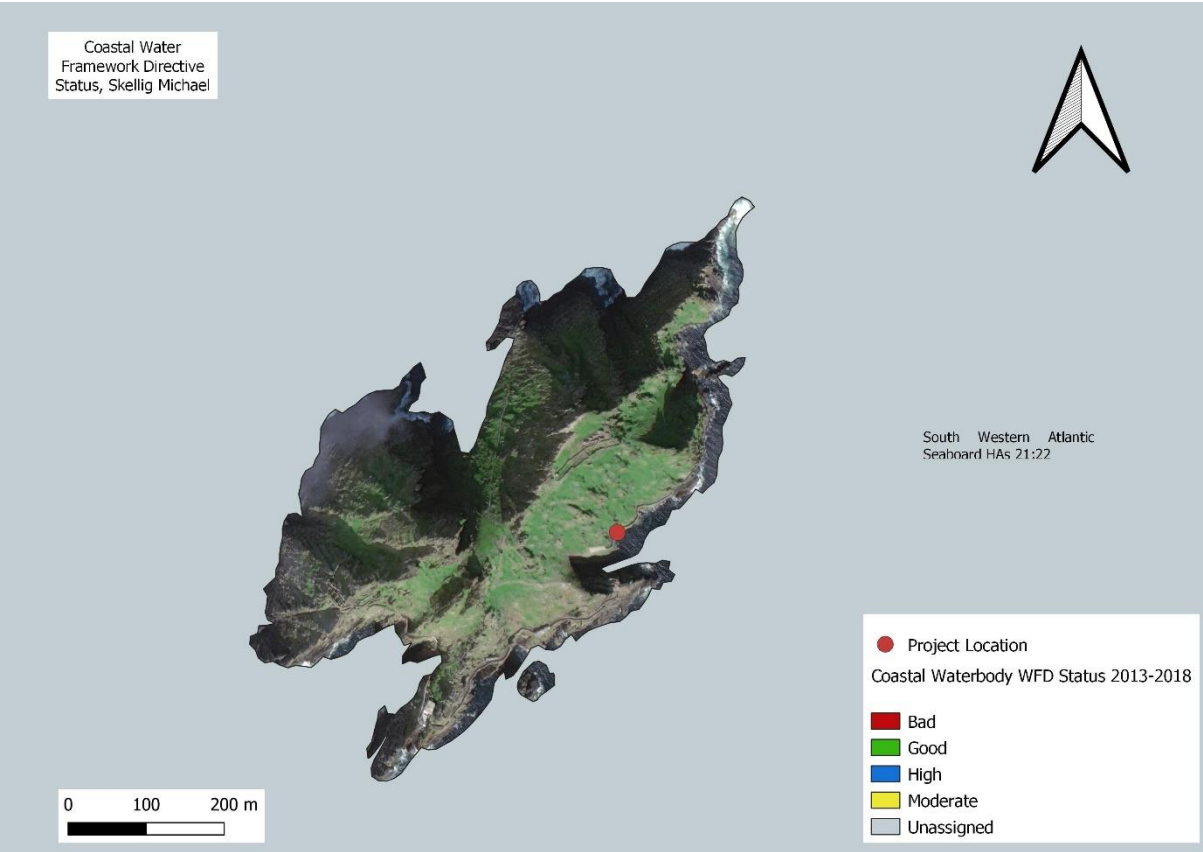


Figure 5: Coastal Water Framework Directive Status

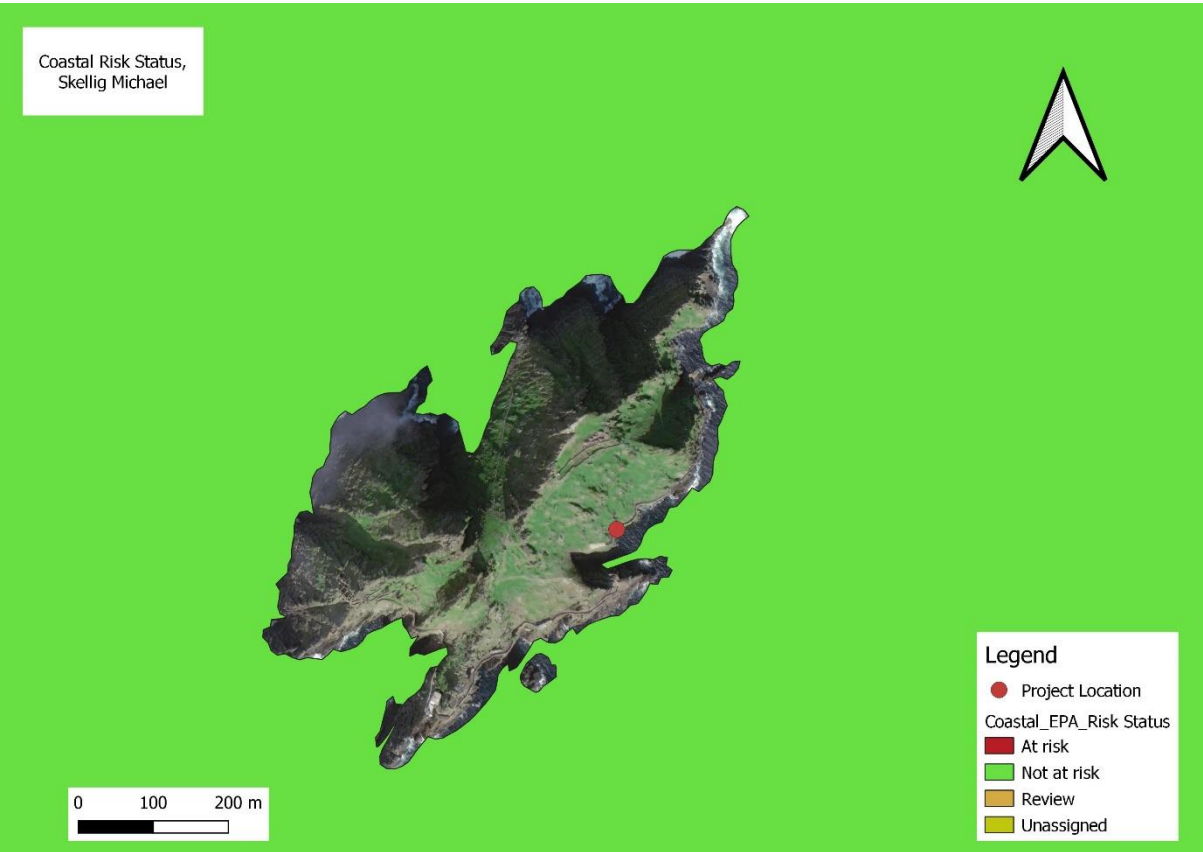


Figure 6: Risk Status of Coastal Waterbodies

#### 4.4 Identification of European Sites

The site of the proposed works is within the boundary of the Skelligs SPA (004007), which is located approximately 12km from the mainland. There are three other Natura 2000 sites within a 15km radius. However, these are not considered to be within the Zone of Influence owing to the isolated nature of the site and a lack of connectivity.

#### 4.5 Assessment of Potential Likely Significant Effects

Based on the project description as set out in Section 4.1 and the Zone of Influence of the project, using professional judgement and published guidance, potential effects can be identified. Table 6 focuses on the potential effects that could occur during the construction and operational phase of the proposed project.

Table 6 Potential LSEs

Description of LSE	Potential Pathway
<b><i>Description of elements of the project likely to give rise to potential ecological impacts.</i></b>	<ul style="list-style-type: none"> <li>• Works will be conducted entirely within a Natura 2000 site (Skelligs SPA)</li> <li>• Works are scheduled to take place during the breeding season for some SCI species</li> <li>• Works will be conducted within close proximity to known SCI breeding colonies and/or potential SCI breeding habitat.</li> </ul>
<b><i>Describe any likely direct, indirect or secondary ecological impacts of the project (either alone or in combination with other plans or projects) by virtue of:</i></b> <ul style="list-style-type: none"> <li>• <b><i>Size and scale;</i></b></li> <li>• <b><i>Land-take;</i></b></li> <li>• <b><i>Distance from Natura 2000 Site or key features of the Site;</i></b></li> <li>• <b><i>Resource requirements;</i></b></li> <li>• <b><i>Emissions;</i></b></li> <li>• <b><i>Excavation requirements;</i></b></li> <li>• <b><i>Transportation requirements;</i></b></li> <li>• <b><i>Duration of construction, operation etc.</i></b></li> </ul>	<b>Construction Phase</b> <ul style="list-style-type: none"> <li>• Potential disturbance/displacement of nesting SCIs in wall cavities or openings.</li> <li>• Potential disturbance/displacement of SCIs during the breeding season as a result of fugitive noise emissions/vibration and increased human activity for duration of works.</li> <li>• Potential collision due to the temporary working platform if required or falling stone debris from the seaward side of the damaged sea wall.</li> </ul>

	<ul style="list-style-type: none"> <li>• Potential water quality impacts through use of mortar, lime, fuel etc.</li> </ul> <p><b>No Operational Phase for the proposed works</b></p>
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#### 4.5.1 Potential In-combination Effects

AA Screening must identify all aspects of the project which would have Likely Significant Effects European site, either alone (as identified in Table 6) or in-combination with other aspects of the same project and/or with other plans or projects. Two types of in-combination effects should be considered. Intra-project effects are the combined effects of different types of impact within the proposed project, for example the combined effects of disturbance and changes to water quality. Inter-project impacts are combined impacts from different projects and those resulting from the proposal, for example, a similar operation in close proximity. Inter-project in-combination effects are considered to be those that may arise from the project in-combination with other plans and projects that are completed, as well as those proposed and consented but not yet built and operational. Plans or projects that are proposed (but not yet approved) should also be considered in this context (EC, 2002). A search for relevant plans and projects within the ZOI was undertaken for assessment of in-combination impacts, the source listed below were searched:

Kerry County Council

An Bord Pleanála

Owing to the isolated nature of the site and the absence of any other projects in the area there is no potential for in-combination effects.

#### 4.6 Screening Conclusion

Following examination of the proposed project, including the nature and location of works, it has been concluded that there is potential for Likely Significant Effects to occur for:

##### **Skelligs SPA 004007**

The proposed project has the potential to impact on the SCIs of the Skelligs SPA. In the absence of mitigation, impacts could be significant. This Screening for AA has established that the proposed project has the potential to undermine the conservation objectives for the site, either alone, or in combination with other plans or projects. Therefore, an Appropriate Assessment (AA) of the proposed project is required. Further assessment of the potential impacts on the SPA will be required through the preparation of a NIS (Natura Impact Statement).

## 5 Information for Appropriate Assessment

### 5.1 General Ecology of the Area

The proposed project site is located within the Skelligs SPA (004007). No Annex I species were recorded within the boundary of the proposed works area. Seven species of bird are listed as SCIs for the Skelligs SPA, six of which nest on Skellig Michael. A complete list of these species can be found in Table 2. Storm Petrels can be present in wall cavities or openings but not in high density, Puffins nest on ledges in close proximity to the proposed works with Fulmar, Kittiwake and Guillemot nesting below the sea wall on cliff ledges. No Manx Shearwater nests are known from the immediate area.

Habitats and flora within the proposed development site were classified using the Heritage Council's Guide to Habitats in Ireland (Fossitt, 2000). Within each habitat, dominant and abundant plant species and indicator species were recorded. Habitats recorded within the proposed development site comprised the following;

- Rocky Sea Cliffs (CS1)
- Stone Walls and other stonework (BL1)
- Buildings and Artificial Surfaces (BL3)
- Sea walls, Piers and Jetties (CC1)
- Open Marine Water (MW1)
- Sea inlets and bays (MW2)

A search of the National Biodiversity Data Centre (NBDC) database identified no Annex IV (Habitats Directive) species. This search identified the presence of two invasive species on the Island, House mouse and European rabbit.

Four species of bat were recorded on the island between the 28<sup>th</sup> of August and 5<sup>th</sup> of September 2021 (see Table 5). No suitable roost habitat is located within the proposed project area.

### 5.2. European Sites Taken to Stage 2 AA (Skelligs SPA (004007))

The proposed project site is within the Skelligs SPA (004007). The Skelligs SPA lies in the Atlantic Ocean and is comprised of Skellig Michael, Little Skellig and some of the surrounding marine area.

The geology of the island consists of primarily red conglomerate, sandstone and mudstone. The SCIs for the site are listed in Table 2 and discussed in detail in section 5.3.

### 5.3 Special Conservation Interests Potentially Impacted by the Proposed Development

#### 5.3.1 Fulmar (*Fulmarus glacialis*)

Fulmars are a member of the tubenose family that nest on cliffs and ledges around Ireland and other coastal areas in the North Atlantic. The majority of Irish birds are found in the west of the country (Mitchell et al., 2004). Fulmars are on the Amber List of Birds of Conservation Concern, Ireland (BoCCI)



2020-2026 (Gilbert, et al., 2021). Work on Scottish colonies suggests that breeding begins in mid-May, with chicks subsequently fledging in late August (Edwards et al., 2013). Work on Skellig Michael during the 2021 season suggests this pattern is similar on the island (B Power 2021, personal communication).

#### 5.3.2 Puffin (*Fratercula arctica*)

Puffins are one of three species of Auk breeding on Skellig Michael, and are found well distributed throughout the North Atlantic (Mitchell, et al., 2004). They are typically a burrow nesting species of seabird (Finney, et al., 2001). The breeding period typically begins in late April/May when a single egg is laid with at least some eggs hatched by mid-May (Taylor, et al., 2012). Estimates of the fledging period vary from 36 to 83 days (DEHLG, 2015; Taylor, et al., 2012; Finney, et al., 2001). Work on Skellig Michael during 2021 suggests this pattern is similar on the island (B Power 2021, personal communication). They are on the Red List of Birds of Conservation Concern, Ireland (BoCCI) 2020-2026 (Gilbert, et al., 2021).

#### 5.3.3 Storm Petrel (*Hydrobates pelagicus*)

Storm petrel are a small pelagic species of seabird found throughout the North Atlantic (Mitchell, et al., 2004). In Ireland the breeding population is mainly associated with islands off the west coast. The breeding period typically commences in May/June (DEHLG, 2015), with the majority of eggs laid in late June (Ratcliffe, et al., 1998). Hatching typically occurs between mid-July and mid-Aug with average departure dates on Skokholm Island in Wales, ranging from 6th September – 20th October (Davies, 1957). However, the species has a highly variable phenology. They are on the Amber List of Birds of Conservation Concern, Ireland (BoCCI) 2020-2026 (Gilbert, et al., 2021).

#### 5.3.4 Kittiwake (*Rissa tridactyla*)

Kittiwakes are a species of gull found throughout the Northern Hemisphere. They are often a colonial nesting species (Mitchell, et al., 2004). The breeding season typically begins within the first two weeks of May (Mitchell, et al., 2004; Taylor, et al., 2012), although sometimes as early as January or February (DEHLG, 2015). Fledging occurs between five and seven weeks (Vincenzi & Mangel, 2013). Work on the island during the 2021 season showed Kittiwakes following this pattern (B Power 2021, personal communication). Skellig Michael holds nationally important numbers of kittiwake. Data collected under the National Seabird Monitoring Programme over the period 2013 – 2018 estimated the breeding population of kittiwake on Skellig Michael to comprise 789 apparently occupied nests (Cummins et al., 2019) Kittiwakes are on the Red List of Birds of Conservation Concern, Ireland (BoCCI) 2020-2026 (Gilbert, et al., 2021).

#### 5.3.5 Guillemot (*Uria aalge*)

Guillemots are a species of auk that nest on outer sea cliffs of the island. In Ireland their distribution is scattered around the coast with Dublin, Wexford and Clare holding large colonies (Mitchell, et al.,

2004). Guillemots are on the Amber List of Birds of Conservation Concern, Ireland (BoCCI) 2020-2026. The breeding season usually commences in late March/April with young typically leave the nest sometime between mid-June and mid-July where they continue to develop at sea (Birkhead, et al., 2012; Taylor, et al., 2012).

#### 5.3.6 Manx Shearwater (*Puffinus puffinus*)

Manx shearwaters are medium-sized pelagic seabirds found throughout the North Atlantic. Ireland holds high breeding numbers of the species with Britain and Ireland have the majority of the global breeding population (Mitchell, et al., 2004). Manx Shearwater are on the Amber List of Birds of Conservation Concern, Ireland (BoCCI) 2020-2026. Populations in Ireland have a localised breeding distribution (Gilbert, et al., 2021), with the majority of the population found on islands mainly off the coast of counties Kerry and Galway (Mitchell, et al., 2004).

#### 5.5 Appraisal for Potential Impacts on Skelligs SPA (004007)

When Natura 2000 sites are selected for Stage 2 assessments, then all the qualifying features of conservation interest must be included in that stage of the assessment. However, when assessing impact, qualifying features are only considered relevant where a credible or tangible source- pathway-receptor link exists between the proposed development and a protected species or habitat type. In order for an impact to occur there must be a risk initiated by having a 'source' (e.g. nearby watercourse), a 'receptor' (e.g. a protected species associated aquatic or riparian habitats), and an impact pathway between the source and the receptor (e.g. a watercourse which connects the proposed development site to the site designated for the protection of the aforementioned species).

Identifying a risk that could, in theory, cause an impact does not automatically mean that the risk event will occur, or that it will cause or create an adverse impact. However, identification of the risk does mean that there is a latent possibility of ecological or environmental damage occurring, with the level and significance of the impact depending upon the nature of the risk, the extent of the exposure to the risk and the characteristics of the receptor. Therefore, bearing in mind the scope, scale, nature and the timing of the project, its location relative to the spatial distribution of the species listed above on the island and within the SPA boundary and the degree of connectedness that exists between the project and potential receptors, it is considered that not all SCIs are within the zone of potential impact of the proposal.

An evaluation based on these factors to determine which of the SCIs for the SPA are the plausible ecological receptors for potential impacts of the unmitigated proposal has been conducted and is summarised here under in Table 7. This was done through a scientific examination of ecological evidence and data listed above in Section 3 or referenced in the text. This evaluation has determined that certain species should not be selected for further assessment as they are not considered plausible

ecological receptors. Supporting rationale as to why each qualifying feature is or is not included for further assessment is provided in the table. Following this, an assessment is made of the potentially significant effects arising from the proposal

Table 7 Selection of qualifying features of the Skelligs SPA for impact assessment

Qualifying Feature	Potential for Significant Impacts	Rationale
<b>Fulmar</b>	<b>Yes</b>	<ul style="list-style-type: none"> <li>– Fulmar do not utilise any of the habitats within the footprint of the works for nesting; however, they may nest on surrounding cliff-faces and rock ledges.</li> <li>– Construction works will potentially overlap with the fulmar breeding season.</li> <li>– There is potential for direct/indirect disturbance/displacement of fulmar during the construction phase.</li> </ul>
<b>Manx shearwater</b>	<b>Yes</b>	<ul style="list-style-type: none"> <li>– Suitable nesting habitat for Manx shearwater does not occur within the footprint of the works; however, breeding Manx shearwater may occur in suitable areas on surrounding cliff- ledges in the greater area.</li> <li>– Construction works will potentially overlap with the Manx shearwater breeding season.</li> <li>– There is potential for direct/indirect disturbance/displacement of Manx shearwater during the construction phase.</li> </ul>
<b>Kittiwake</b>	<b>Yes</b>	<ul style="list-style-type: none"> <li>– While kittiwake do not utilise any of the habitats within the footprint of the works for nesting, they do nest on surrounding cliff-faces and rock ledges. A kittiwake sub-colony is located in Seal Cove where Crash Deck 2 and Crash Deck 3 are located.</li> <li>– Construction works will potentially overlap with the kittiwake breeding season.</li> <li>– There is potential for direct/indirect disturbance/displacement of kittiwake during the construction phase.</li> </ul>
<b>Guillemot</b>	<b>Yes</b>	<ul style="list-style-type: none"> <li>– Guillemot do not utilise any of the habitats within the footprint of the works for nesting; however, they do nest on some surrounding cliff-faces and rock ledges. A guillemot sub-colony is located in Seal Cove where Crash Deck 2 and Crash Deck 3 are located.</li> <li>– Due to the timing of the proposed works, there is potential for overlap between the works and the latter end of the guillemot breeding season.</li> <li>– Based on precautionary principle, there is potential for direct/indirect disturbance/displacement of guillemot during the construction phase.</li> </ul>

<b>Storm petrel</b>	<b>Yes</b>	<ul style="list-style-type: none"> <li>– Storm petrels utilise suitable stone walls and other man-made structures throughout the island for nesting.</li> <li>– Works will take place during the storm petrel breeding season.</li> <li>– There is potential for storm petrels to occur in proximity to the proposed works (either within crevice's in the seawall or in other suitable surrounding areas.</li> <li>– There is potential for direct/indirect disturbance/displacement impacts to storm petrel during the construction phase.</li> </ul>
<b>Puffin</b>	<b>Yes</b>	<ul style="list-style-type: none"> <li>– Suitable nesting habitat for puffin does not occur within the footprint of the works; however, puffin utilise the cliff slopes in the general area, including directly above the OPW workers huts, for nesting.</li> <li>– The works will take place largely outside the main breeding season for puffin but low numbers of puffin could still remain on the island at the time of the works.</li> <li>– As there is some potential for works to overlap with the puffin breeding season on the island, and on a precautionary basis, there is some potential for direct/indirect disturbance/ displacement of puffin during the construction phase.</li> </ul>
<b>Gannet</b>	<b>No</b>	<ul style="list-style-type: none"> <li>– Gannet do not breed on Skellig Michael, and do not typically occur on the island at all. The gannet breeding colony within the SPA is confined to Little Skellig, located at a remove of 3 km from Skellig Michael.</li> <li>– No potentially significant effects on gannet are envisaged as a</li> <li>– result of the project.</li> </ul>

## 6 Assessment of Potentially Significant Effects to Natura 2000 Sites

There follows an evaluation of the potential ecological impacts identified above which may arise as a result of the proposed works on the qualifying features that have been selected for impact assessment in **Section 5** above and determines whether the proposal is likely to have adverse effects on the Conservation Objectives of the Skelligs SPA.

### 6.1 Likely adverse effects

The likelihood of adverse effects to the Skelligs SPA from the proposed works has been determined based on a number of indicators including:

- Water quality
- Habitat loss or alteration
- Disturbance and/or displacement of species
- Potential collisions

The likelihood of significant cumulative/in-combination effects is assessed in **Section 6.4** below.

#### 6.1.1 Water Quality

The proposed works will take place entirely on Skellig Michael, an off-shore island. There are no natural watercourses or waterbodies on the island. However, there is an existing network of manmade drainage channels and gullies along parts of the roadway, which convey rainwater from the road to the surrounding marine waters. There are several elements of the proposed repair works which have the potential to impact on water quality.

Storage and use of fuels/oil for the generator, paint and primer, albeit comprising minor quantities, poses some degree of risk to the aquatic environment in the event of contaminated surface run-off making its way into the surrounding marine waters either from their respective storage locations or the works areas themselves. Mortar and lime required for the works will be prepared at the proposed repair works location and will be used in-situ for the sea wall repairs and re-pointing works. While this will minimise the requirement for handling and transport of this material, there is also risk to marine water quality in the event of uncontrolled run-off of uncured mortar and/or lime mortar washout to the existing drainage network during rainfall events, or through accidental spillage/improper storage. Mortar, cementitious materials and lime are highly-alkaline substances which are toxic to aquatic life. This existing drainage network provides a direct pathway through which water quality impacts could arise. The naturally steep topography of the island increases the risk posed to marine water quality.

The works will involve repairs to the existing sea wall by use of existing stone on the island and mortar by use of hand tools. Wholesome dust and other fines will be generated during these works such as mixing of mortar and chiselling of stone to the required dimensions for the sea wall, the volumes which are envisaged are not expected to have the potential to result in significant water quality impacts in the event that fines make their way to the marine zone. However, on a precautionary basis, mitigation measures for protection of water quality from the use of such substances as cement, lime and fuel are proposed with regards to this aspect of the works.

#### 6.1.2 Habitat Loss/Alteration

Habitat fragmentation has been defined as ‘reduction and isolation of patches of natural environment’ (Hall *et al.*, 1997 cited in Franklin *et al.*, 2002) which results in spatial separation of habitat areas which had previously been in a state of greater continuity. Adverse effects of habitat fragmentation on species or populations can include increased isolation of populations which can detrimentally impact on the resilience or robustness of the populations thereby reducing overall species diversity and altering species abundance.

Storm petrels utilise stone walls and other man-made structures throughout the island for nesting. The proposal will result in construction activity on the damaged masonry seawall on the Lighthouse Road, which comprises of potential nesting habitat for storm petrel. Previous surveys found that hatching generally occurred in the first two weeks of August with fledging commencing at the end of September, therefore, works will overlap with the breeding season for storm petrel. There is potential for adult and juvenile storm petrels to occur within the seawall and in other suitable areas e.g. natural crevices in surrounding slopes.

Puffins do not utilise any of the habitats within the footprint of the works for nesting; however, suitable nesting habitat occurs within proximity of the works. Puffins are known to nest on the slopes above the OPW accommodation huts, adjacent to the location of **Crash Deck 1**. Previous surveys found that by mid-July the bulk of young puffins were departing the nests. By the second week of August, puffins were virtually absent from the island. The bulk of the works will take place largely outside the main breeding season for puffin but low numbers of puffin could potentially still remain on the island at the time of the works.

Guillemot do not utilise any of the habitats within the footprint of the works for nesting; however, they do nest on surrounding cliff-faces and rock ledges, with a sub-colony located in Seal Cove. Previous surveys found that the guillemot sub-colony located at Cross Cove was virtually empty by early July. Due to the timing of the works, construction activity will largely take place outside the main Guillemot breeding season, so construction related disturbance or displacement impacts could



potentially occur, on low numbers of guillemots still present on the cliff ledges below the damaged seawall.

Kittiwake do not utilise any of the habitats within the footprint of the works for nesting; however, they do nest on surrounding cliff-faces and rock ledges, with a kittiwake sub-colony occupying Seal Cove where **Crash Deck 2** and **Crash Deck 3** are located. Previous surveys found that by mid-July the majority of kittiwake juveniles had departed the Cross Cove sub-colony. A small number were found to still occur in August with the entire Cross Cove colony having left by the start of September. Construction works will potentially overlap with the end of the kittiwake breeding season.

Given the location and timing of the works, it is likely that adult and/or young storm petrels and puffins will occur within the immediate vicinity of the works. The intact structure of the sea wall adjacent to the damaged section of wall, is tightly packed and pointed with mortar with hardly any crevices present, although there is potential for storm petrels to be present. In relation to storm petrel, it is noted that works will take place during daylight hours and so will not coincide with adult storm petrels returning to nesting sites during the hours of darkness.

Significant habitat loss/alteration or species disturbance or displacement impacts are not envisaged due to the small scale of the proposed works. While, in the absence of control measures, it is considered that there is potential for adverse marine water quality impacts, in the event of this occurring, any impacts to marine water quality are expected to be relatively localised in extent and thus are not expected to have the potential to result in significant habitat or species fragmentation impacts within the SPA.

In summary, it is not considered that the proposal has potential to result in significant habitat or species fragmentation impacts within the SPA; however, mitigation measures are proposed with regard to the works, in particular in relation to protection of water quality, as discussed above in **Section 6.1.1** and further outlined in **Section 7** below.

#### 6.1.3 Disturbance and/or Displacement of Species

Due to their greater potential to occur in the immediate vicinity of the works, it is considered that storm petrel and puffin have the most potential to be subjected to potential disturbance/displacement impacts as a result of human presence and fugitive noise associated with construction activity. However, given that storm petrels and puffins successfully breed within very close proximity to considerable volumes of people throughout each breeding season e.g. within cavities in the steps, monastery walls, burrows adjacent to areas regularly used by people etc, it is considered likely that storm petrels and puffins are habituated to some degree of activity.

There will be increased human activity, albeit a maximum of 6 workers, in the work areas for the duration of the works. Bearing in mind that on any given day during the summer months the maximum number of daily visitors permitted on the island are present throughout much of the site over a relatively short period, it is expected that breeding seabirds on Skellig Michael can be expected to be habituated to a moderate degree of human activity. In relation to the human resources required to carry out the works, this aspect of the proposal does not comprise any great increase in human activity over and above that which exists at background level on the island over each summer season.

The proposed works will be restricted to one specific location along the Lighthouse Road and to within the footprint of the roadway and temporary working platform. Power tools may be used if new anchor points are required for a temporary work platform, noise generation will have potential to disturb nesting or loafing birds. The use of power tools will be limited to the installation of the working platform if required. The repair works on the sea wall will require the use of chisels on stones to form the required stone dimensions for the wall. It is noted however that the works will not require the use of heavy machinery and sea wall repairs will be undertaken by use of hand tools. Excessive fugitive noise emissions are not envisaged from the works and thus significant disturbance, or displacement of any SCIs is not expected from construction activity. Breeding storm petrel located in close proximity to the proposed works areas may be subject to potential disturbance or displacement impacts. However, in order to minimise potential disturbance or displacement impacts to SCIs, namely storm petrel, puffin, fulmar, Manx shearwater and kittiwake, on a precautionary basis, general protective mitigation measures are included in **Section 7** in relation to construction activity.

#### 6.1.4 Potential Collisions

There is a potential risk of direct collisions with breeding birds nesting beneath the proposed works area and on the slopes below. This risk is in the form of direct impacts with birds by falling dislodged stone material from the damaged wall falling down the cliffs. There is also potential risk from the installation of a temporary work platform if required, dislodging material in the installation process, and falling down the cliff slopes below the proposed works area. Additionally, if a temporary working platform is required for the wall repairs, there is potential for direct collisions from birds with the working platform. The potential risk for direct collisions with a temporary work platform if required is low, as the platform will be restricted to the location of the damaged wall.

While guillemot do not utilise habitat within the works area, they are present in colonies and sub colonies on the cliffs below and kittiwake colony is present adjacent to the works on the cliffs below. Dislodged stone material brought down in an uncontrolled manner may directly impact birds on cliffs.

## 6.2 Assessment of Effects on the Conservation Objectives of the Skelligs SPA

In Section 5 above, an evaluation was undertaken to determine which of the SCIs for the Skelligs SPA potentially lie within the zone of influence of the project and required further assessment in the NIS. This was done through a scientific examination of ecological evidence and data listed above in Section 3 or referenced. In this case, all SCIs apart from gannet, were selected for further assessment (see Section 5 for more information).

The effects of the project on the SCIs as a result of the proposal have been assessed against the measures designed to achieve the Conservation Objectives of the site. In the absence of site-specific Conservation Objectives for the SPA, the Conservation Objectives of other sites for which the same SCIs are designated have been used.

In the case of fulmar, kittiwake, guillemot and puffin, the specific species Attributes and Targets contained within the Saltee Islands SPA (004002) Conservation Objectives (NPWS, 2011) have been used. There are no specific Conservation Objectives available for either Manx shearwater or storm petrel for any designated SPA. Therefore, the Attributes and Targets for puffin, also a ground-nesting seabird species, outlined within the Saltee Islands SPA Conservation Objectives, have been used. The outcome of the assessment has been presented in the following sections.

### 6.2.1 Fulmar [A009]

The conservation objective for fulmar within the Skelligs SPA is to maintain/restore the favourable conservation condition of this species. The specific species Attributes and Targets with regard to fulmar which are defined in relation to the achievement of the Conservation Objectives for the Saltee Islands SPA (NPWS, 2011) are presented in Table 8 below which also includes an assessment of the effects of the project against these measures.

Table 8 Assessment of effects on conservation objectives of fulmar

Attribute/Measure	Target	Assessment of Potentially Significant Effects	Mitigation Required
<b>Breeding population abundance: Apparently Occupied Sites (AOSS)</b>	No significant decline	Yes, there is potential for risk of collision from falling stone debris with breeding birds that may be present in the area	<b>Yes</b>
<b>Productivity rate</b>	No significant decline	No significant decline in productivity rate of fulmar within the SPA is predicted as a result of the proposed works.	<b>No</b>

<b>Distribution: breeding colonies</b>	No significant decline	No significant decline in the distribution of fulmar breeding colonies within the SPA is predicted as a result of the proposed works.	<b>No</b>
<b>Prey biomass available</b>	No significant decline	No significant decline in the prey biomass available to fulmar within the SPA is predicted as a result of the repair works. However, on a precautionary basis, mitigation measures in relation to protection of water quality during construction phase are recommended.	<b>Yes</b>  <b>See Section 7</b>
<b>Barriers to connectivity</b>	No significant increase	There will be no increase in barriers to connectivity for fulmar within the SPA as a result of the proposal.	<b>No</b>
<b>Disturbance at the breeding site</b>	No significant increase	A significant increase in disturbance of fulmar at breeding sites is not envisaged during the construction phase of the sea wall repairs. Mitigation measures are proposed to reduce any potential disturbance impacts to fulmar at breeding sites which may arise as a result of increased human activity and fugitive noise emissions during the construction phase.	<b>Yes</b>  <b>See Section 10</b>
<b>Disturbance at marine areas immediately adjacent to the colony</b>	No significant increase	There will be no increase in disturbance at marine areas adjacent to the fulmar colony as a result of the proposed works.	<b>No</b>

#### 6.2.2 Manx Shearwater [A013]

The conservation objective for Manx shearwater within the Skelligs SPA is to maintain/restore the favourable conservation condition of this species. The specific species Attributes and Targets with regard to puffin for the Saltees SPA (NPWS, 2011), which are used here as a proxy for Manx shearwater, are presented in Table 9 below which also includes an assessment of the effects of the project against these measures.

Table 9 Assessment of effects on conservation objectives of Manx shearwater

Attribute/Measure	Target	Assessment of Potentially Significant Effects	Mitigation Required
<b>Breeding population abundance: Apparently Occupied Sites (AOS)</b>	No significant decline	No significant decline in the breeding population abundance of Manx shearwater within the SPA is predicted as a result of the proposed works.	<b>No</b>
<b>Productivity rate</b>	No significant decline	No significant decline in productivity rate of Manx shearwater within the SPA is predicted as a result of the proposed works.	<b>No</b>
<b>Distribution: breeding colonies</b>	No significant decline	No significant decline in the distribution of Manx shearwater breeding colonies within the SPA is predicted as a result of the proposed works.	<b>No</b>
<b>Prey biomass available</b>	No significant decline	No significant decline in the prey biomass available to Manx shearwater within the SPA is predicted as a result of the proposed works. However, on a precautionary basis, mitigation measures in relation to protection of water quality during construction phase are recommended.	<b>Yes</b> <b>See Section 7</b>
<b>Barriers to connectivity</b>	No significant increase	There will be no increase in barriers to connectivity for Manx shearwater within	<b>No</b>

		the SPA as a result of the proposed works.	
<b>Disturbance at the breeding site</b>	No significant increase	A significant increase in disturbance of Manx shearwater at breeding sites is not envisaged during the construction phase of the proposed works. Mitigation measures are proposed to reduce any potential disturbance impacts to Manx shearwater at breeding site which may arise as a result of increased human activity and fugitive noise emissions during the construction phase.	<b>Yes</b> <b>See Section 7</b>
<b>Disturbance at marine areas immediately adjacent to the colony</b>	No significant increase	There will be no increase in disturbance at marine areas adjacent to the Manx shearwater colony as a result of the proposed works.	<b>No</b>
<b>Occurrence of mammalian predators</b>	Absent or under control	The proposed works will result in multiple boat trips between the island and the mainland over the course of the construction phase. On a precautionary basis, some general mitigation measures in relation to preventing the spread of mammalian predators onto the island are proposed.	<b>Yes</b> <b>See Section 7</b>

### 6.2.3 European Storm Petrel [A014]

The conservation objective for storm petrel within the Skelligs SPA is to maintain/restore the favourable conservation condition of this species. The specific species Attributes and Targets with regard to puffin for the Saltees SPA (NPWS, 2011), which are used here as a proxy for storm petrel, are presented in Table 10 below which also includes an assessment of the effects of the project against these measures.



Table 10 Assessment of effects on conservation objectives of storm petrel

Attribute/Measure	Target	Assessment of Potentially Significant Effects	MitigationRequired
<b>Breeding population abundance: Apparently Occupied Sites (AOS)</b>	No significant decline	Yes, there is some potential for disturbance to breeding birds present within nearby wall cavities of the sea wall to the damaged section of sea wall.	<b>Yes</b> <b>See section 7</b>
<b>Productivity rate</b>	No significant decline	No significant decline in productivity rate of storm petrel within the SPA is predicted as a result of the proposed works.	<b>No</b>
<b>Distribution: breeding colonies</b>	No significant decline	Yes, there is potential for loss of nesting habitat within the sea wall crevices for breeding birds as a result of the proposed works.	<b>Yes</b> <b>See section 7</b>
<b>Prey biomass available</b>	No significant decline	No significant decline in the prey biomass available to storm petrel within the SPA is predicted as a result of the proposed works. However, on a precautionary basis, some general mitigation measures in relation to protection of water quality during construction and operation are recommended.	<b>Yes</b> <b>See Section 7</b>
<b>Barriers to connectivity</b>	No significant increase	There will be no increase in barriers to connectivity for storm petrel within the SPA as a result of the proposal.	<b>No</b>
<b>Disturbance at the breeding site</b>	No significant increase	Significant disturbance impacts to storm petrel at breeding sites are not envisaged as a result of the proposal. Some general protective	<b>Yes</b> <b>See Section 7</b>

		measures are recommended to minimise any potential disturbance impacts as a result of construction works, increased human activity or fugitive noise emissions during the construction phase.	
<b>Disturbance at marine Areas immediately adjacent to the colony</b>	No significant increase	There will be no increase in disturbance at marine areas adjacent to the stormpetrel colony as a result of the proposed works.	<b>No</b>
<b>Occurrence of mammalian predators</b>	Absent or under control	The proposal will result in multiple boat trips between the island and the mainland over the course of the construction phase. On a precautionary basis, some general mitigation measures in relation to preventing the spread of mammalian predators onto the island are proposed.	<b>Yes</b> <b>See Section 7</b>

#### 6.2.4 Kittiwake [A188]

The conservation objective for kittiwake within the Skelligs SPA is to maintain/restore the favourable conservation condition of this species. The specific species Attributes and Targets with regard to kittiwake which are defined in relation to the achievement of the Conservation Objectives for the Saltee Islands SPA (NPWS, 2011) are presented in Table 11 below which also includes an assessment of the effects of the project against these measures.

Table 11 Assessment of effects on conservation objectives of kittiwake

Attribute/Measure	Target	Assessment of Potentially Significant Effects	Mitigation Required
<b>Breeding population abundance: Apparently Occupied</b>	No significant decline	Yes, there is potential for risk of collision with breeding birds, that maybe present in the cliff	<b>Yes</b> <b>See section 7</b>

<b>Sites (AOS)</b>		ledges below the damaged wall section.	
<b>Productivity rate</b>	No significant decline	No significant decline in productivity rate of kittiwake within the SPA is predicted as a result of the proposed works.	<b>No</b>
<b>Distribution: breeding colonies</b>	No significant decline	No significant decline in the distribution of kittiwake breeding colonies within the SPA is predicted as a result of the proposed works.	<b>No</b>
<b>Prey biomass available</b>	No significant decline	No significant decline in the prey biomass available to kittiwake within the SPA is predicted as a result of the proposed works. However, on a precautionary basis, some general mitigation measures in relation to protection of water quality during construction phase are recommended.	<b>Yes</b> <b>See Section 7</b>
<b>Barriers to connectivity</b>	No significant increase	There will be no increase in barriers to connectivity for kittiwake within the SPA as a result of the proposal.	<b>No</b>
<b>Disturbance at the breeding site</b>	No significant increase	Significant disturbance impacts to kittiwakes at breeding sites are not envisaged as a result of the proposed works. Some general protective measures are recommended to minimise any potential disturbance impacts as a result of the wall repairs, increased human activity or fugitive noise emissions during the construction phase.	<b>Yes</b> <b>See Section 7</b>

#### 6.2.5 Guillemot

The conservation objective for guillemot within the Skelligs SPA is to maintain/restore the favourable conservation condition of this species. The specific species Attributes and Targets with regard to guillemot which are defined in relation to the achievement of the Conservation Objectives for the Saltee Islands SPA (NPWS, 2011) are presented in Table 12 below which also includes an assessment of the effects of the project against these measures.

Table 12 Assessment of effects on conservation objectives of guillemot

Attribute/Measure	Target	Assessment of Potentially Significant Effects	Mitigation Required
<b>Breeding population abundance: Apparently Occupied Sites (AOS)</b>	No significant decline	Yes, there is potential for risk of collision from falling stone debris during repair works with breeding colony present on the cliff ledges below the damaged wall section.	<b>Yes</b> <b>See section 7</b>
<b>Productivity rate</b>	No significant decline	No significant decline in productivity rate of guillemot within the SPA is predicted as a result of the proposed works.	<b>No</b>
<b>Distribution: breeding colonies</b>	No significant decline	No significant decline in the distribution of guillemot breeding colonies within the SPA is predicted as a result of the proposed works.	<b>No</b>
<b>Prey biomass available</b>	No significant decline	No significant decline in the prey biomass available to guillemot within the SPA is predicted as a result of the proposed works. However, on a precautionary basis, some general mitigation measures in relation to protection of water quality during construction are recommended.	<b>Yes</b> <b>See Section 7</b>
<b>Barriers to connectivity</b>	No significant increase	There will be no increase in barriers to connectivity for guillemot within the SPA as	<b>No</b>

		a result of the proposed works.	
<b>Disturbance at the breeding site</b>	No significant increase	Significant disturbance impacts to guillemot at breeding sites may occur from falling stone debris as a result of the proposed works. Some general protective measures are recommended to minimise any potential disturbance impacts as a result of wall repair works, increased human activity or fugitive noise emissions during the construction phase.	<b>Yes See Section 7</b>
<b>Disturbance at marine areas immediately adjacent to the colony</b>	No significant increase	There will be no increase in disturbance at marine areas adjacent to the guillemot colony as a result of the proposal.	<b>No</b>

#### 6.2.6 Atlantic Puffin [A204]

The conservation objective for puffin within the Skelligs SPA is to maintain/restore the favourable conservation condition of this species. The specific species Attributes and Targets with regard to puffin which are defined in relation to the achievement of the Conservation Objectives for the Saltee Islands SPA (NPWS, 2011) are presented in Table 12 below which also includes an assessment of the effects of the project against these measures.

Table 13 Assessment of effects on conservation objectives of puffin

Attribute/Measure	Target	Assessment of Potentially Significant Effects	Mitigation Required
<b>Breeding population abundance: Apparently Occupied Burrows (AOB)</b>	No significant decline	Yes, there is some potential disturbance to breeding puffins that maybe present in burrows on the ledges adjacent to the lighthouse road, opposite the sea wall.	<b>Yes See Section 7</b>
<b>Productivity rate</b>	No significant decline	No significant decline in productivity rate of puffin within the SPA is predicted as a result of	<b>No</b>

		the proposed works.	
<b>Distribution: breeding colonies</b>	No significant decline	No significant decline in the distribution of Puffin breeding colonies within the SPA is predicted as result of the proposed works.	<b>No</b>
<b>Prey biomass available</b>	No significant decline	No significant decline in the prey biomass available to Puffin within the SPA is predicted as a result of the proposed works. However, on a precautionary basis, some general mitigation measures in relation to protection of water quality during construction are recommended.	<b>Yes</b> <b>See Section 7</b>
<b>Barriers to connectivity</b>	No significant increase	There will be no increase in barriers to connectivity for Puffin within the SPA as a result of the proposal.	<b>No</b>
<b>Disturbance at the breeding site</b>	No significant increase	As part of the proposed works there will be some increased footfall in the area of the damaged section of the seawall on the Lighthouse Road. Some general protective measures are recommended to minimise any potential disturbance impacts as a result of repair works, increased human activity, or fugitive noise emissions during the construction phase.	<b>Yes</b> <b>See Section 7</b>
<b>Disturbance at marine areas immediately adjacent to the colony</b>	No significant increase	There will be no increase in disturbance at marine areas adjacent to the puffin colony as a result of the proposal.	<b>No</b>



<b>Occurrence of mammalian predators</b>	Absent or under control	The proposal will result in multiple boat trips between the island and the mainland over the course of the construction phase. On a precautionary basis, some general mitigation measures in relation to preventing the spread of mammalian predators onto the island are proposed.	<b>Yes</b>  <b>See Section 7</b>
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### 6.3 In Combination Effects

As well as singular effects, the potential for in-combination or cumulative effects also need to be considered. A cumulative impact arises from incremental changes caused by another past, present or reasonably foreseeable future actions together with the proposed developments. The EC (2001) guidelines on the provision of Article 6 of the Habitats' Directive state that the phrase 'in combination with other plans or projects' in Article 3(3) of the Habitats Directive refers to the cumulative impacts due to plans or projects 'that are currently under consideration together with the effects of any existing or proposed projects or plans.' Relevant plans and projects have been identified above.

The Kerry County Development plan identifies Skellig Michael as a UNESCO World Heritage site and highlights the need for protection of such sites.

A number of on-going projects were in place during the 2021 season including the establishment of public toilets and archaeological works at the Old Lighthouse.

The OPW is also running a longer-term conservation project on the old Lighthouse Road. Phase 1 and Phase 2 of this project are now complete. Phase 3 of the project was due to commence in 2019 and Ministerial consent was granted for Phase 4 of this project by the DHLGH. Work for these phases has and will centre on varying degrees of remedial work on the sea wall.

It is not envisaged that the site of the proposed works will have any in combination effects with these ongoing works or future works.

#### 6.3.1 Tourism

The average yearly visitor numbers to the island in the period 2009-2018 was 13,228 (Sceilg Mhichíl World Heritage Site Management Plan 2020–30). The typical tourist season runs from May until the end of September. Proximity to the landing area and lighthouse road make this an area of high tourist

traffic it is therefore not envisaged that there will be an impact from a combination of tourism and the proposed works as any SCIs in proximity will be accustomed to human traffic.

#### 6.3.2 Plans

With regards to the potential for significant cumulative or in-combination impacts due to interaction with the proposed works and the Kerry County Development Plan (CDP) 2015 – 2021, it is considered that in general, County Development Plans, including the Kerry CDP 2015 – 2021, have a range of environmental and natural heritage policy safeguards in place. These safeguards, which protect the natural environment, will also apply to the proposal described in this report. No significant cumulative impacts are predicted with the Kerry CDP 2015 – 2021.

Bearing the above factors in mind, significant cumulative impacts arising due to interaction between the proposal and on-going remedial and conservation works to the Upper Lighthouse Road and seawall which could adversely affect the integrity of the Skelligs SPA and its Conservation Objectives are not predicted.

## 7 Mitigation of Risks

### 7.1 Ecological Clerk of Works

A qualified Ecological Clerk of Works will be appointed to oversee the proposed works.

- The OPW and DHLGH will meet with the ECoW at the commencement of the works to discuss and agree all details of the proposed works.
- The ECoW will conduct a pre-works survey of the general area surrounding the proposed works site to establish the presence of SCIs in the area and will submit a report to OPW on completion of the works which will be forwarded to the DHLGH and NPWS for comment.

### 7.2 Construction Phase

#### 7.2.1 Measures to Reduce Potential Disturbance of Birds

To avoid or reduce any potential disturbance of breeding birds in the area over the course of the construction phase, the following measures are proposed:

- Manual methods and light hand tools should be employed as much as is practicably possible for all works to minimise noise.
- The ECoW will monitor the works for potential disturbance to breeding birds.
- The ECoW will not give the go ahead to any works if there is a likelihood of significant damage to the breeding habitat of the listed seabirds of the SPA.
- These measures will reduce fugitive noise emissions as much as possible and will help to minimise any potential disturbance of breeding/loafing birds in the area.
- The ECoW will not give the go ahead to any works if the removal or rolling off of any stone debris is likely to cause significant disturbance to the breeding seabirds (or damage to their habitats) below the location of the damaged sea wall, on cliff ledges.

#### 7.2.2 Use of Mortar/Lime

- Weather forecast to be checked in advance of any works.
- Works will not be carried out in inclement weather in order to reduce the likelihood of contaminated runoff.
- The works will only commence when a suitable weather window is forecast. If a sudden and unforeseen weather event occurs the works will be stopped.
- Mixing of mortar to be carried out during periods of dry weather with no rain forecast.
- A designated trained operator, experienced in working with mortar, will be employed for mortar mixing.
- The use of mortar is to be carefully controlled to avoid spillage.
- Any spillage/waste concrete residues are to be cleaned up and disposed of to waste.

### 7.2.3 Use of Fuel/Oils

- All machinery to be regularly inspected for leaks and be fit for purpose.
- Fuel/oil for generator etc to be stored in designated, secure areas which are covered and protected from the elements.
- Generator to be fitted with a drip-tray.

### 7.2.4 Other Water Quality Protection/General Construction Activity Measures

- Construction materials and equipment are to be stored in designated, secure areas which are covered and protected from the elements.
- Material stockpiles should be kept to a minimum size.
- Material stockpiles should be stored away from drains, on an impermeable base and away from moving machinery e.g. power barrow/quad bike etc.
- All excavated material/spoil is to be stored in designated areas for either re-use elsewhere on the island as part of maintenance works or removal from the island.
- All areas of work are to be brushed down at the end of each day such that dust and other debris is cleaned up for removal to waste.
- All construction phase wastes are to be removed from the island in a controlled manner and disposed of appropriately at a suitably licensed facility on the mainland.
- Mortar washout from mixers and any fuel/oil residues are to be stored in sealed plastic containers for removal from the island by boat.

## 7.3 Measures to Avoid Accidental Introduction of Mammalian Predators to the Island

To prevent the accidental introduction of potential mammalian predators to the island, all equipment and materials brought to the island for the proposed works are to be securely stored on the mainland. Equipment, materials, and the vessels themselves are to be checked for any signs of rodent or other infestation prior to arriving to the island. Table 14 sets out the measures below.

Table 14 Biosecurity Measures

Implementation time	Prevention measure
<b>Prior to departure from mainland/another island</b>	<ul style="list-style-type: none"> <li>▪ All equipment and cargo should be visually inspected for the presence of or any signs of rodent stowaways, these include but not limited to gnawing, droppings, nest material.</li> <li>▪ Where possible - empty, check and repack items into storage containers. This is especially important when items are stored for extended periods.</li> <li>▪ Where possible - any food items should be stored in clean, sealed rodent-proof containers.</li> <li>▪ Inform all passengers of the associated risks of incursion</li> </ul>

<b>In transit</b>	<ul style="list-style-type: none"> <li>▪ If an invasive species e.g., rodent is found onboard do not continue the journey. Return to the point of origin and ensure the vessel is free of invasive species before subsequent departures.</li> <li>▪ Do not throw the individual(s) overboard.</li> <li>▪ Report the incident to inform further biosecurity planning/measures.</li> <li>▪ Ensure a bait station is on-board</li> <li>▪ Ensure information on biosecurity is available to all people on the vessel</li> </ul>
<b>On site</b>	<ul style="list-style-type: none"> <li>▪ Be vigilant</li> <li>▪ Maintain permanent monitoring and bait stations on the landing sites of each island.</li> <li>▪ Maintain securely stored incursion response pack on each island.</li> <li>▪ Ensure the quays/piers/landing sites are as clean as possible</li> <li>▪ Dispose of waste correctly and preferably remove it from the island as soon as possible</li> <li>▪ Report any signs of invasive species to the relevant person(s) and document any evidence to inform further biosecurity planning/measures</li> <li>▪ Do not deliberately release any non-native species on the islands</li> </ul>
<b>Returning to mainland</b>	<ul style="list-style-type: none"> <li>▪ Do not leave food or waste near the quay/pier/marina or storage areas.</li> <li>▪ Maintain bait stations at the quay or equipment storage area</li> </ul>

#### 7.4 Residual Impacts

Provided that the recommended mitigation measures set out in Section 7 are implemented in full, it is not expected that significant residual impacts will result from the proposed works.

## 8 Conclusion

A study to inform an Appropriate Assessment has been undertaken to assess the nature of potential environmental effects that may result from works associated with the installation approximately 100m of crash deck at Cross Cove, Skellig Michael Co. Kerry. These works aim to improve safety of the island for OPW work crews and visitors. Following the identification of Likely Significant Effects at AA Screening, consideration was given as to whether those impacts could result in adverse effects on the integrity of the Skelligs SPA (004007). AA Screening showed potential pathways for Likely Significant Effects with respect to the SCIs of the SPA. Pathways that could not be discounted at AA Screening related to noise pollution effects, prolonged exposure to people, and potential for collisions to impact the SCIs.

This report examined the potential for changes in the baseline conditions as a result of the proposed development in more detail against the conservation objectives for Skelligs SPA, using the best available baseline information, and in view of the mitigation measures proposed to mitigate the potential for adverse effects.

In conclusion, based on the best available scientific information and professional judgement, it is considered that there will be no adverse effects on the integrity of Skelligs SPA due to the size and scale of the proposed works. On the application of the mitigation, only very weak source-receptor pathways exist that could undermine the structure or ecological functioning of the site or the conservation objectives that define the favourable status of the SCI features. No supporting habitats, such as those used for breeding or commuting, or food sources would be functionally reduced.

On the basis of these weak pathways and on review of other plans and projects that could contribute to effects, significant adverse in-combination effects with other plans and projects are also not considered likely to occur. Therefore, no reasonable scientific doubt remains as to the absence of effects on the integrity of Skelligs SPA.



Table 15 Integrity of the Site in Relation to Residual Impacts

<b>Conservation objectives: does the plan or project have the potential to:</b>	<b>Y/N</b>
<b>Cause delays in progress towards achieving the conservations objectives of the site?</b>	N
<b>Interrupt progress towards achieving the conservation objectives for the site?</b>	N
<b>Disrupt those factors that help to maintain the favourable conditions of the site?</b>	N
<b>Interfere with the balance, distribution and density of key species that are the indicators of the Favourable condition of the site?</b>	N
<b>Other objectives: does the plan or project have the potential to:</b>	
<b>Cause changes to the vital defining aspects (e.g. nutrient balance) that determine how the site functions as a habitat or ecosystem?</b>	N
<b>Change the dynamics of the relationships (between, for example, soil and water or plants and animals) that define the structure and/or function of the site?</b>	N
<b>Interfere with the predicted or expected natural changes to the site (such as water dynamics or chemical composition)?</b>	N
<b>Reduce the area of key habitats?</b>	N
<b>Reduce the population of key species?</b>	N
<b>Change the balance between key species?</b>	N
<b>Reduce the diversity of the site?</b>	N
<b>Result in disturbances that could affect population size or density or the balance between key Species?</b>	N
<b>Result in fragmentation?</b>	N
<b>Result in loss or reduction of key features (e.g. open wall habitat, burrow nesting habitat, etc.)?</b>	N

## 9 References

Creagh House Environmental Ltd. Reconnaissance Report Geological Context of Rockfall Monday 13th June 2022 Lower Lighthouse Road, Skellig Michael. Michael O'Sullivan MSc, LLM, MIEMA, CEnv Sunday, 19th June 2022

DEHLG, 2015. Skellig Michael Draft Report, Dublin, Ireland: Dept. of Environment, Heritage and Local Government.

DEHLG, 2009. Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities. Department of Environment, Heritage and Local Government.

DEHLG, 2008. Skellig Michael World Heritage Site Management Plan 2008-2018, Dublin, Ireland: Department of the Environment, Heritage and Local Government.

Davies, P., 1957. The Breeding of the Storm Petrel. British Birds, Volume 50, pp. 85-101, 371-383. de

Paor, L., 1955. A Survey of Sceilg Mhichíl. The Journal of the Royal Society of Antiquaries of Ireland, 85(2), pp. 174-187.

Envirico Ltd. 2022. APPROPRIATE ASSESSMENT NATURA IMPACT STATEMENT Proposed Application for the construction of a composting toilet within the Lower Lighthouse Complex, Skellig Michael, Co. Kerry

Envirico Ltd. 2022. APPROPRIATE ASSESSMENT NATURA IMPACT STATEMENT. Proposed Application for the Installation of CCTV, Associated Electrical Equipment and Solar Panels on the Store Building Adjacent to the Landing Pier at Skellig Michael.

European Commission (2000a). Managing Natura 2000 sites: The Provisions of Article 6 of the Habitat's Directive 92/43/EEC.

European Commission (2000b). Communication from the Commission on the Precautionary Principle. Office for Official Publications of the European Communities, Luxembourg.

European Commission (2001). Assessment of Plans and Proposed Schemes Significantly Affecting Natura 2000 sites: Methodological Guidance on the Provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC

European Commission (2002). Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC. Office for Official Publications of the European Communities, Luxembourg.

Edwards, E. W. J. et al., 2013. Tracking a northern fulmar from a Scottish nesting site to the Charlie Gibbs Fracture Zone: Evidence of linkage between coastal breeding seabirds and Mid-Atlantic Ridge feeding sites. Deep-Sea Research II, Volume 98, pp. 438-444.

Finney, S. K., Wanless, S., Harris, M. P. & Monaghan, P., 2001. The impact of gulls on puffin reproductive performance: an experimental test of two management strategies. Biological Conservation, Volume 98, pp. 159-165.

Fossitt, J. (2000). A Guide to Habitats in Ireland. National Heritage Council.

Gilbert G, Stanbury A and Lewis L (2021), "Birds of Conservation Concern in Ireland 2020 –2026". Irish Birds 9: 523—544

Kelly, J., O'Flynn, C., and Maguire, C. 2013. Risk analysis and prioritisation for invasive and non-native species in Ireland and Northern Ireland. A report prepared for the Northern Ireland Environment Agency and National Parks and Wildlife Service as part of Invasive Species Ireland

Malachy Walsh Partners – 2022. Skellig Michael - Further Precautionary Actions Following 2022 Rockfall

Malachy Walsh Partners – 2021. Natura Impact Statement Construction of 3 No. Permanent Crash Decks on Lighthouse Road, Skellig Michael Island.

NPWS, 2011. Conservation Objectives: Saltee Islands SAC 000707 and Saltee Islands SPA 004002. Version 1.0. , Dublin, Ireland: National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

NPWS, 2004. Skelligs SPA (Site Code: 004007) Site Synopsis, Dublin, Ireland: National Parks and Wildlife Service.

P. Ian Mitchell, Stephen F. Newton, Norman Ratcliffe and Timothy E. Dunn (Eds.). 2004. Seabird Populations of Britain and Ireland: results of the Seabird 2000 census (1998-2002). Published by T and A.D. Poyser, London.

Gasparatos, A., Doll, C., Esteban, M., Ahmed, A., & Olang, T. 2017. Renewable energy and biodiversity: Implications for transitioning to a Green Economy. Renewable and Sustainable Energy Reviews, 70, 161-184.



## 10. Appendices

### 10.1 Site Photos



*Photo 3: Damaged section of sea wall from rockfall near Crash Deck No. 2*





*Photo 4: Tightly packed wall with lime mortar pointing at damaged wall location*





*Photo 5: View of cliff ledges below damaged wall section*