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Natura Impact Statement

Construction of 3 No. Permanent Crash Decks on Lighthouse Road, Skellig Michael Island

ISSUE FORM	
Project number	12242
Document number	6042
Document revision	A
Document title	Natura Impact Statement: Construction of 3 No. Permanent Crash Decks on Lighthouse Road, Skellig Michael Island
Document status	Final
Issue Date	22-06-2021
Document prepared by	HD
Document checked by	MKy – MWP – 22-06-2021

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1 SUMMARY OF FINDINGS

Project Title	Natura Impact Statement for Construction of 3 No. Permanent Crash Decks on Lighthouse Road, Skellig Michael Island
Project Proponent	The Office of Public Works (OPW)
Project Location	The project is located on Skellig Michael Island, located approximately 12.7 km west of the Iveragh Peninsula in County Kerry, Ireland. Works are proposed in three separate locations on the Lighthouse Road.
Natura Impact Statement	In cases where Appropriate Assessment is required a Natura Impact Statement (NIS) is prepared and includes a report of a scientific examination of evidence and data, carried out by competent persons to identify and classify any implications of a proposal, individually, or in combination with other plans or projects, for Natura 2000 sites in view of the conservation objectives of the sites.
Conclusion	A Natura Impact Statement has been undertaken to determine the significance of the impact of the proposal on the Skelligs SPA (004007). Provided that the mitigation measures are implemented in full, it is considered that the proposal, either individually, or in combination with other plans/projects, will not affect the integrity of the Skelligs SPA (004007).

2 INTRODUCTION

Appropriate Assessment is the consideration of the impact of the project on the integrity of the Natura 2000 site, either alone or in combination with other plans or projects, with respect to the site's ecological structure and function, and in view of the site's conservation objectives. The conservation objectives of a Natura 2000 site are site specific and based on the ecological requirements of the species and habitats present. They define the desired conservation condition of certain species and habitat types on the site. Conservation objectives are defined using attributes and targets that are based on parameters as set out in the Habitats Directive for defining favourable status, namely area, range, structure and function. The conservation objectives may be either to maintain or restore the favourable conservation condition of a habitat/species.

Article 6(3) of Directive 92/43/EEC stipulates that certain projects and plans must be subjected to an "appropriate assessment" of their effects on the integrity of Natura 2000 site(s). Article 6(3) provides in full:

"*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.*"

The Office of Public Works (OPW) is applying for Ministerial Consent to the Department of Housing, Local Government and Heritage (DHLGH) for proposed construction works at three locations on the Lighthouse Road on Skellig Michael Island.

A screening for appropriate assessment report was completed for the proposed works to determine whether the project was likely to significantly affect Natura 2000 sites. Potential impacts that may arise from the proposal were identified and the significance of these was assessed through the use of key indicators:

- Habitat loss and alteration
- Disturbance and/or displacement of species
- Habitat or species fragmentation
- Water quality
- Cumulative or in-combination impacts

The screening for appropriate assessment report determined that a full appropriate assessment of the proposed works is required, as it could not be excluded, on the basis of objective information, that in the absence of mitigation, the proposed works, individually or in combination with other plans or projects, will not have a significant effect on one Natura 2000 site within the zone of impact of the proposal, namely Skelligs SPA (004007), in view of the site's conservation objectives.

Please refer to **Appendix 2** for the full screening for appropriate assessment report.

This NIS is a scientific examination of evidence and data, carried out by competent persons, to identify and classify any implications (ecological effects) for the Natura 2000 site outlined above in view of the conservation objectives of that site. The aim of the NIS is to provide a sufficient level of information to the competent authority on which to base their appropriate assessment of the proposed works described in **Section 4** below.

This NIS identifies the aspects of the proposed works that will interact with the ecological requirements or sensitivities of the species listed in **Section 8.1.1** to **8.1.6** and determines whether these will result in adverse effects for the species for which the Natura 2000 site listed above is designated. Mitigation measures to avoid or reduce ecological effects are provided in **Section 10**.

2.1 STATEMENT OF COMPETENCY

This NIS has been prepared by Hazel Dalton (BSc.) Ecologist at Malachy Walsh and Partners (MWP). Hazel has six years' experience with MWP in ecological surveying, ecological impact assessment and the appropriate assessment process. She is an appropriately qualified, trained and competent professional. She has completed numerous ecological assessments for a wide variety of projects. She is an experienced field ecologist and has a diverse ecological survey profile, including habitats and flora, mammals (including bats), birds and terrestrial/aquatic invertebrates. She has held NPWS Licences for small mammal trapping, tape lure/endoscope bird surveys, photographing wild animals and disturbance of bats and badger.

She is familiar with Skellig Michael, has previously assisted with ecology surveys on the island and has completed multiple AA screening reports/NIS reports for other OPW projects on the Skellig Michael.

2.2 PROJECT OVERVIEW

On the 27th July 2020, a rock fall occurred on Skellig Michael in the vicinity of the OPW workmen's compound located on the south side of the island on the Lower Lighthouse Road. The fall area is in a location where water from the high ground over head tends to channel down with the result that debris is often found on the road after the winter season in this area. At the time, the island was closed to visitors due to Covid restrictions; however, some contractors were present on the island. The island is still closed but OPW personnel are continuing to work on ongoing maintenance on the island.

Previous rock falls, of varying concern, have occurred on the island. These typically happen during the winter months, reflecting the extreme exposure of the site and its vulnerability to increased aggression during these months. The OPW have a well-established protocol for optimising safety on the island when the workmen return to the island in May of each year. Typically, this involves specialist personal sweeping the high ground over the landing and access road at all locations to remove any rocks considered to pose a danger. These rocks are either removed to a safer location or are broken up and brought down in a controlled manner.

There have been incidences during the working season most notably a 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 ongoing debris falling on an ongoing basis at this location. A temporary canopy, of scaffold and board construction, was also provided on the Upper Lighthouse Road to give protection to OPW personnel while carrying out conservation work in this area.

These rock-falls, including in particular the most recent rock-fall, adjacent to the workmen's compound, which occurred during the working season, represent a serious health and safety concern for staff and visitors on the island. Permanent crash decks are proposed at three locations considered to be vulnerable to further rock-fall along the Lighthouse Road to improve health and safety on the island.

3 METHODOLOGY

3.1 APPROPRIATE ASSESSMENT GUIDANCE

This NIS has been undertaken in accordance with the European Commission Methodological Guidance on the provision of Article 6(3) and 6(4) of the 'Habitats' Directive 92/43/EEC (EC, 2001) and the European Commission Guidance 'Managing Natura 2000 sites' (EC, 2018) and guidance prepared by the NPWS (DoEHLG, 2009).

3.2 CONSULTATION

Consultation has taken place between the OPW and the DHLGH.

3.3 DESK STUDY

In order to complete the NIS certain information on the existing environment is required. A desk study was carried out to collate available information on the site's natural environment. This comprised a review of the following publications, data and datasets:

- OSI Aerial photography and 1:50000 mapping
- National Parks and Wildlife Service (NPWS)
- National Biodiversity Data Centre (NBDC) (on-line map-viewer)
- BirdWatch Ireland
- Teagasc soil area maps (NBDC website)
- Geological Survey Ireland (GSI) area maps
- Environmental Protection Agency (EPA) water quality data
- Other information sources and reports footnoted in the course of the report

4 DESCRIPTION OF PROJECT

4.1 OVERVIEW OF THE GENERAL SITE

Skellig Michael is an island (the larger of the two Skellig Islands) located in the Atlantic Ocean, approximately 12.7 km west of the Iveragh Peninsula in County Kerry, Ireland.

Skellig Michael is home to one of the best preserved Christian, monastic settlements dating from the early medieval period, comprising a monastery, hermitage and several stone stairways, which connect the various archaeological features, as well as provide access throughout parts of the island (DEHLG, 2008). The settlement is extremely well-preserved, most probably as a result of the islands remoteness, which together with the harsh weather conditions experienced for much of the year, serves to limit human visitation. However, as a result of its immense archaeological, spiritual and cultural significance, Skellig Michael still attracts large numbers of tourists each year throughout the summer months. An on-going conservation programme, under the management of the OPW, also

serves to maintain the site through managing visitor access and carrying out necessary maintenance works.

Located in the north-east Atlantic Ocean, the island is subject to a temperate Atlantic climate, strongly influenced by the Gulf Stream. The geology of Skellig Michael is characterised predominantly by Devonian Old Red Sandstone, which forms the islands two main peaks, the taller of which towers some 218 m above the sea below (DEHLG, 2008). Under the exposed weather conditions, erosion and fracturing of rock has resulted in the formation of a relatively flat area, known as Christ's Saddle, which sits between the two peaks and from which stone steps ascend to the monastic buildings above (DEHLG, 2008).

Much of the island surface is characterised by sheer cliff-face, exposed bedrock, boulders and scree. As a result, vegetation cover is not extensive in any area. Where thin soils have accumulated exposure-tolerant plant species such as thrift (*Armeria maritima*), sea-campion (*Silene maritima*), sea-mayweed (*Tripleurospermum maritimum*) and rock sea-spurrey (*Spergularia rupicola*) occur. In some areas, such as Christ's Saddle and above the Monastery, more extensive areas of vegetation occur, mostly dominated by sea campion. Skellig Michael is of major importance, both in a national and international context, due to its populations of breeding seabirds, both in terms of the species and numbers it sustains (DEHLG, 2008).

4.2 PURPOSE OF THE PROJECT

Permanent crash decks are proposed at three critical locations on the Lighthouse Road considered vulnerable to future rock-falls. The purpose of the proposed works is to ensure the safety of OPW personnel and visitors to the island. While the temporary crash decks which are currently in place are capable of deflecting smaller debris, they are not intended to provide protection from more substantial rock-falls. The permanent crash decks will replace these temporary structures with the aim of deflecting debris and larger rock material which may fall onto the roadway at these locations in the future.

4.3 LOCATION AND BRIEF OVERVIEW OF PROPOSED WORKS

The proposed works will involve the dismantling and removal of the temporary crash decks currently in-situ and the installation of more substantial, permanent crash decks in their place. The permanent, robust crash decks will be of steel-frame construction and will be capable of deflecting larger rocks and other material.

Works are proposed at three locations on the Lighthouse Road on the island as part of the project:

- **Crash Deck 1**: Located adjacent to the workmen's compound on the Lower Lighthouse Road.
- **Crash Deck 2**: Located at the first bend on the Upper Lighthouse Road heading north from the Lower Lighthouse.
- **Crash Deck 3**: Located on the next bend of the Upper Lighthouse Road heading north-west towards the Upper Lighthouse (disused).

Figure 1 below shows the locations of the proposed works.

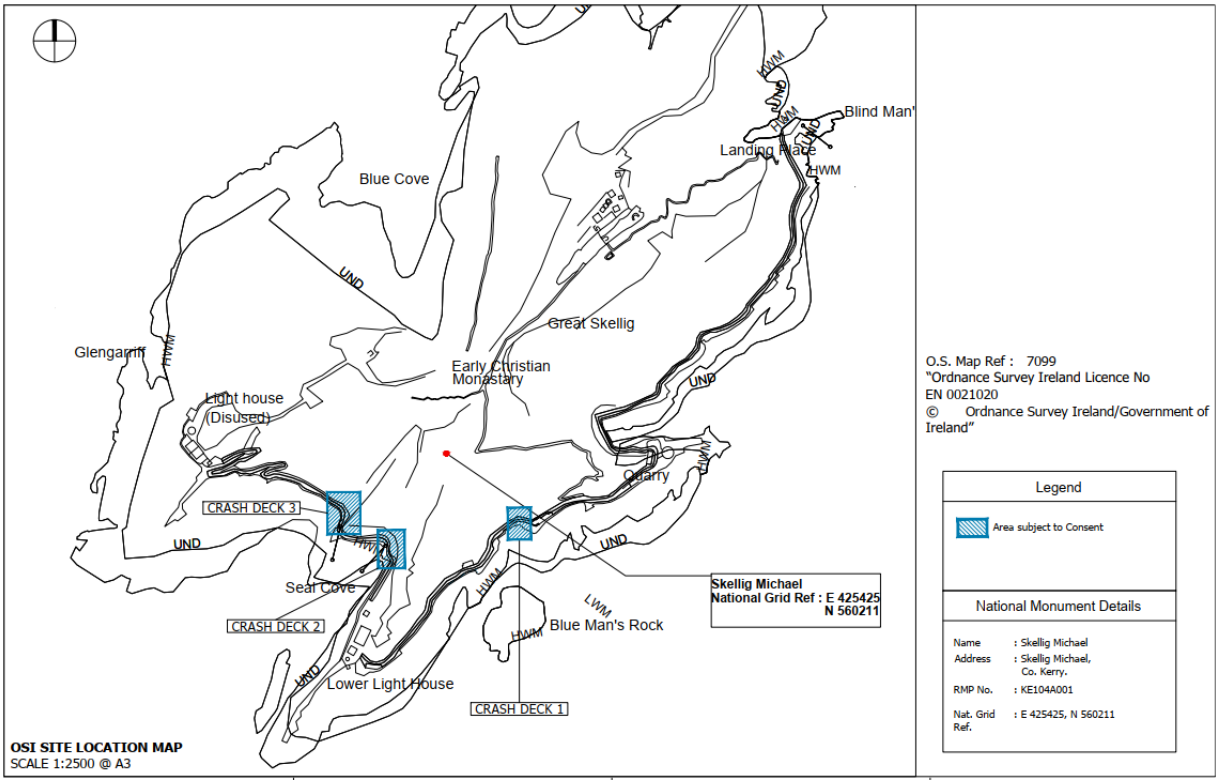

Figure 1. Locations of proposed works on Skellig Michael Island (Adapted from OPW Consent Application documents)

4.4 CHARACTERISTICS OF THE PROJECT

The crash decks will be of stainless steel construction. The steel framework will be secured to the road with steel ground beams surrounded by concrete. The steel framework will be secured to the cliff-face behind and below each crash deck using cable stays secured to the rock with rock bolts. There will be a requirement for excavation of linear sections of the existing road surface to facilitate the steel ground beams of each crash deck. The height of the crash decks vary with an average height of approximately 2.4 m from ground-level and a maximum height of approximately 3 m at Crash Deck 3. The crash decks have been designed by Downes Associates consultant structural engineers.

4.4.1 Crash Deck 1 – Lower Lighthouse Road

Crash Deck 1 is located on the Lower Lighthouse Road near the existing OPW site huts. Dangerous rock falls occurred in this area in 2017 and 2020. On the 12th August 2017, a large boulder along with other debris fell from a slope above the Lower Lighthouse Road and landed on the roadway in close proximity to the accommodation huts, damaging the seawall at the location.

On 27th July 2020, another rock-fall occurred in this area, with another large boulder landing on the roadway in the same location, again causing damage to the seawall. The area in which the rock fall occurred is a route where water flows down from above, displacing rocks and earth, and washing them down onto the Lighthouse Road and into its drainage channel. A large volume of water flows down the cliff-face in this particular area during heavy rainfall. This location is currently a safety risk to OPW personnel and visitors to the island.

Plate 1 and **2** below show the aftermath of the 2017 and 2020 rock falls in this area and in particular the proximity of the displaced boulders to the OPW worker's accommodation huts.

Plate 1. Displaced boulder on roadway following rock-fall near OPW accommodation huts in July 2020

Plate 2. Displaced boulders on roadway following rock-fall near OPW accommodation huts in August 2017

4.4.2 Crash Deck 2 and 3 – Upper Lighthouse Road

Crash Deck 2 and **Crash Deck 3** are located in areas prone to rock falls on the Upper Lighthouse Road.

Plate 3. Temporary crash deck installed at location of proposed crash deck 2 on the Upper Lighthouse Road

Plate 4. Temporary crash deck installed at location of proposed crash deck 3 on the Upper Lighthouse Road

4.4.3 General Approach to Protection of Nesting Birds

The proposed works will take place during the breeding season for several seabird species which are SCIs (Special Conservation Interests) for the SPA. In light of the environmental sensitivity of the site, all works carried out will take particular cognisance of nesting seabirds, whether ground or cavity-nesting, or nesting on surrounding cliff-faces and breeding ledges. As carried out for all other OPW works on the island, all building methods and work crews will be cognisant of the site's importance for breeding seabirds.

4.4.4 Project Characteristics Summary

A summary of the project characteristics in the context of appropriate assessment is provided in the table below. The proposal has been confirmed with the OPW.

Size, scale, area, land-take	The footprint of the works will comprise the following: Overall area of works for Crash Deck 1: 6.5 m^2 Overall area of works for Crash Deck 2: 32.95 m^2 Overall area of works for Crash Deck 3: 32.6 m^2 Total area of excavation of roadway for foundations: 65 m^2 Total approx. volume of excavations: 20 m^3 + 30 m^3 + 20 m^3 = 70 m^3 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 road. The works will not extend beyond this area. There will be no encroachment onto adjacent habitats, other than securing of cable stay rock bolts to the cliff-face below and to the rear of each section of crash deck.
Details of physical changes that will take place during the various stages of implementing the proposal	• Excavation of roadway by hand for foundation grillage steelwork • Erection of temporary scaffolding • Drilling for rock anchors and rock bolts • In-situ pouring of concrete for foundation grillage • Construction of crash deck steel framework including securing cable stays to cliff-face • Treatment of steelwork on-site post construction with primer and paint • Removal of scaffolding
Description of resource requirements for the construction/operation and decommissioning of the proposal (water resources, construction material, human presence etc)	**Construction Materials/Equipment** • Structural steel for crash deck framework (Duplex grade stainless steel) • Steel bolts for framework • Stainless steel rock bolts • Stainless steel rock anchors • Corrugated aluminium roof sheeting • Protective stainless steel woven mesh • Concrete (Approx. 10 m^3) • Primer and paint for steelwork • Temporary scaffolding • Water for concrete • No. of workers – max. 6 • Generator and fuel • Tools

	• Power barrow/quad bike for transporting steel sections
Description of timescale for the various activities that will take place as a result of implementation (including likely start and finish date)	Pending approval, it is anticipated that the proposed works will take eight weeks to complete and will be carried out in late summer 2021. All works will be dependent on weather/boat crossing conditions.
Description of wastes arising and other residues (including quantities) and their disposal	Construction phase wastes will include: • 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. • Workers shall utilise existing OPW staff toilet facilities currently available on the island. • 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. • 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. No operational phase wastes are envisaged.
Identification of wastes arising and other residues (including quantities) that may be of particular concern in the context of the Natura 2000 network	• Concrete, concrete washout • Paint/primer etc • Fuel/oil residue generator (minor quantity)
Description of any additional services required to implement the project or plan, their location and means of construction	Existing services and living accommodation are available on the island for workers for the duration of the works. Water shall be brought to the site for mixing concrete. Electricity shall be provided by means of a diesel powered generator.

5 IDENTIFICATION OF OTHER PROJECTS OR PLANS OR ACTIVITIES

5.1 PLANS

The Kerry CDP 2015-2021 was reviewed with regard to Skellig Michael. The Plan identifies Skellig Michael as a UNESCO World Heritage Site of international importance. The Plan also makes reference to the requirement for protection of such sites and the potential significant economic and social benefits in promoting the value of such assets.

The Plan states:

> "*It is the intention of this Development Plan to actively support the protection, conservation and appropriate enhancement of the cultural heritage in Kerry to benefit residents and visitors alike and to target cultural tourism as a major economic driver in the County*"[1].

5.2 TOURISM

The island is visited by significant numbers of tourists (approximately 18,000) on an annual basis. The open season typically runs from May to early October with exact opening and closing dates dependent on weather constraints and prevailing sea conditions. Fifteen boats are currently licensed to make a single return trip to the island each day during this period, when weather conditions are suitable for the sea crossing. Each boat has a maximum licensed carrying capacity of twelve people.

All tourists are strictly daytime visitors, allowed to visit the island between the hours of 10:30 and 15:00 seven days a week. Tourist access is restricted to the eastern half of the island, comprising the East Landing (boat landing area), Lower Lighthouse Road, Monastery and the series of stone steps linking them. The OPW accommodation huts are located beyond the limit of public access on the Lower Lighthouse Road. There is no public access to the Upper Lighthouse Road.

5.3 ON-GOING REMEDIAL AND CONSERVATION WORKS TO THE UPPER LIGHTHOUSE ROAD AND SEAWALL

The OPW is currently undertaking a long-term conservation project on the Upper Lighthouse Road (also known as the Old Lighthouse Road) on Skellig Michael. This project has been undertaken on a phased basis over the last several years and will continue over the coming years during the island's annual open season, subject to the necessary consents.

Phase 1 of the project was granted consent and commenced in 2017. Phase 2 of the project was granted consent and commenced in 2018. Phase 3 of the project was granted consent and commenced in 2019. Screenings for appropriate assessment were undertaken for Phases 1 -3 of the project. Phase 1 and Phase 2 of the project are complete. Once the islands open season has commenced Phase 3 of the works will continue. Phase 3 of the works encompasses the last section of the Upper Lighthouse Road before the Upper Lighthouse compound.

Ministerial Consent was recently granted by the DHLGH to the OPW in relation to Phase 4 of the on-going remedial works. The Phase 4 works will encompass the seawall which surrounds the Upper Lighthouse, the Upper Lighthouse ruins & gatepost and a portion of seawall adjacent to the Lower Lighthouse. These sections of the Upper Lighthouse compound seawall and Lower Lighthouse

[1] http://atomik.kerrycoco.ie/ebooks/devplan/pdfs/Vol1/final_vol_1.pdf

seawall have been subject to varying degrees of damage as a result of natural rock-fall and exposed conditions and as such the degree of remedial works will vary between these locations.

While there is no spatial overlap between the footprint of the various elements of the consented Phase 3 and Phase 4 conservation works and the works proposed in this NIS, the consented Phase 3 and Phase 4 works, together with the proposed Crash Deck 2 and Crash Deck 3, are all located on the Upper Lighthouse Road. There is a possibility of overlap in timing between the on-going phased conservation works and the works proposed within this Stage 2 assessment. There is therefore potential for cumulative or in-combination impacts as a result of interaction between the various projects in this particular part of the island.

The on-going OPW conservation project does not encompass the Lower Lighthouse Road and so no significant cumulative or in-combination impacts due to interaction between the proposal and these consented projects are foreseen.

6 IDENTIFICATION OF NATURA 2000 SITES

There are four Natura 2000 sites within 15km or the zone of potential impact influence of the proposal, as shown in **Figure 2** below.

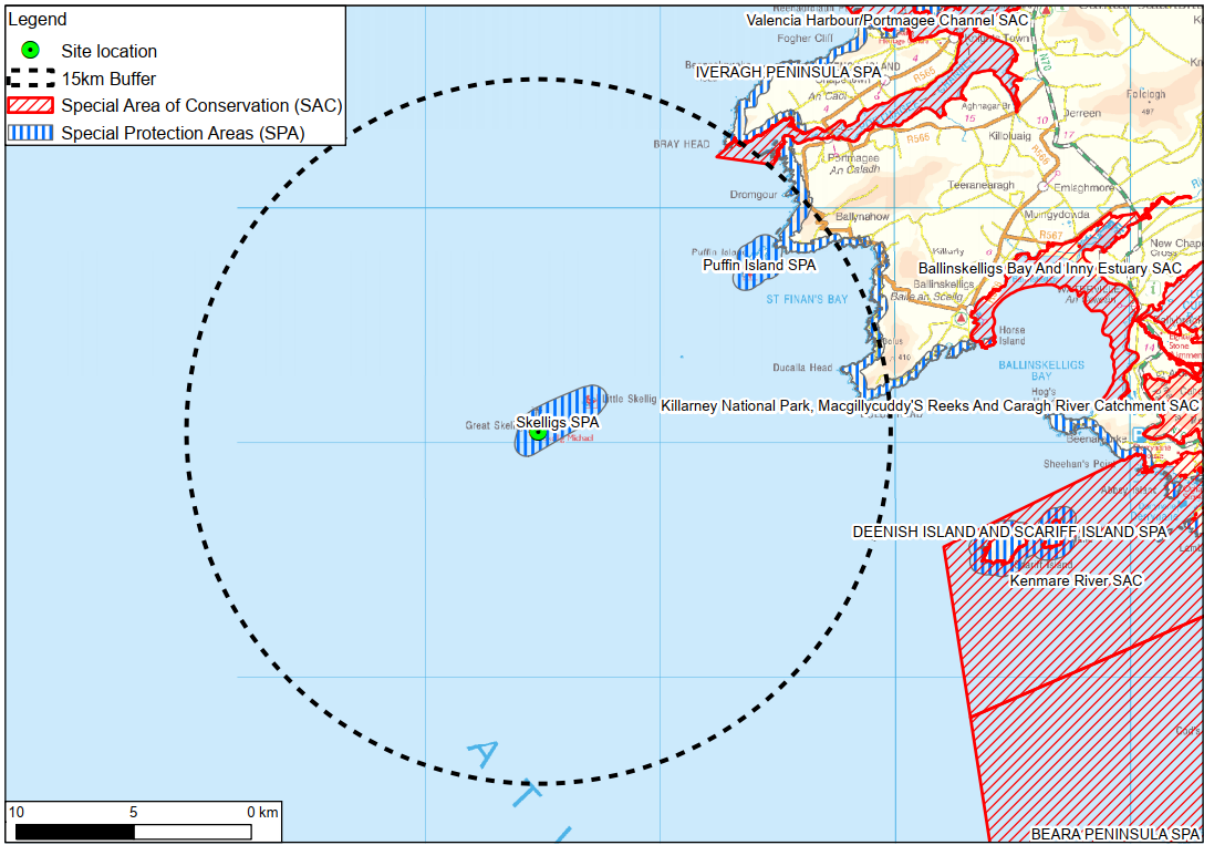

Figure 2. Natura 2000 sites within 15km or the zone of potential impact influence of the proposal

The screening for appropriate assessment report concluded that three of the four Natura 2000 sites within the zone of potential impact influence of the project can be excluded from significant impacts from the proposal to construct three permanent crash decks on the Lighthouse Road on Skellig Michael Island. These sites are as follows:

- Valencia Harbour/Portmagee Channel SAC (002262)
- Iveragh Peninsula SPA (004154)
- Puffin Island SPA (004003)

However, Skellig Michael, and thus the proposed works, are encompassed entirely within the boundary of the Skelligs SPA, as shown in **Figure 3** below.

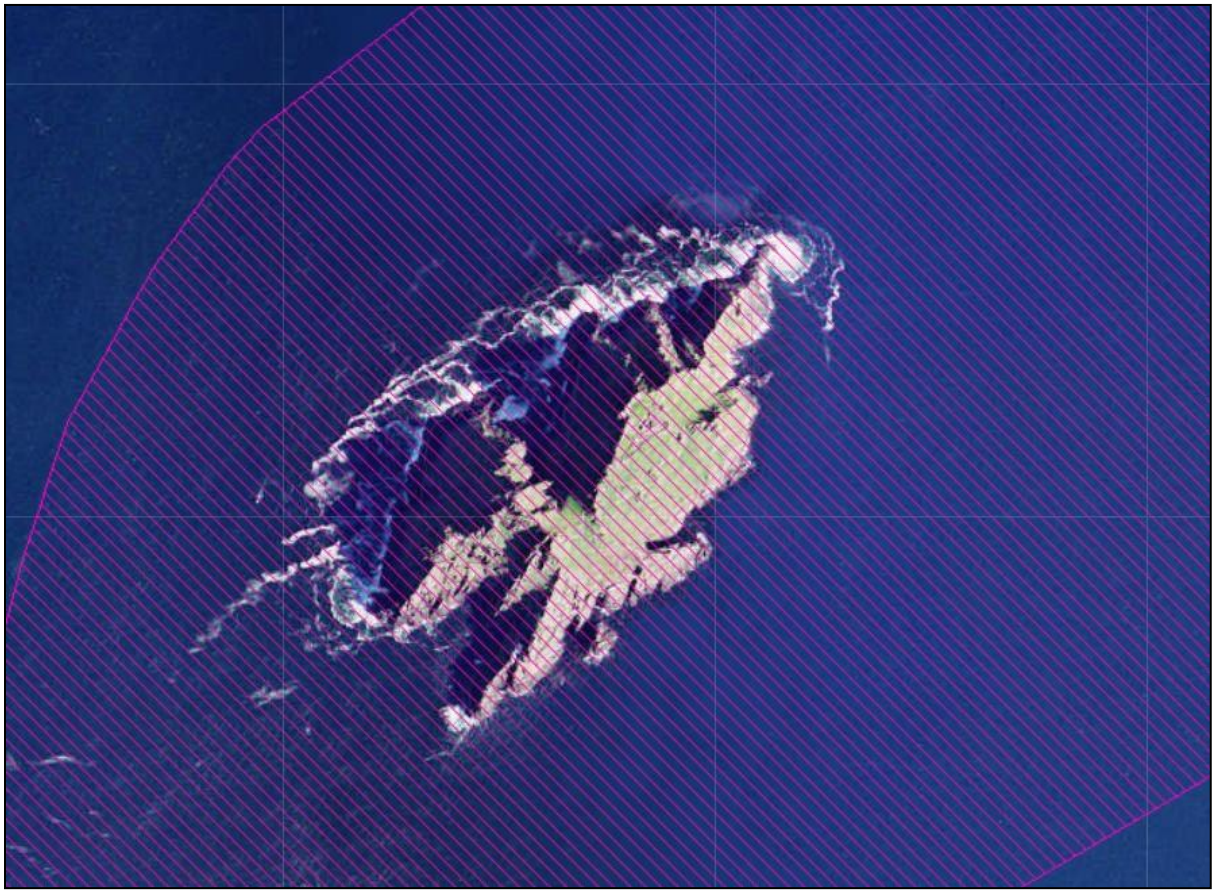

Figure 3. Skellig Michael and the Skelligs SPA (004007) boundary

Based on the precautionary principal, it could not be objectively concluded at screening stage that, in the absence of mitigation, significant adverse impacts as a result of the proposal can be ruled out for the Skelligs SPA. Hence, the recommendation of the screening process was to proceed to Stage 2 NIS for this site to determine whether the project is likely to adversely affect the integrity of this Natura 2000 site.

Please refer to the screening for appropriate assessment report which can be found in **Appendix 2** for more information.

6.1 DESCRIPTION OF SKELLIGS SPA (004007)

Skelligs SPA is designated for the protection of seven breeding seabird species, as follows:

- Fulmar (*Fulmarus glacialis*)
- Manx Shearwater (*Puffinus puffinus*)
- Storm Petrel (*Hydrobates pelagicus*)
- Gannet (*Morus bassanus*)
- Kittiwake (*Rissa tridactyla*)
- Guillemot (*Uria aalge*)
- Puffin (*Fraterclua arctica*)

The Skelligs SPA comprises the islands of Skellig Michael (Great Skellig) and Little Skellig and the surrounding marine waters. These highly exposed and isolated islands are located in the Atlantic some 12.7 km and 11 km (respectively) off the County Kerry mainland.

The site comprises one of the most important seabird colonies in the country in terms of both seabird populations and species diversity. Skellig Michael supports large breeding colonies of fulmar, Manx shearwater, storm petrel, kittiwake, guillemot and puffin, all of which, together with gannet, are designated as Special Conservation Interest species for the SPA.

Skellig Michael has an internationally important population of storm petrel (9,994 pairs in 2002)[2], with birds nesting both in the stonework associated with the monastic settlement and in natural crevices amongst the scree and rock. Skellig Michael also has one of the largest colonies of puffins in the country, with 4,000 individuals estimated in 1999. Other seabird species which occur on the island in nationally important numbers are fulmar (806 pairs), Manx shearwater (2,370 pairs), kittiwake (944 pairs), guillemot (2,551 individuals) and razorbill (454 individuals) (counts made between 1999 and 2002). Skellig Michael is also 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. Little Skellig is best known for the long established colony of gannets, with 26,436 pairs in the last full census in 1994. This is by far the largest gannet colony in Ireland and one of the largest in the world.

The breeding seabirds on the Skelligs have been fairly well documented over the years, with references to the gannet colony dating back to the 1700s. Owing to the importance of the islands for birds, each has been designated a Statutory Nature Reserve. In addition, the non-governmental organisation, BirdWatch Ireland, holds a long-term lease on Little Skellig which is largely inaccessible. Skellig Michael by contrast receives large numbers of tourists on a daily basis during each of the islands annual open seasons. The tourist open season on Skellig Michael is determined by seasonal constraints and daily weather conditions but typically runs from May to early October.

This site is one of the top five seabird sites in the country and is of international importance on account of the storm petrel and gannet populations. Storm petrel is listed on Annex I of the EU Birds Directive, as is chough and peregrine. The NPWS Skelligs SPA site synopsis is included in **Appendix 2**.

[2] https://www.npws.ie/sites/default/files/protected-sites/synopsis/SY004007.pdf

7 IDENTIFICATION OF POTENTIAL IMPACTS

The NIS has not included any environmental measures for consideration in determining the potential likely ecological impacts which may arise as a result of the proposal.

Table 1. Potential ecological impacts arising from the project

Description of elements of the project likely to give rise to potential ecological impacts.	• Works will be conducted entirely within a Natura 2000 site (Skelligs SPA) • Works are scheduled to take place during the breeding season for some SCI species • Works will be conducted within close proximity to known SCI breeding colonies and/or potential SCI breeding habitat.
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: • *Size and scale;* • *Land-take;* • *Distance from Natura 2000 Site or key features of the Site;* • *Resource requirements;* • *Emissions;* • *Excavation requirements;* • *Transportation requirements;* • *Duration of construction, operation etc.; and* • *Other.*	**Construction Phase** • 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. • Potential water quality impacts through use of concrete, paint, primer, fuel etc. and/or excavation works. **Operational Phase** • Potential risk of collision of SCIs with cable stays securing steel framework.

8 SELECTION OF QUALIFYING FEATURES FOR IMPACT ASSESSMENT

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 hereunder in **Table 2**. This was done through a scientific examination of ecological evidence and data listed above in **Section 3.3** 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 2: Selection of qualifying features of the Skelligs SPA for impact assessment

Qualifying Feature	Potential for Significant Impacts	Rationale
Fulmar	**Yes**	– 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. – Construction works will potentially overlap with the fulmar breeding season. – There is potential for direct/indirect disturbance/displacement of fulmar during the construction phase.
Manx shearwater	**Yes**	– 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. – Construction works will potentially overlap with the Manx shearwater breeding season. – There is potential for direct/indirect disturbance/displacement of Manx shearwater during the construction phase.
Kittiwake	**Yes**	– 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. – Construction works will potentially overlap with the kittiwake breeding season. – There is potential for direct/indirect disturbance/displacement of kittiwake during the construction phase.
Guillemot	**Yes**	– 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. – Guillemots are likely to have left breeding areas by the time works commence (works proposed late summer); however, there is some potential for overlap between the works and the guillemot breeding season.

Qualifying Feature	Potential for Significant Impacts	Rationale
		– Based on precautionary principle, there is potential for direct/indirect disturbance/displacement of guillemot during the construction phase.
Storm petrel	**Yes**	– Storm petrels utilise suitable stone walls and other man-made structures throughout the island for nesting. – While works to stone walls or other potential nesting habitat are not proposed as part of the works, part of the steel framework of the crash decks, comprising the outer steel columns, will be constructed adjacent to the inside face of the seawall at the three locations along the Lighthouse Road. – Works will take place during the storm petrel breeding season. – There is potential for storm petrels to occur in proximity to the proposed works (either within the adjacent seawall or in other suitable surrounding areas. – There is potential for direct/indirect disturbance/displacement impacts to storm petrel during the construction and operational phases of the project.
Puffin	**Yes**	– Suitable nesting habitat for puffin does not occur within the footprint of the works; however, puffins utilise the cliff slopes in the general area, including directly above the OPW workers huts, for nesting. – 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. – 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. – There is also potential for risk of collision during the operational phase of the project.
Gannet	**No**	– 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. – No potentially significant effects on gannet are envisaged as a result of the project.

8.1 CHARACTERISTICS OF THE ECOLOGICAL FEATURES SELECTED FOR IMPACT ASSESSMENT

The SCIs for the Skelligs SPA which have been selected for impact assessment are described as follows:

8.1.1 Fulmar (*Fulmarus glacialis*)

Northern fulmar is a common, gull-like bird. They breed all around the North Atlantic and North Pacific, with the bulk of the Atlantic population breeding in Iceland (Mitchell, et al., 2004). In Ireland, fulmar is found all around the Irish coast, although the majority are found in the west (Mitchell, et al., 2004). Although the species typically winters at sea, they can be seen in Irish waters all year round. Fulmar is listed as amber-listed under the most recent assessment of the conservation status of birds in Ireland (2020-2026) (Gilbert, et al., 2021).

During the breeding season they are found nesting on grassy cliff-ledges and shelves, although they may utilise less sloping ground in some areas (Mitchell, et al., 2004). The breeding period typically begins in May when a single egg is laid. At Scottish colonies, the breeding period has been found to begin in mid-May, with chicks subsequently fledging the nest in late August (Edwards et al., 2013). Annual studies on Skomer Island off the coast of Wales, have found that egg laying typically occurs towards the end of May, but has been recorded at the beginning of May also, with chicks typically hatching within the first two weeks of July (Taylor, et al., 2012). Fulmar is a common breeder on Skellig Michael, typically present from January to September (DEHLG, 2008). Data collected under the National Seabird Monitoring Programme over the period 2013 – 2018 estimated the breeding population of fulmar on Skellig Michael to comprise 725 AOS (Apparently Occupied Sites)[3].

During previous surveys undertaken on Skellig Michael by MWP in 2015, the breeding phenology of fulmar was examined. The bulk of egg-laying by fulmar was estimated to take place in mid-May. Hatching generally occurred in early July with fledging occurring in late August (MWP, 2015). The timing of fulmar egg laying and fledging on the island was found to correspond with findings of studies on breeding fulmar elsewhere, including studies on islands off the Scottish coast and on Skomer Island off the coast of Wales (Edwards et al., 2013; Taylor et al., 2012). In summary, the breeding phenology of fulmar on Skellig Michael was found to generally follow fulmar breeding phenology elsewhere within the species range at the time of the 2015 breeding seabird surveys.

8.1.2 Manx Shearwater (*Puffinus puffinus*)

Manx shearwaters are medium-sized seabirds which are widely-distributed throughout the North Atlantic. Britain and Ireland have the majority of the global breeding population (Mitchell, et al., 2004). In Ireland, they are amber-listed due to their localised breeding distribution (Gilbert, et al., 2021), with the bulk of the population found on islands mainly off the coast of counties Kerry and Galway (Mitchell, et al., 2004).

The species spends the majority of its time at sea, only returning to land to breed. As they are ground-nesting, these colonies occur mainly on remote, off-shore islands where they are free from the threat of mammalian predators. Manx shearwater feed at sea during the day before returning to burrows during the hours of darkness (Quillfeldt, et al., 2004; Spivey, et al., 2014). Therefore, their activity is only evident between dusk and dawn (Mitchell, et al., 2004). Outside of this time period they are typically not visible, either being off the island feeding or hidden underground. They have

[3] https://www.npws.ie/sites/default/files/publications/pdf/IWM114.pdf

very limited movement on land and are cumbersome, which makes them very vulnerable to predation by gulls[4]. Landing is generally dependant on weather conditions, with birds typically only returning to land on dark, moonless nights, to minimise risk of attack from gulls. Skellig Michael supports a nationally-important population of Manx shearwater. In 2001, a quantitative whole-island survey for Manx shearwater resulted in an estimate of 902 AOBs (Apparently Occupied Burrows) (Newton, 2009 as cited in DEHLG, 2015).

A study by Perrins (2014) on Skokholm Island off the coast of Wales found that the single egg is typically laid in early May. Chicks typicaly depart burrows in late August/early September (Perrins, 2014). Like the adults, emerging chicks are also vulnerable to gull predation (Perrins, 2014). Previous surveys undertaken on Skellig Michael by MWP in 2015, which concentrated on the three main areas of suitable nesting habitat for Manx shearwater on the island, namely the upper Monastery peak, the Lower Monastery garden and Christ's Saddle, examined the breeding phenology of Manx shearwater on Skellig Michael. The bulk of egg laying was estimated to take place in early-May, with hatching generally occurring in late June and fledging occurring in late August (MWP, 2015). At the time of the 2015 surveys, some chicks were still found to be occupying burrows in the first few days of September. By the end of September, only one chick was found to remain (in one of the Monastery cells). The timing of Manx shearwater egg laying and fledging on the island during the 2015 survey period was found to correspond with timings suggested by Perrins (2014).

In summary, at the time of the 2015 breeding seabird surveys, the breeding phenology of Manx shearwater on Skellig Michael was found to generally follow the breeding phenology observed on other off-shore islands elsewhere within the species range, in particular Skokholm Island, which like Skellig Michael, holds an important breeding colony of this species,

8.1.3 European Storm Petrel (*Hydrobates pelagicus*)

Storm petrel is a very small seabird which may be found throughout the Atlantic and North Pacific. Storm petrel is listed as an Annex I species under the EU Birds Directive[5]. As the breeding population is confined to only a few sites, storm petrel is therefore amber-listed in Ireland (Gilbert, et al., 2021).

Storm petrel is a summer visitor to Ireland, typically occurring between April and September, having over-wintered in the south Atlantic[6]. They are mainly an oceanic species, typically only returning to land to breed. In Ireland, breeding takes place on islands off the west coast, mainly off counties Kerry, Mayo, Galway and Donegal (Mitchell, et al., 2004). Kerry holds most of the population with large colonies occurring on uninhabited islands such as Inis Tuaisceart (27,297 pairs) (Mitchell, et al., 2004). During the breeding period, a single egg is laid, deep within crevices under rocks, cavities within walled structures or in burrows in the soil. Storm petrel either feed at sea during the day, returning to nest sites at dusk and departing before dawn, or remain on the nest throughout the day (Watson, et al., 2014). They do not typically emerge from their nests during daylight hours (Ratcliffe, et al., 1998).

[4] http://birdwatchireland.ie/IrelandsBirds/Tubenoses/ManxShearwater/tabid/143/Default.aspx [accessed 27/08/2015]

[5] European Union Directive (2009/147/EEC) on the Conservation of Wild Birds

[6] http://birdwatchireland.ie/IrelandsBirds/Tubenoses/StormPetrel/tabid/303/Default.aspx [accessed 27/08/2015]

The breeding period typically commences in May/June (DEHLG, 2015), with the majority of eggs laid in late June, as indicated by studies by Ratcliffe, et al., (1998) and Watson, et al., (2014) on islands off the Irish and British coasts, including Inis Tuaisceart, part of the Blasket Islands. However, the breeding phenology of storm petrel is highly variable. Egg laying may commence as early as the start of June or indeed as late as early August (Ratcliffe, et al., 1998; Watson, et al., 2014). Hatching typically occurs between mid-July and mid-Aug with average departure dates on Skokholm Island ranging from 6th September – 20th October (Davies, 1957). Chicks are well-developed upon departure, however, like Manx shearwater chicks, they are still quite vulnerable to predation at this time.

Skellig Michael is an internationally important site for storm petrel, which utilise monastic stone structures, dry-stone walls and natural crevices in rocky areas on the island for nesting (NPWS, 2004). The 2002 national census reported that approximately 9,994 pairs were estimated to breed on the island, representing approximately 10% of the all-Ireland population (Mitchell, et al., 2004).

Previous surveys undertaken on Skellig Michael by MWP in 2015 examined the breeding phenology of storm petrel on the island. Survey results indicated that the return to breeding colonies most likely commenced in May with the bulk of egg laying taking place in late June/early July. Hatching generally occurred in the first two weeks of August with fledging commencing at the end of September (MWP, 2015). Based on the estimated fledging period, it was predicted that at least some chicks would depart the island in the first three weeks of October 2015. During surveys at the end of September 2015, the developmental range of chicks throughout the island was found to be highly variable with one approximately one week old chick found at this time. This was not considered unusual due to the species highly variable breeding phenology. The majority of chicks observed at this time, however, were well developed and the first fledglings were recorded leaving their nests at the end of September.

The 2015 findings were considered consistent with the findings of other studies of storm petrel breeding biology, such as those by Davies (1957) on Stokholm Island and Ratcliffe (1998) on Inis Tuaisceart, located to the north of Skellig Michael.

8.1.4 Kittiwake (Rissa tridactyla)

Kittiwake has a very large distribution occurring throughout much of the Northern Hemisphere. In Ireland, the largest colonies traditionally occur in counties Donegal, Dublin and Clare (1998-2002 data) (Mitchell, et al., 2004). The most recent assessment of conservation status has included kittiwake as red-listed in Ireland as the breeding population is in decline (Gilbert, et al., 2021).

Kittiwakes form large breeding colonies, often in association with other seabird species. 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). Nests are built on steep cliff-faces, often on narrow, precarious ledges. This affords protection from predators. Between one and three eggs are laid, typically around mid-May with chicks hatching sometime in June (Taylor, et al., 2012). Fledging can occur at any time between five and seven weeks with chicks being relatively well-developed upon leaving the nests (Vincenzi & Mangel, 2013).

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 AONs (Apparently Occupied Nests)[7]. There are four main kittiwake breeding sub-colonies on the island; these being at Seal Cove, Cross Cove, Blue Cove and Blind Man's Cove, where the landing jetty is located.

Previous surveys undertaken on Skellig Michael by MWP in 2015 examined the breeding phenology of kittiwake. It was estimated that overall, the bulk of egg laying by kittiwakes took place in mid-May with hatching generally occurring in the first week of June. By early July, the kittiwake colony located below the helicopter-landing pad was observed to be developing well, with the majority of chicks expected to leave within the next week and a half. Incidentally, the arrival of a Commissioners of Irish Lights (CIL) helicopter to the landing pad located adjacent to the kittiwake Cross Cove sub-colony in early July 2015 caused no obvious disturbance to nesting kittiwakes in the area. The bulk of chicks were found to fledge in the first two weeks of July. By mid-July the majority of chicks had departed from the Cross Cove colony and were observed out to sea. Two chicks were observed on nests above the canopy in Cross Cove in the third week of August. These chicks were believed to be the last chicks remaining on nests on the whole island. By the 3rd September 2015, all kittiwake chicks were found to have departed the nesting colony at Cross Cove. By mid-September, the entire breeding colony of kittiwake and juveniles had departed the island.

In summary, the 2015 findings were found to be consistent with the findings of other studies of kittiwake breeding biology, such as those by Taylor, et al., (2012) on Skomer Island and Mitchell et al., (2004).

8.1.5 Common Guillemot (*Uria aalge*)

Guillemot is a highly-specialised marine species, widely distributed throughout the Northern Hemisphere. Due to a highly localised breeding distribution, the species is amber-listed in Ireland (Gilbert, et al., 2021), with the largest colonies occurring in counties Dublin, Clare and Wexford (1998-2002 data) (Mitchell, et al., 2004). Guillemot is found around the Irish coast all year round, only coming to land to breed. They form colonies on sea-cliffs where suitable nesting ledges are present. Rather than building nests, the eggs are laid directly onto rock. Nesting space is therefore often in short supply and adults will actively defend small patches of ground.

The breeding season begins around March/April, with a single egg usually laid between the end of April and the middle of May. Adults take it in turns to go to sea and feed, once the egg has hatched, typically sometime between the end of May and the middle of June (Birkhead, et al., 2012; Taylor, et al., 2012). Young typically leave the nest sometime between mid-June and mid-July to join the adult males at sea, where they continue to develop (Birkhead, et al., 2012; Taylor, et al., 2012). All young will have typically left the breeding ledges by mid-July.

Skellig Michael holds nationally important numbers of guillemot. Data collected under the National Seabird Monitoring Programme over the period 2013 – 2018 estimated the breeding population of guillemot on Skellig Michael to comprise 2,297 individuals[8]. These are dispersed between the same four sub-colonies as used by kittiwake (DEHLG, 2015).

[7] https://www.npws.ie/sites/default/files/publications/pdf/IWM114.pdf

[8] https://www.npws.ie/sites/default/files/publications/pdf/IWM114.pdf

Previous surveys undertaken on Skellig Michael by MWP in 2015 examined the breeding phenology of guillemot on the island. It was estimated that overall, the bulk of egg laying took place in the first week of May, with hatching generally occurring in the first week of June and fledging generally occurring in the first two weeks of July (MWP, 2015). The guillemot sub-colony at Cross Cove was found to be virtually empty by the 8th July during the 2015 survey period. The sub-colony at Lighthouse Bay was also found to have emptied by mid-July.

In summary, the 2015 findings were considered consistent with the findings of other studies of guillemot breeding biology, such as those by Birkhead, et al., (2012) and Taylor, et al., (2012),

8.1.6 Atlantic Puffin (*Fratercula arctica*)

Puffin is a small species of auk which has a very large distribution, occurring throughout the North Atlantic Ocean from north-west Greenland to north Norway and down to the Iberian Peninsula and beyond. The species is red-listed in Ireland as the Irish population has a localised distribution. The species is considered to be of global conservation concern (Gilbert, et al., 2021). Traditionally, the largest numbers occur in Co. Kerry with 9,514 burrows recorded during the 1998-2002 national census (Mitchell, et al., 2004). Other important sites for puffin in Ireland include counties Mayo, Wexford and Donegal (Mitchell, et al., 2004).

Skellig Michael is a nationally important site for this species with 6,000 pairs estimated in 2002[9]. Like guillemot, puffins also nest in large colonies. They are typically ground-nesting, digging burrows in grassy slopes (Finney, et al., 2001), although they will occasionally utilise natural crevices in boulder scree. They have been known to also make use of rabbit burrows. As they are ground-nesting they tend to nest on off-shore islands which are free from mammalian predators. However, chicks are still susceptible to predation by gulls and likewise adults are open to attack, particularly when returning to burrows with food (Finney, et al., 2001).

The breeding season lasts from April to early August[10], although birds may arrive to breeding colonies as early as February (DEHLG, 2015). Like many other seabird species, a single egg is laid (Finney, et al., 2001). Eggs are normally laid during May (DEHLG, 2015), although it can occur earlier in the season, as found by some studies. A study on Skomer Island, off the Welsh coast, found some eggs to have been laid within the first week of April, 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). Population censuses on the island, between 1990 and 2002, have recorded counts of between 3,055 and 6,000 individuals (Merne & Walsh, 2005 as cited in DEHLG, 2015). The latest population census, carried out in 2010, estimated 2,170 individuals[11].

Previous surveys undertaken by MWP on Skellig Michael in 2015 examined the breeding phenology of puffin. It was estimated that overall, the bulk of egg laying took place in the second two weeks of April, hatching occurred between the end of May and middle of June and fledging typically occurred in the middle two weeks of July (MWP, 2015). By mid-July the bulk of young puffins were departing the nests, with some already having left the island. By the second week of August, puffins were virtually absent from the island although could be seen out to sea to the south of the island.

[9] https://www.npws.ie/sites/default/files/protected-sites/synopsis/SY004007.pdf [accessed 01/04/2021]
[10] http://birdwatchireland.ie/IrelandsBirds/Auks/Puffin/tabid/363/Default.aspx [accessed 27/08/2015]
[11] http://jncc.defra.gov.uk/smp [accessed 16/10/2015]

With regard to other studies, the estimated egg laying period for puffin on Skellig Michael in 2015 was found to be later in the breeding season than what has been found elsewhere; however, like storm petrel, it is apparent that puffin has a variable breeding phenology. Although the estimated timing of hatching was found to be slightly later than the mid-May hatching period recorded by Taylor, et al., (2012) on Skomer Island, it was largely similar to the end of May hatching period found by Finney, et al., (2001).

9 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 8** above and determines whether the proposal is likely to have adverse effects on the Conservation Objectives of the Skelligs SPA.

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
- Habitat or species fragmentation

The likelihood of significant cumulative/in-combination effects is assessed in **Section 9.6** below.

9.1 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 construction 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. Concrete required for the works will be prepared at each works locations and will be poured in-situ for the crash deck grillage foundations. 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 concrete and/or concrete washout to the existing drainage network during rainfall events, or through accidental spillage/improper storage. Concrete and cementitious materials are highly-alkaline substances which are toxic to aquatic life.

The works will involve excavation of the existing road surface to facilitate grillage foundations. While some dust and other fines will be generated during these works, 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, general measures for protection of water quality are proposed with regards to this aspect of the works.

This existing drainage network provides a direct pathway through which water quality impacts could arise. The naturally steep typography of the island increases the risk posed to marine water quality

in the event of uncontrolled run-off from works areas. Maintenance of marine water quality in the surrounding waters is vital in terms of the quality of the seabird foraging resource in general. In the absence of suitable controls, accidental ingress of concrete, fuel or other such contaminated run-off has the potential to result in significant water quality impacts within the Skelligs SPA.

In order to ensure that there is no potential for significant water quality impacts within the marine environment, and based on the precautionary principle, mitigation measures are recommended in relation to the use of cement, concrete, fuel and other such substances and general excavation works as part of the project. **Section 10** below outlines mitigation measures designed to avoid or reduce any potential adverse water quality impacts that might ensue as a result of the proposal. Residual impacts are assessed in **Section 11** below.

9.2 HABITAT LOSS/ALTERATION

As part of the works, areas of the existing un-vegetated road surface and sub-material will be excavated to facilitate the grillage foundations for each crash deck. Similarly, negligible areas of rock in the cliff-faces below and to the rear of each crash deck will be removed via drilling to allow for rock bolts to be fitted to secure cable stays extending from each structure. These areas comprise neither qualifying interest habitats for the SPA nor supporting habitat of any intrinsic ecological value to SCIs for the SPA. Removal of these areas of stone fill/rock will not affect the structure or functioning of the SPA.

Bearing in mind the limited scope of the proposal, significant direct habitat loss or alteration impacts within the Skelligs SPA are not foreseen as a result of the proposal. The potential for indirect alteration of aquatic habitat comprising the surrounding marine waters has been discussed above in Section 9.1.

9.3 DISTURBANCE AND/OR DISPLACEMENT OF SPECIES

9.3.1 Construction Phase

Fulmar 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. Works are scheduled to take place sometime in late summer. Previous surveys have found that the bulk of juvenile fulmars typically fledge at the end of August. Therefore, construction activity is likely to overlap with the end of the fulmar breeding season.

Manx shearwater do not utilise any of the habitats within the footprint of the works for nesting. In general, an abundance of suitable nesting habitat for this species does not occur in the vicinity of the works; however, based on the precautionary principle, it is considered that Manx shearwater could potentially occur in the greater area. Previous studies have found that Manx shearwaters typically fledge at the end of August and into September; therefore, the proposed works will overlap with the Manx shearwater breeding season.

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.

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 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 not overlap with the guillemot breeding season and so construction related disturbance or displacement impacts on guillemot are not envisaged.

Storm petrels utilise stone walls and other man-made structures throughout the island for nesting. The proposal will result in construction activity immediately adjacent to the masonry seawall on the Lighthouse Road, which comprises 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. Breeding storm petrel located in close proximity to the proposed works areas may be subject to potential disturbance or displacement impacts.

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.

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. It is noted however that the works will not require the use of heavy machinery and excavations of the roadway will be undertaken by hand. 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.

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 three specific locations along the Lighthouse Road and to within the footprint of the roadway. The works will take place on a phased basis with work commencing and finishing at each works location before continuing on to the next works area. 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. 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 10** in relation to construction activity.

9.3.2 Operational Phase

With regard to storm petrel and the location of crash decks, the outer steel columns of each crash deck will be set back sufficiently from the inside of the seawall at each location such that the inside face of the wall and any cavities potentially therein will remain accessible to storm petrels for nesting. There will be no hindering of storm petrels potentially returning to or leaving from nest cavities in the masonry structure.

There is, albeit minor, potential for collision between SCIs and the cable stays which will be used to secure the crash decks to adjacent cliff-faces. In particular, given the location of **Crash Deck 1**, there is potential for puffin to collide with the cables as they arrive to and depart from the slopes above the OPW workers huts where they are known to nest. On a precautionary basis, mitigation is included in **Section 10** in relation to the operational phase of the proposal.

9.4 HABITAT OR SPECIES FRAGMENTATION

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.

Significant habitat loss/alteration or species disturbance or displacement impacts are not envisaged as a result of the proposal. 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 9.1** and further outlined in **Section 10** below.

9.5 ASSESSMENT OF EFFECT ON THE CONSERVATION OBJECTIVES OF THE SKELLIGS SPA

In **Section 8** 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 3.3** or referenced. In this case, all SCIs apart from gannet, were selected for further assessment (see **Section 8** 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.

9.5.1 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 3** below which also includes an assessment of the effects of the project against these measures.

Table 3. Assessment of effects on conservation objectives of fulmar

Attribute/Measure	Target	Assessment of Potentially Significant Effects	Mitigation Required
Breeding population abundance: Apparently Occupied Sites (AOSs)	No significant decline	No significant decline in the breeding population abundance of fulmar within the SPA is predicted as a result of the proposal.	**No**
Productivity rate	No significant decline	No significant decline in productivity rate of fulmar within the SPA is predicted as a result of the proposal.	**No**
Distribution: breeding	No significant decline	No significant decline in the distribution of fulmar breeding colonies within the	**No**

Attribute/Measure	Target	Assessment of Potentially Significant Effects	Mitigation Required
colonies		SPA is predicted as a result of the proposal.	
Prey biomass available	No significant decline	No significant decline in the prey biomass available to fulmar within the SPA is predicted as a result of the proposal. However, on a precautionary basis, mitigation measures in relation to protection of water quality during construction and operation are recommended.	**Yes** **See Section 10**
Barriers to connectivity	No significant increase	There will be no increase in barriers to connectivity for fulmar within the SPA as a result of the proposal.	**No**
Disturbance at the breeding site	No significant increase	A significant increase in disturbance of fulmar at breeding sites is not envisaged during either the construction or operational phase of the project. 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.	**Yes** **See Section 10**
Disturbance at marine areas immediately adjacent to the colony	No significant increase	There will be no increase in disturbance at marine areas adjacent to the fulmar colony as a result of the proposal.	**No**

9.5.2 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 4** below which also includes an assessment of the effects of the project against these measures.

Table 4. Assessment of effects on conservation objectives of Manx shearwater

Attribute/Measure	Target	Assessment of Potentially Significant Effects	Mitigation Required
Breeding population abundance: Apparently Occupied Sites (AOS)	No significant decline	No significant decline in the breeding population abundance of Manx shearwater within the SPA is predicted as a result of the proposal.	**No**
Productivity rate	No significant decline	No significant decline in productivity rate of Manx shearwater within the SPA is predicted as a result of the proposal.	**No**
Distribution: breeding colonies	No significant decline	No significant decline in the distribution of Manx shearwater breeding colonies within the SPA is predicted as a result of the proposal.	**No**
Prey biomass available	No significant decline	No significant decline in the prey biomass available to Manx shearwater within the SPA is predicted as a result of the proposal. However, on a precautionary basis, mitigation measures in relation to protection of water quality during construction and operation are recommended.	**Yes** **See Section 10**
Barriers to connectivity	No significant increase	There will be no increase in barriers to connectivity for Manx shearwater within the SPA as a result of the proposal.	**No**
Disturbance at the breeding site	No significant increase	A significant increase in disturbance of Manx shearwater at breeding sites is not envisaged during either the construction or operational phase of the project. 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.	**Yes** **See Section 10**
Disturbance at marine areas immediately	No significant increase	There will be no increase in disturbance at marine areas adjacent to the Manx shearwater colony as a result of the proposal.	**No**

Attribute/Measure	Target	Assessment of Potentially Significant Effects	Mitigation Required
adjacent to the colony			
Occurrence of mammalian predators	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 (eight weeks). On a precautionary basis, some general mitigation measures in relation to preventing the spread of mammalian predators onto the island are proposed.	**Yes** **See Section 10**

9.5.3 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 5** below which also includes an assessment of the effects of the project against these measures.

Table 5. Assessment of effects on conservation objectives of storm petrel

Attribute/Measure	Target	Assessment of Potentially Significant Effects	Mitigation Required
Breeding population abundance: Apparently Occupied Site (AOS)	No significant decline	No significant decline in the breeding population abundance of storm petrel within the SPA is predicted as a result of the proposal.	**No**
Productivity rate	No significant decline	No significant decline in productivity rate of storm petrel within the SPA is predicted as a result of the proposal.	**No**
Distribution: breeding colonies	No significant decline	No significant decline in the distribution of storm petrel breeding colonies within the SPA is predicted as a result of the proposal.	**No**
Prey biomass available	No significant decline	No significant decline in the prey biomass available to storm petrel within the SPA is predicted as a result of the proposal. However, on a precautionary basis, some general mitigation measures in relation to protection of water quality during construction and operation are recommended.	**Yes** **See Section 10**

Attribute/Measure	Target	Assessment of Potentially Significant Effects	Mitigation Required
Barriers to connectivity	No significant increase	There will be no increase in barriers to connectivity for storm petrel within the SPA as a result of the proposal.	**No**
Disturbance at the breeding site	No significant increase	Significant disturbance impacts to storm petrel at breeding sites are not envisaged as a result of the proposal. Some general protective 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.	**Yes** **See Section 10**
Disturbance at marine areas immediately adjacent to the colony	No significant increase	There will be no increase in disturbance at marine areas adjacent to the storm petrel colony as a result of the proposal.	**No**
Occurrence of mammalian predators	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 (eight weeks). On a precautionary basis, some general mitigation measures in relation to preventing the spread of mammalian predators onto the island are proposed.	**Yes** **See Section 10**

9.5.5 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 6** below which also includes an assessment of the effects of the project against these measures.

Table 6. Assessment of effects on conservation objectives of kittiwake

Attribute/Measure	Target	Assessment of Potentially Significant Effects	Mitigation Required
Breeding population abundance: Apparently Occupied Nests (AONs)	No significant decline	No significant decline in the breeding population abundance of kittiwake within the SPA is predicted as a result of the proposal.	**No**
Productivity rate	No significant decline	No significant decline in productivity rate of kittiwake within the SPA is predicted as a result of the proposal.	**No**
Distribution: breeding colonies	No significant decline	No significant decline in the distribution of kittiwake breeding colonies within the SPA is predicted as a result of the proposal.	**No**
Prey biomass available	No significant decline	No significant decline in the prey biomass available to kittiwake within the SPA is predicted as a result of the proposal. However, on a precautionary basis, some general mitigation measures in relation to protection of water quality during construction and operation are recommended.	**Yes** **See Section 10**
Barriers to connectivity	No significant increase	There will be no increase in barriers to connectivity for kittiwake within the SPA as a result of the proposal.	**No**
Disturbance at the breeding site	No significant increase	Significant disturbance impacts to kittiwakes at breeding sites are not envisaged as a result of the proposal. Some general protective 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.	**Yes** **See Section 10**

9.5.6 Common Guillemot [A199]

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 7** below which also includes an assessment of the effects of the project against these measures.

Table 7. Assessment of effects on conservation objectives of guillemot

Attribute/Measure	Target	Assessment of Potentially Significant Effects	Mitigation Required
Breeding population abundance: individual adult	No significant decline	No significant decline in the breeding population abundance of guillemot within the SPA is predicted as a result of the proposal.	**No**
Productivity rate	No significant decline	No significant decline in productivity rate of guillemot within the SPA is predicted as a result of the proposal.	**No**
Distribution: breeding colonies	No significant decline	No significant decline in the distribution of guillemot breeding colonies within the SPA is predicted as a result of the proposal.	**No**
Prey biomass available	No significant decline	No significant decline in the prey biomass available to guillemot within the SPA is predicted as a result of the proposal. However, on a precautionary basis, some general mitigation measures in relation to protection of water quality during construction and operation are recommended.	**Yes** **See Section 10**
Barriers to connectivity	No significant increase	There will be no increase in barriers to connectivity for guillemot within the SPA as a result of the proposal.	**No**
Disturbance at the breeding site	No significant increase	Significant disturbance impacts to guillemot at breeding sites are not envisaged as a result of the proposal. Some general protective 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.	**Yes** **See Section 10**
Disturbance at marine areas immediately adjacent to the colony	No significant increase	There will be no increase in disturbance at marine areas adjacent to the guillemot colony as a result of the proposal.	**No**

9.5.7 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 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 puffin

Attribute/Measure	Target	Assessment of Potentially Significant Effects	Mitigation Required
Breeding population abundance: Apparently Occupied Burrow (AOB)	No significant decline	No significant decline in the breeding population abundance of puffin within the SPA is predicted as a result of the proposal. On a highly precautionary basis, mitigation is included in regard to the cable stays which will attach to the surrounding cliff-faces.	**Yes** **See Section 10**
Productivity rate	No significant decline	No significant decline in productivity rate of puffin within the SPA is predicted as a result of the proposal. On a highly precautionary basis, mitigation is included in regard to the cable stays which will attach to the surrounding cliff-faces.	**Yes** **See Section 10**
Distribution: breeding colonies	No significant decline	No significant decline in the distribution of puffin breeding colonies within the SPA is predicted as a result of the proposal.	**No**
Prey biomass available	No significant decline	No significant decline in the prey biomass available to puffin within the SPA is predicted as a result of the proposal. However, on a precautionary basis, some general mitigation measures in relation to protection of water quality during construction and operation are recommended.	**Yes** **See Section 10**
Barriers to connectivity	No significant increase	There will be no increase in barriers to connectivity for puffin within the SPA as a result of the proposal.	**No**
Disturbance at the breeding site	No significant increase	Significant disturbance impacts to puffins at breeding sites are not envisaged as a result of the proposal. Some general protective measures are recommended to	**Yes**

Attribute/Measure	Target	Assessment of Potentially Significant Effects	Mitigation Required
		minimise any potential disturbance impacts as a result of construction works, increased human activity or fugitive noise emissions during the construction phase.	**See Section 10**
Disturbance at marine areas immediately adjacent to the colony	No significant increase	There will be no increase in disturbance at marine areas adjacent to the puffin colony as a result of the proposal.	**No**
Occurrence of mammalian predators	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 (eight weeks). On a precautionary basis, some general mitigation measures in relation to preventing the spread of mammalian predators onto the island are proposed.	**Yes** **See Section 10**

9.6 CUMULATIVE/IN-COMBINATION IMPACTS

As well as singular effects, the potential for in-combination or cumulative affects 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 in **Section 5** above.

9.6.1 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.

9.6.2 Tourism

With regard to on-going tourist activity on the island, the works are scheduled to take place in late summer which overlaps with the island's typical open season for visitors. However, the public do not have access to any of the proposed areas of work. All work will take place beyond the limits of public access on the Lighthouse Road. Therefore, it is considered that there is no potential for significant cumulative or in-combination impacts as a result of interaction between tourism and the proposed works.

9.6.3 On-going Remedial and Conservation Works to the Upper Lighthouse Road and Seawall

Phase 3 and Phase 4 of the on-going Upper Lighthouse Road and Seawall conservation project are scheduled to continue/commence during the coming open season. It is not considered that there is potential for significant cumulative or in-combination impacts due to interaction with the works proposed at **Crash Deck 2** and **Crash Deck 3** along the Upper Lighthouse Road, which form part of this assessment, due to the scale of the works proposed, the proposed phased approach to the works, the highly localised nature of the works and the temporary duration over which they will occur. **Crash Deck 1** is located along the Lower Lighthouse Road and so will not overlap spatially with on-going conservation works to the Upper Lighthouse Road.

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.

10 MITIGATION

10.1 CONSTRUCTION PHASE

10.1.1 Recommended Timing of Works

It is recommended that works are conducted anytime from mid- to late-August onwards. Pushing out works to later in the overall breeding season will reduce the likelihood of an overlap between construction activity and SCI breeding activity on the island in general. It will also reduce the potential for disturbance/displacement impacts as chicks/juveniles potentially in the vicinity of the works, in particular storm petrels, and to a lesser extent juvenile puffins, will be relatively more developed.

10.1.2 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.
- Excavation of the existing road surface and sub-material is to be undertaken by hand.
- 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.

10.1.3 Use of Concrete

- 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.
- Pouring of concrete to be carried out during periods of dry weather with no rain forecast.
- A designated trained operator, experienced in working with concrete, will be employed for concrete pouring.
- The use of concrete is to be carefully controlled to avoid spillage.
- Any spillage/waste concrete residues are to be cleaned up and disposed of to waste.

10.1.4 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.

10.1.5 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.
- Concrete washout from mixers and any fuel/oil residues are to be stored in sealed plastic containers for removal from the island by boat.

10.1.6 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.

10.2 OPERATIONAL PHASE

10.2.1 Reducing Collision Risk

It is recommended that bird deflectors be used on the cable stays which will secure each crash deck to the surrounding cliff-face. This is mainly in regard to **Crash Deck 1** located adjacent to a known puffin nesting area, as discussed previously, but based on the precautionary approach; deflectors should be fitted to all cable stays to reduce risk of collision by seabirds in-flight.

11 RESIDUAL IMPACTS

Provided that the recommended mitigation measures set out in **Section 10** are implemented in full, it is not expected that significant residual impacts will result from the proposed works.

12 CONCLUSION

It has been objectively concluded, following an examination, analysis and evaluation of the relevant information, including in particular the nature of the predicted impacts from the proposed works and with the implementation of the mitigation measures proposed, that the proposed works will not adversely affect (either directly or indirectly) the integrity of any European site, namely the Skelligs SPA (004007), either alone or in combination with other plans or projects, and there is no reasonable scientific doubt in relation to this conclusion.

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Appendix 1

Stages of Appropriate Assessment

Stage 1 - Screening

This is the first stage of the Appropriate Assessment process and that undertaken to determine the likelihood of significant impacts as a result of a proposed project or plan. It determines need for a full Appropriate Assessment.

If it can be concluded that no significant impacts to Natura 2000 sites are likely then the assessment can stop here. If not, it must proceed to Stage 2 for further more detailed assessment.

Stage 2 - Natura Impact Statement (NIS)

The second stage of the Appropriate Assessment process assesses the impact of the proposal (either alone or in combination with other projects or plans) on the integrity of the Natura 2000 site with respect to the conservation objectives of the site and its ecological structure and function. This is a much more detailed assessment that Stage 1. A Natura Impact Statement containing a professional scientific examination of the proposal is required and includes any mitigation measure to avoid, reduce or offset negative impacts.

If the outcome of Stage 2 is negative i.e. adverse impacts to the sites cannot be scientifically ruled out, despite mitigation, the plan or project should proceed to Stage 3 or be abandoned.

Stage 3 - Assessment of alternative solutions

A detailed assessment must be undertaken to determine whether alternative ways of achieving the objective of the project/plan exists.

Where no alternatives exist the project/plan must proceed to Stage 4.

Stage 4 - Assessment where no alternative solutions exist and where adverse impacts remain

The final stage is the main derogation process examining whether there are imperative reasons of overriding public interest (IROPI) for allowing a plan or project to adversely affect a Natura 2000 site where no less damaging solution exists.

Appendix 2

Screening for Appropriate Assessment

Malachy Walsh and Partners
Engineering and Environmental Consultants

Screening for Appropriate Assessment

Construction of 3 No. Permanent Crash Decks on Lighthouse Road, Skellig Michael Island

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ISSUE FORM	
Project number	12242
Document number	6041
Document revision	A
Document title	Screening for Appropriate Assessment: Construction of 3 No. Permanent Crash Decks on Lighthouse Road, Skellig Michael Island
Document status	Final
Issue date	22-06-2021
Document prepared by	HD
Document checked by	MKy – MWP – 22-06-2021

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1 SUMMARY OF FINDINGS

1.1 SCREENING FOR APPROPRIATE ASSESSMENT

Project Title	Screening for Appropriate Assessment for Construction of 3 No. Permanent Crash Decks on Lighthouse Road on Skellig Michael Island
Project Proponent	The Office of Public Works (OPW)
Project Location	The project is located on Skellig Michael Island, located approximately 12.7 km west of the Iveragh Peninsula in County Kerry, Ireland. Works are proposed in three separate locations along the Lighthouse Road on the island.
Conclusion	It has been objectively concluded during the screening process that three sites within 15km or the zone of potential impact influence of the project can be excluded from likely significant impacts from the proposal. These include: • Valencia Harbour/Portmagee Channel SAC (002262) • Iveragh Peninsula SPA (004154) • Puffin Island SPA (004003) However, based on the precautionary principal, it cannot be objectively concluded that significant impacts as a result of the proposal can be ruled out at this stage for the following Natura 2000 site: • Skelligs SPA (004007) Further assessment is required to determine whether the project is likely to adversely affect the integrity of this Natura 2000 site. Hence, the recommendation of the screening process is to proceed to Stage 2 Natura Impact Statement (NIS) for the Skelligs SPA.

2 INTRODUCTION

2.1 PURPOSE OF ASSESSMENT

The Office of Public Works (OPW) is applying for Ministerial Consent to the Department of Housing, Local Government and Heritage (DHLGH) for proposed construction works on Skellig Michael Island.

This screening for appropriate assessment report has been undertaken to determine whether the proposed works by OPW on the Lighthouse Road on Skellig Michael are likely to result in significant effects on nearby sites with European conservation designations (i.e. Natura 2000 Sites). The screening exercise determines the need for a full appropriate assessment.

The screening for appropriate assessment report has been undertaken by Malachy Walsh and Partners (MWP) ecologists.

2.2 PROJECT OVERVIEW

On the 27th July 2020, a rock fall occurred on Skellig Michael in the vicinity of the OPW workmen's compound located on the south side of the island on the Lower Lighthouse Road. The fall area is in a location where water from the high ground over head tends to channel down with the result that debris is often found on the road after the winter season in this area. At the time, the island was closed to visitors due to Covid restrictions; however, some contractors were present on the island. The island is still closed but OPW personnel are continuing to work on ongoing maintenance on the island.

Previous rock falls, of varying concern, have occurred on the island. These typically happen during the winter months, reflecting the extreme exposure of the site and its vulnerability to increased aggression during these months. The OPW have a well-established protocol for optimising safety on the island when the workmen return to the island in May of each year. Typically, this involves specialist personal sweeping the high ground over the landing and access road at all locations to remove any rocks considered to pose a danger. These rocks are either removed to a safer location or are broken up and brought down in a controlled manner.

There have been incidences during the working season most notably a 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 ongoing debris falling on an ongoing basis at this location. A temporary canopy, of scaffold and board construction, was also provided on the Upper Lighthouse Road to give protection to OPW personnel while carrying out conservation work in this area.

These rock-falls, including in particular the most recent rock-fall, adjacent to the workmen's compound, which occurred during the working season, represent a serious health and safety concern for staff and visitors on the island. Permanent crash decks are proposed at three locations considered to be vulnerable to further rock-fall along the Lighthouse Road to improve health and safety on the island.

2.3 LEGISLATIVE CONTEXT

The Habitats Directive (92/43/EEC) seeks to conserve natural habitats of wild fauna and flora by the designation of Special Areas of Conservation (SACs) and the Birds Directive (79/409/EEC) seeks to protect birds of special importance by the designation of Special Protected Areas (SPAs). It is the responsibility of each member state to designate SPAs and SACs, both of which form part of Natura 2000, a network of protected sites throughout the European Community. The Habitats Directive has been transposed into Irish law and the relevant Regulations are the European Communities (Birds and Natural Habitats) Regulations 2011.

The requirement for appropriate assessment of the implications of plans and projects on the Natura 2000 network of sites comes from the Habitats Directive (Article 6(3)). The current assessment was conducted within this legislative framework and also the DoEHLG (2009) guidelines. A screening for appropriate assessment determines whether an appropriate assessment of the proposed development is required if it cannot be excluded, in view of best scientific knowledge, that the proposed development, individually or in combination with other plans or projects, will have a significant effect on a Natura 2000 site, in view of the site's conservation objectives.

The information presented in this screening for appropriate assessment report will be used by the competent authority to assist them to complete their screening exercise. If it is determined that an appropriate assessment is required in respect of the proposed development, a Natura Impact Statement (NIS) must be prepared. The NIS will assist the competent authority to conduct the appropriate assessment.

2.4 STAGES OF APPROPRIATE ASSESSMENT

The appropriate assessment process is a four-stage process with issues and tests at each stage. An important aspect of the process is that the outcome at each successive stage determines whether a further stage in the process is required. The stages are set out in Appendix 1.

3 ASSESSMENT METHODOLOGY

3.1 APPROPRIATE ASSESSMENT GUIDANCE

This screening for appropriate assessment, or Stage 1, has been undertaken in accordance with the European Commission Methodological Guidance on the provision of Article 6(3) and 6(4) of the 'Habitats' Directive 92/43/EEC (EC, 2001) and the European Commission Guidance 'Managing Natura 2000 sites' (EC, 2018) and guidance prepared by the NPWS (DoEHLG, 2009).

3.2 CONSULTATION

Consultation has taken place between the OPW and the DHLGH.

3.3 DESK STUDY

In order to complete the screening for appropriate assessment certain information on the existing environment is required. A desk study was carried out to collate available information on the site's natural environment. This comprised a review of the following publications, data and datasets:

- OSI Aerial photography and 1:50000 mapping
- National Parks and Wildlife Service (NPWS)
- National Biodiversity Data Centre (NBDC) (on-line map-viewer)

- BirdWatch Ireland
- Teagasc soil area maps (NBDC website)
- Geological Survey Ireland (GSI) area maps
- Environmental Protection Agency (EPA) water quality data
- Other information sources and reports footnoted in the course of the report

3.4 SCREENING FOR APPROPRIATE ASSESSMENT

As set out in the NPWS (DoEHLG, 2009) guidance, the task of establishing whether a plan or project is likely to have an effect on a Natura 2000 site is based on a preliminary impact assessment using available information and data, including that outlined above, and other available environmental information, supplemented as necessary by local site information and ecological surveys. This is followed by a determination of whether there is a risk that the effects identified could be significant. The precautionary principal approach is required.

Once the potential impacts that may arise from the proposal are identified the significance of these is assessed through the use of key indicators:

- Habitat loss
- Habitat alteration
- Disturbance and/or displacement of species
- Habitat or species fragmentation
- Water quality and resource

4 SCREENING FOR APPROPRIATE ASSESSMENT

Screening for appropriate assessment (Stage 1) determines the need for a full appropriate assessment (Stage 2) and consists of a number of steps, each of which is addressed in the following sections of this report:

- Establish whether the proposal is necessary for the management of a Natura 2000 site
- Description of the project (construction of 3 No. permanent crash decks on the Lighthouse Road on Skellig Michael)
- Identification of Natura 2000 sites potentially affected
- Identification and description of individual and cumulative impacts of the project
- Assessment of the significance of the impacts on the integrity of Natura 2000 sites
- Conclusion of screening stage

4.1 MANAGEMENT OF NATURA 2000 SITES

The proposal is not connected with or necessary to the conservation management of a Natura 2000 site.

4.2 DESCRIPTION OF PROJECT

4.2.1 Overview of the Site

Skellig Michael is an island (the larger of the two Skellig Islands) located in the Atlantic Ocean, approximately 12.7 km west of the Iveragh Peninsula in County Kerry, Ireland. Skellig Michael is home to one of the best preserved Christian, monastic settlements dating from the early medieval period, comprising a monastery, hermitage and several stone stairways, which connect the various

archaeological features, as well as provide access throughout parts of the island (DEHLG, 2008). The settlement is extremely well-preserved, most probably as a result of the islands remoteness, which together with the harsh weather conditions experienced for much of the year, serves to limit human visitation. However, as a result of its immense archaeological, spiritual and cultural significance, Skellig Michael still attracts large numbers of tourists each year throughout the summer months. An on-going conservation programme, under the management of the OPW, also serves to maintain the site through managing visitor access and carrying out necessary maintenance works.

Located in the north-east Atlantic Ocean, the island is subject to a temperate Atlantic climate, strongly influenced by the Gulf Stream. Much of the island surface is characterised by sheer cliff-face, exposed bedrock, boulders and scree. As a result, vegetation cover is not extensive in any area. Skellig Michael is of major importance, both in a national and international context, due to its populations of breeding seabirds, both in terms of the species and numbers it sustains (DEHLG, 2008).

4.2.2 Site Location

Works are proposed at three locations on the Lighthouse Road on the island as part of the project:

- **Crash Deck 1**: Located adjacent to the workmen's compound on the Lower Lighthouse Road.
- **Crash Deck 2**: Located at the first bend on the Upper Lighthouse Road heading north from the Lower Lighthouse.
- **Crash Deck 3**: Located on the next bend of the Upper Lighthouse Road heading north-west towards the Upper Lighthouse (disused).

Figure 1 below shows the locations of the proposed works.

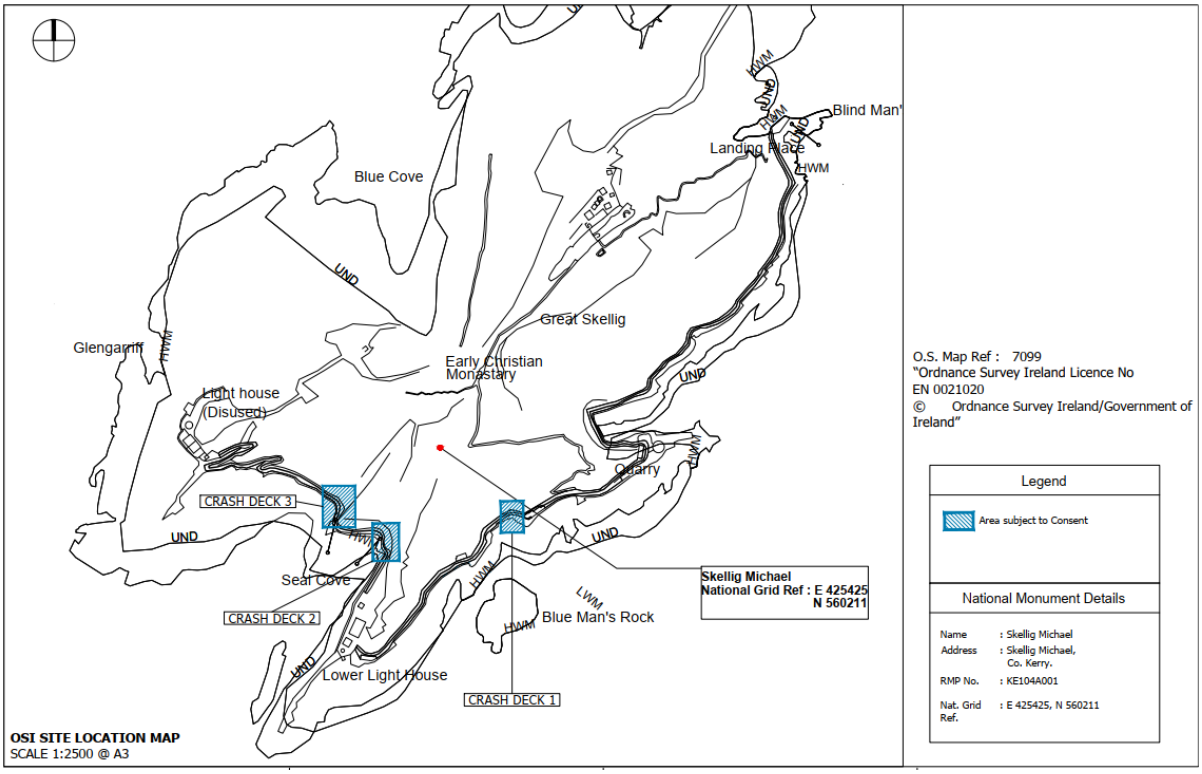

Figure 1. Locations of proposed works on Skellig Michael Island (Adapted from OPW Consent Application documents)

4.2.3 Purpose of the Project

Permanent crash decks are proposed at three critical locations on the Lighthouse Road considered vulnerable to future rock-falls. The purpose of the proposed works is to ensure the safety of OPW personnel and visitors to the island. While the temporary crash decks which are currently in place are capable of deflecting smaller debris, they are not intended to provide protection from more substantial rock-falls. The permanent crash decks will replace these temporary structures with the aim of deflecting debris and larger rock material which may fall onto the roadway at these locations in the future.

4.2.4 Brief Project Description

The proposed works will involve the dismantling and removal of the temporary crash decks currently in-situ and the installation of more substantial, permanent crash decks in their place. The permanent, robust crash decks will be of steel-frame construction and will be capable of deflecting larger rocks and other material.

4.2.5 Characteristics of the Project

The crash decks will be of stainless steel construction. The steel framework will be secured to the road with steel ground beams surrounded by concrete. The steel framework will be secured to the cliff-face behind and below each crash deck using cable stays secured to the rock with rock bolts. There will be a requirement for excavation of linear sections of the existing road surface to facilitate the steel ground beams of each crash deck. The height of the crash decks vary with an average height of approximately 2.4 m from ground-level and a maximum height of approximately 3 m at Crash Deck 3. The crash decks have been designed by Downes Associates consultant structural engineers.

Crash Deck 1 is located on the Lower Lighthouse Road near the existing OPW site huts. Dangerous rock falls occurred in this area in 2017 and 2020 (see **Plate 1** below). **Crash Deck 2** and **Crash Deck 3** are located in areas prone to rock falls on the Upper Lighthouse Road. Refer to **Figure 1** above for crash deck locations.

Plate 1. Displaced boulder on roadway following rock-fall near worker's accommodation huts in July 2020

A summary of the project characteristics in the context of appropriate assessment is provided in the table below. The proposal has been confirmed with the OPW.

Size, scale, area, land-take	The footprint of the works will comprise the following: Overall area of works for Crash Deck 1: 6.5 m^2 Overall area of works for Crash Deck 2: 32.95 m^2 Overall area of works for Crash Deck 3: 32.6 m^2 Total area of excavation of roadway for foundations: 65 m^2 Total approx. volume of excavations: 20 m^3 + 30 m^3 + 20 m^3 = 70 m^3 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 road. The works will not extend beyond this area. There will be no encroachment onto adjacent habitats, other than securing of cable stay rock bolts to the cliff-face below and to the rear of each section of crash deck.
Details of physical changes that will take place during the various stages of implementing the proposal	• Excavation of roadway by hand for foundation grillage steelwork • Erection of temporary scaffolding • Drilling for rock anchors and rock bolts • In-situ pouring of concrete for foundation grillage • Construction of crash deck steel framework including securing cable stays to cliff-face • Treatment of steelwork on-site post construction with primer and paint • Removal of scaffolding
Description of resource requirements for the construction/operation and decommissioning of the proposal (water resources, construction material, human presence etc)	**Construction Materials/Equipment** • Structural steel for crash deck framework (Duplex grade stainless steel) • Steel bolts for framework • Stainless steel rock bolts • Stainless steel rock anchors • Corrugated aluminium roof sheeting • Protective stainless steel woven mesh • Concrete (Approx. 10 m^3) • Primer and paint for steelwork • Temporary scaffolding • Water for concrete • No. of workers – max. 6 • Generator and fuel • Tools • Power barrow/quad bike for transporting steel sections
Description of timescale for the various activities that will take place as a result of implementation (including likely start and finish date)	Pending approval, it is anticipated that the proposed works will take eight weeks to complete and will be carried out in late summer 2021. All works will be dependent on weather/boat crossing conditions.
Description of wastes arising and other residues (including quantities) and	Construction phase wastes will include: • Domestic waste arising from workers which shall be taken off the

their disposal	island on a daily basis for the duration of the works and disposed of at a suitably licensed facility. • Workers shall utilise existing OPW staff toilet facilities currently available on the island. • 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. • 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. No operational phase wastes are envisaged.
Identification of wastes arising and other residues (including quantities) that may be of particular concern in the context of the Natura 2000 network	• Concrete, concrete washout • Paint/primer etc • Fuel/oil residue generator (minor quantity)
Description of any additional services required to implement the project or plan, their location and means of construction	Existing services and living accommodation are available on the island for workers for the duration of the works. Water shall be brought to the site for mixing concrete. Electricity shall be provided by means of a diesel powered generator.

4.2.6 Identification of Other Projects or Plans or Activities

4.2.6.1 Kerry County Development Plan (CDP) 2015-2021

The Kerry CDP 2015-2021 was reviewed with regard to Skellig Michael. The Plan identifies Skellig Michael as a UNESCO World Heritage Site of international importance. The Plan also makes reference to the requirement for protection of such sites and the potential significant economic and social benefits in promoting the value of such assets.

The Plan states:

> *"It is the intention of this Development Plan to actively support the protection, conservation and appropriate enhancement of the cultural heritage in Kerry to benefit residents and visitors alike and to target cultural tourism as a major economic driver in the County"*[1].

4.2.6.2 Tourism

The island is visited by significant numbers of tourists (approximately 18,000) on an annual basis. The open season typically runs from May to early October with exact opening and closing dates dependent on weather constraints and prevailing sea conditions. Fifteen boats are currently licensed to make a single return trip to the island each day during this period, when weather conditions are suitable for the sea crossing. Each boat has a maximum licensed carrying capacity of twelve people. All tourists are strictly daytime visitors, allowed to visit the island between the hours of 10:30 and

[1] http://atomik.kerrycoco.ie/ebooks/devplan/pdfs/Vol1/final_vol_1.pdf

15:00 seven days a week. Tourist access is restricted to the eastern half of the island, comprising the East Landing (boat landing area), Lower Lighthouse Road, Monastery and the series of stone steps linking them. There is no public access to the Upper Lighthouse Road.

4.2.6.3 On-going Remedial and Conservation Works to the Upper Lighthouse Road and Seawall

The OPW is currently undertaking a long-term conservation project on the Upper Lighthouse Road (also known as the Old Lighthouse Road) on Skellig Michael. This project has been undertaken on a phased basis over the last several years and will continue over the coming years during the island's annual open season, subject to the necessary consents.

Phase 1 of the project was granted consent and commenced in 2017. Phase 2 of the project was granted consent and commenced in 2018. Phase 3 of the project was granted consent and commenced in 2019. Screenings for appropriate assessment were undertaken for Phases 1 -3 of the project. Phase 1 and Phase 2 of the project are complete. Once the islands open season has commenced Phase 3 of the works will continue.

Ministerial Consent was recently granted by the DHLGH to the OPW in relation to Phase 4 of the on-going remedial works. The Phase 4 works will encompass the seawall which surrounds the Upper Lighthouse, the Upper Lighthouse ruins & gatepost and a portion of seawall adjacent to the Lower Lighthouse. These sections of the Upper Lighthouse compound seawall and Lower Lighthouse seawall have been subject to varying degrees of damage as a result of natural rock-fall and exposed conditions and as such the degree of remedial works will vary between these locations.

There is a possibility of overlap between on-going phased remedial works and works proposed within this Stage 1 screening report.

4.3 IDENTIFICATION OF NATURA 2000 SITES

4.3.1 Likely Zone of Impact Influence

As described above, the test for the screening for appropriate assessment is to assess, in view of best scientific knowledge, if the development, individually or in combination with other plans or projects is likely to have a significant effect on a Natura 2000 site. If there are any significant, potentially significant, or uncertain effects, it will be necessary to proceed to appropriate assessment and submit a NIS. National guidance recommends that a list is compiled of all Natura 2000 sites within what is described as a 'likely zone of impact of [a] plan or project' (DoEHLG , 2009, p.32) and which may, or ultimately may not , be impacted upon by the proposal.

The Natura 2000 sites within this 'likely zone of impact' and their qualifying features of conservation interest are identified in **Section 4.3.2** and **4.3.3** below, and the conservation objectives of the sites are described in accordance with the guidance. Following this, the potential impacts associated with the proposal will be identified before an assessment is made of the likely significance of these impacts. If, at the end of the screening process, it cannot be objectively concluded that no significant impacts are likely or, if the screening concludes that there is uncertainty about the significance of the impacts, it will be necessary to proceed to Stage 2 appropriate assessment.

4.3.2 Identification of Natura 2000 Sites

Adopting the precautionary principal in identifying potentially affected European sites, it has been decided to include all SACs and SPAs within 15km of the proposal site. **Table 1** below lists designated SACs and SPAs within 15km or the zone of influence of the proposal site including their proximity. A map showing these designated sites in relation to the proposal is given in **Figure 2**.

Table 1: Natura 2000 sites within the zone of potential impact influence of the proposal

No.	Designated Site	Site Code	Proximity of subject site to nearest point of designated site
1	**Skelligs SPA**	004007	The proposal site lies fully within the SPA boundary
2	**Puffin Island SPA**	004003	This designated site is located 10.1km north east of the proposal site
3	**Iveragh Peninsula SPA**	004154	This designated site is located 12.8km north east of the proposal site
4	**Valentia Harbour/Portmagee Channel SAC**	002262	This designated site is located 13.5km north east of the proposal site

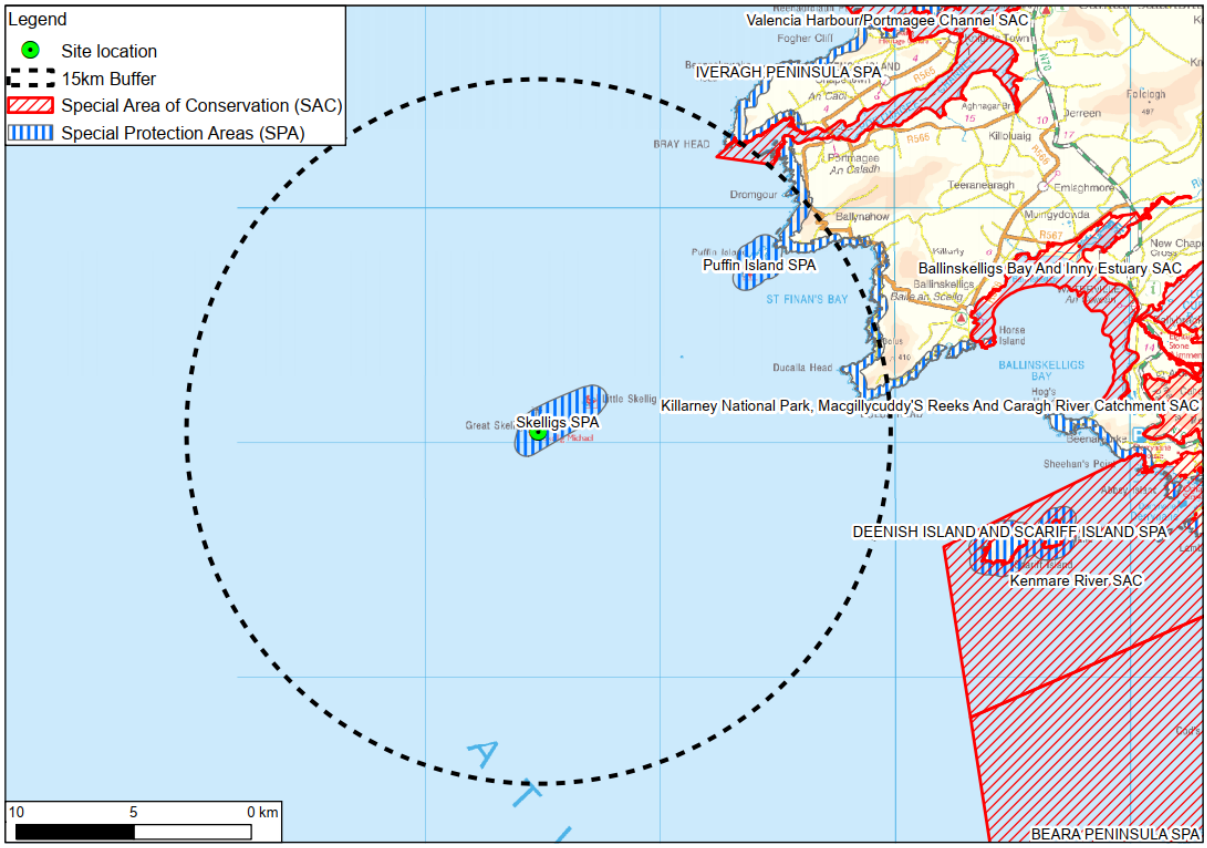

Figure 2. Natura 2000 sites within 15km or the zone of potential impact influence of the proposal

4.3.3 Characteristics of Natura 2000 Sites

The following table lists the qualifying features of conservation interest for the SAC and SPA sites that lie within the zone of potential impact influence of the proposal. Information pertaining to designated sites is from site synopses, conservation objectives and other information available on www.npws.ie.

Table 2: Natura 2000 sites with qualifying features of conservation interest

Designated Site	Qualifying features of conservation interest
Skelligs SPA (004007)	• Fulmar (*Fulmarus glacialis*) • Manx Shearwater (*Puffinus puffinus*) • Storm Petrel (*Hydrobates pelagicus*) • Gannet (*Morus bassanus*) • Kittiwake (*Rissa tridactyla*) • Guillemot (*Uria aalge*) • Puffin (*Fratercula arctica*)
Puffin Island SPA (004003)	• Fulmar (*Fulmarus glacialis*) • Manx Shearwater (*Puffinus puffinus*) • Storm Petrel (*Hydrobates pelagicus*) • Lesser Black-backed Gull (*Larus fuscus*) • Razorbill (*Alca torda*) • Puffin (*Fratercula arctica*)
Iveragh Peninsula SPA (004154)	• Fulmar (*Fulmarus glacialis*) • Peregrine (*Falco peregrinus*) • Kittiwake (*Rissa tridactyla*) • Guillemot (*Uria aalge*) • Chough (*Pyrrhocorax pyrrhocorax*)
Valentia Harbour / Portmagee Channel SAC (002262)	• Mudflats and sandflats not covered by seawater at low tide (1140) • Large shallow inlets and bays (1160) • Reefs (1170)

4.3.4 Conservation Objectives

According to the Habitats Directive, the *conservation status of a natural habitat* will be taken as 'favourable' within its bio-geographic range when:

- its natural range and areas it covers within that range are stable or increasing, and
- the specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future, and
- the conservation status of its typical species is favourable as defined below.

According to the Habitats Directive, the conservation status of a species means the sum of the influences acting on the species concerned that may affect the long-term distribution and abundance of its populations. The conservation status will be taken as 'favourable' within its bio-geographic range when:

- population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and
- the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and

- there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

The specific conservation objectives for each site are available on www.npws.ie. These have been accessed for the sites listed in the tables above on the 16/06/2021. Generic conservation objectives were available for the following sites:

- Skelligs SPA (004007), generic version 8.0, produced 23/03/2021
- Puffin Island SPA (004003), generic version 8.0, produced 23/03/2021
- Iveragh Peninsula SPA (004154), generic version 8.0, produced 23/03/2021

Site specific and more detailed conservation objectives were available for the following site:

- Valencia Harbour/Portmagee Channel SAC (002262), version 1.0, produced 31/10/2012

Management plans were not available for any sites. All conservation objectives together with other designated site information are available on http://www.npws.ie/protectedsites/.

4.4 IDENTIFICATION OF POTENTIAL IMPACTS

Potential likely ecological impacts arising from the project are identified in this section.

Description of elements of the project likely to give rise to potential ecological impacts.	• Works will be conducted entirely within a Natura 2000 site (Skelligs SPA) • Works are scheduled to take place during the breeding season for some SCI species • Works will be conducted within close proximity to known SCI breeding colonies and/or potential SCI breeding habitat.
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: ○ *Size and scale;* ○ *Land-take;* ○ *Distance from Natura 2000 Site or key features of the Site;* ○ *Resource requirements;* ○ *Emissions;* ○ *Excavation requirements;* ○ *Transportation requirements;* ○ *Duration of construction, operation etc.; and* ○ *Other.*	**Construction Phase** • 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. • Potential water quality impacts through use of concrete, paint, primer, fuel etc. and/or excavation works **Operational Phase** • Potential risk of collision of SCIs with cable stays securing steel framework.

4.5 ASSESSMENT OF SIGNIFICANCE OF POTENTIAL IMPACTS

This section considers the list of sites identified in **Section 4.3.2** above together with the potential ecological impacts identified in the previous section and determines whether the project is likely to have significant effects on a Natura 2000 site.

When assessing impact, Natura 2000 sites 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. excavation), a 'receptor' (e.g. a protected habitat/species and/or the habitats on which they depend), and an impact pathway between the source and the receptor (e.g. a waterbody which connects the proposal site to the protected species or habitats).

An evaluation based on these factors to determine which Natura 2000 sites are the plausible ecological receptors for potential impacts of the proposal was carried out. The evaluation had regard to the scope, scale, nature and size of the project, its location relative to the Natura 2000 sites listed in **Table 1** above and the degree of connectedness that exists between the project and each Natura 2000 site's potential ecological receptors.

Because Skellig Michael is an island in the north-east Atlantic Ocean and the following Natura 2000 sites, namely Puffin Island SPA, Valentia Harbour/Portmagee Channel SAC and the Iveragh Peninsula SPA, all lie at a remove of in excess of 10 km from the subject site, with the Atlantic Ocean

intervening, it is considered that no plausible impact pathway connects the habitats and species for which these sites are designated to the location of the proposed works through which significant impacts could occur. As a consequence, these Natura 2000 sites will not be considered further in this document.

This screening exercise will, therefore, only focus on the Skelligs SPA within which the proposal area is located.

The likelihood of significant effects to the Skelligs SPA from the project was determined based on a number of indicators including:

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

The likelihood of significant cumulative/in-combination effects is assessed in **Section 4.5.5** below.

4.5.1 Habitat Loss and/or Alteration

The Skelligs SPA is not designated for the protection of any habitat-types. The SPA is designated for the protection of several breeding seabird species. While some, such as fulmar (*Fulmarus glacialis*), kittiwake (*Rissa tridactyla*) and guillemot (*Uria aalge*), breed on cliff-faces and ledges throughout the island, other SCIs such as European storm petrel (*Hydrobates pelagicus)*, Manx shearwater (*Puffinus puffinus*) and puffin (*Fratercula arctica*) utilise underground burrows and natural/man-made crevices throughout the island for breeding. Storm petrel, in particular, utilise stone walls, steps and masonry structures located throughout the island for nesting.

The works will be confined to the footprint of the existing roadway (Lighthouse Road) and the adjoining vertical cliff-face to the rear (max. height of 3 m from the road surface) and below each of the three locations. As part of conservation works previously undertaken on the island, vegetation and soil has already been removed from the surface of the Upper Lighthouse Road at the location of proposed Crash Deck 2 and Crash Deck 3. The Lower Lighthouse Road, where proposed Crash Deck 1 is located, is completely devoid of vegetation and soil; therefore, suitable habitat for ground or burrow-nesting SCIs does not occur within the works footprint. With regard to the securing of the steel framework to adjoining cliff-faces with cable stays, the cliff-faces to the rear of each structure are vertical in nature with a lack of suitable nesting ledges for SCIs. The extreme close proximity of the areas of cliff-face in question to the existing roadway and proposed area of works, being immediately adjacent to and below the roadway, further reduces their suitability for nesting seabirds.

The habitats within the footprint of the proposed works do not comprise suitable breeding areas for any of the qualifying interests of the SPA. Therefore, significant habitat loss or alteration impacts are not likely as a result of the proposal.

4.5.2 Disturbance and/or Displacement of Species

Apart from gannet (*Morus bassanus*) which does not breed or typically occur on Skellig Michael, all of the other SCI species for the site, comprising storm petrel, Manx shearwater, puffin, guillemot, fulmar and kittiwake are found on the island during the breeding season.

The breeding phenology for each SCI found on the island varies. Some species such as guillemot typically arrive relatively early in the year with young fledging mid-summer, while others, such as storm petrel and fulmar commence fledging much later in the season (typically August/September and even later), departing relatively late in the season for their respective wintering grounds.

Breeding seabirds can be found throughout the island during the season with some species favouring the islands cliff-faces and rocky ledges for nesting while others use man-made stone structures or are ground-nesting, as outlined previously. Storm petrels utilise stone walls for nesting throughout the island and could potentially occur within the seawall immediately adjacent to the works areas. The cliff-faces and rocky ledges in Seal Cove are used by breeding sub-colonies of kittiwake and guillemot. Fulmars also use these cliffs and ledges for nesting. Puffin and Manx shearwater have the potential to use natural crevices and burrows in suitably vegetated areas on the surrounding slopes for nesting.

Construction activity, including excavation works, and general use of machinery and equipment, will result in fugitive noise emissions and increased human activity in close proximity to some SCI breeding areas/potential breeding habitat, and therefore could result in potential disturbance/displacement impacts to SCIs.

In summary, the construction phase of the project will overlap with the breeding season for some SCIs. The proposal will result in increased human activity in close proximity to potential breeding habitat and several known breeding seabird sub-colonies, as outlined above. Due to the location of the works and the temporal overlap between the project and the breeding season for SCIs, significant direct and indirect disturbance and displacement impacts on qualifying interests for the SPA cannot be ruled out at this stage, and thus further assessment is required.

4.5.3 Water Quality

As part of the proposal, excavation works will be required at multiple locations on the existing roadway to facilitate foundations for the grillage steelwork of each crash deck. There will be a requirement for storage of cement and mixing and pouring of concrete on the island. The works will also require the use of paint and primer which will be used to treat the steelwork of each crash deck once they have been installed.

The use of concrete, fuel etc and to a lesser extent excavation works pose a risk to marine water quality in the form of surface run-off from works areas. While there are no natural watercourses or waterbodies on the island, 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. This existing drainage network provides a direct pathway through which water quality impacts could arise. The naturally steep typography of the island increases the risk posed to marine water quality in the event of uncontrolled run-off from works areas.

In this scenario, impacts to marine water quality, although likely to be relatively localised in extent, could potentially result in indirect effects to qualifying interests for the SPA via a reduction in the

quality of seabird foraging habitat in the surrounding area and/or adverse impacts on SCI prey species.

Based on the precautionary principal, significant water quality impacts within the Skelligs SPA cannot be ruled out at this stage, and thus further assessment is required.

4.5.4 Habitat or Species Fragmentation

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 the increased isolation of populations which can detrimentally impact on their resilience or robustness thereby reducing overall species diversity and altering species abundance.

The preceding sections have concluded that there is potential for significant species disturbance or displacement and/or water quality impacts within the Skelligs SPA, or that significant impacts cannot be ruled out at this stage. Therefore, there is potential for habitat or species fragmentation impacts with regard to the Skelligs SPA, and thus further assessment is required.

4.5.5 Cumulative/In-combination Impacts

With regard to on-going tourist activity on the island, the works are scheduled to take place in late summer which overlaps with the island's typical open season for visitors. However, the public do not have access to any of the proposed areas of work. All work will take place beyond the limits of public access on the Lighthouse Road. Therefore, it is considered that there is no potential for significant cumulative or in-combination impacts as a result of interaction between tourism and the proposed works.

There is a possibility of spatial and temporal overlap between consented on-going phased remedial works to the Upper Lighthouse Road and works proposed within this Stage 1 screening report. Therefore, there is potential for significant cumulative or in-combination impacts within the Skelligs SPA as a result of the proposal, or significant cumulative or in-combination impacts cannot be ruled out at this stage, and thus further assessment is required.

4.6 CONCLUSION OF SCREENING STAGE

In conclusion, to determine the potential impacts, if any, of the project on nearby Natura 2000 sites, a screening process for appropriate assessment was undertaken. There are four Natura 2000 sites within 15 km or the zone of potential impact influence of the proposal.

It has been objectively concluded during the screening process that significant impacts arising from the proposal to construct three permanent crash decks on Skellig Michael Island can be excluded for three of the sites. These sites are as follows:

- Valencia Harbour/Portmagee Channel SAC (002262)
- Iveragh Peninsula SPA (004154)
- Puffin Island SPA (004003)

However, based on the precautionary principal, it cannot be objectively concluded that significant impacts as a result of the proposal can be ruled out at this stage for the following Natura 2000 site:

- Skelligs SPA (004007)

Further assessment is required to determine whether the project is likely to adversely affect the integrity of this Natura 2000 site. Hence, the recommendation of the screening process is to proceed to Stage 2 Natura Impact Statement for this site.

REFERENCES

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Appendix 1

Stages of Appropriate Assessment

Stage 1 - Screening

This is the first stage of the Appropriate Assessment process and that undertaken to determine the likelihood of significant impacts as a result of a proposed project or plan. It determines need for a full Appropriate Assessment.

If it can be concluded that no significant impacts to Natura 2000 sites are likely then the assessment can stop here. If not, it must proceed to Stage 2 for further more detailed assessment.

Stage 2 - Natura Impact Statement (NIS)

The second stage of the Appropriate Assessment process assesses the impact of the proposal (either alone or in combination with other projects or plans) on the integrity of the Natura 2000 site with respect to the conservation objectives of the site and its ecological structure and function. This is a much more detailed assessment that Stage 1. A Natura Impact Statement containing a professional scientific examination of the proposal is required and includes any mitigation measure to avoid, reduce or offset negative impacts.

If the outcome of Stage 2 is negative i.e. adverse impacts to the sites cannot be scientifically ruled out, despite mitigation, the plan or project should proceed to Stage 3 or be abandoned.

Stage 3 - Assessment of alternative solutions

A detailed assessment must be undertaken to determine whether alternative ways of achieving the objective of the project/plan exists.

Where no alternatives exist the project/plan must proceed to Stage 4.

Stage 4 - Assessment where no alternative solutions exist and where adverse impacts remain

The final stage is the main derogation process examining whether there are imperative reasons of overriding public interest (IROPI) for allowing a plan or project to adversely affect a Natura 2000 site where no less damaging solution exists.

Appendix 2

Site Synopses

SITE SYNOPSIS

SITE NAME: SKELLIGS SPA

SITE CODE: 004007

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. 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 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 (4,000-6,000 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 the long established colony of Gannets, with 26,436 pairs in the last full census in 1994. 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 colonies of Puffins in the country, with 4,000 individuals estimated in 1999. Other seabird species which occur on the islands in nationally important numbers are as follows (counts made between 1999 and 2002): Fulmar (806 pairs), Manx Shearwater (2,370 pairs), Kittiwake (944 pairs), Guillemot (2,551 individuals) and Razorbill (454 individuals).

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, BirdWatch Ireland, holds a long-term lease on Little Skellig. There are no known direct threats to the breeding seabird populations, though high numbers of day trippers to Great Skellig could cause disturbance to the fragile soil cover and lead to soil erosion, particularly if visitors do not keep to the stone paths. Little Skellig is largely inaccessible.

In addition to the bird interests, Great Skellig is well known for its early Christian monastic settlement. An automated lighthouse also exists on Great Skellig.

This site is one of the top five seabird sites in the country and is of international importance on account of the Storm Petrel and Gannet populations. Storm Petrel is listed on Annex I of the E.U. Birds Directive, as is Chough and Peregrine.

6.10.2004

SITE SYNOPSIS

Site Name: Valencia Harbour/Portmagee Channel SAC

Site Code: 002262

Valencia Harbour and Portmagee Channel, at the tip of the Iveragh peninsula in Co. Kerry, separate Valencia Island from the mainland. The channel, which is approximately 1 km wide, and Valencia Harbour and Doulus Bay to the east of the island, contain important examples of three habitats in particular reefs, large shallow inlets and tidal mudflats.

The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (* = priority; numbers in brackets are Natura 2000 codes):

[1140] Tidal Mudflats and Sandflats
[1160] Large Shallow Inlets and Bays
[1170] Reefs

The reefs at this site range from high water to 34 m in depth. They support an excellent range of communities from those that are typical of areas very exposed to wave action to those typical of areas sheltered from wave action but with some tidal stream present. A number of uncommon shallow subtidal communities occur here. The area also has an excellent range of sediment communities present including beds of free living red calcareous algae, generally called maerl beds (also known as 'coral'), with the uncommon anemone *Halcampa chrysanthellum*. Areas of soft mud or muddy sand are characterised by the sea pen *Virgularia mirabilis* and a range of burrowing anemones, including the very rare species *Edwardsia delapiae,* which has not been recorded since it was originally found and described from this area in 1928. Also present is *Scolanthus callimorphus*, only known from Kilkieran Bay, Co. Galway and one site in England. The phoronid *Phoronis psammophila* occurs in this community and has not been recorded elsewhere in Ireland or Britain.

The littoral reefs of Valencia Island are composed of areas that are exposed to, or very sheltered from, wave action. At exposed sites there is a typical zonation for this habitat: an upper shore with a narrow band of the brown alga *Pelvetia canaliculata*; a mid shore covered by barnacles, limpets and mussels, with rock pools containing the Purple Sea Urchin *Paracentrotus lividus* and coralline algal crusts; and a low shore dominated by mussels and barnacles with *Porphyra* sp., followed by mixed kelp species (*Laminaria digitata*, *Laminaria saccharina* and *Saccorhiza polyschides*). On mixed substrate in sheltered areas there is a typical zonation of bands of *Ascophyllum nodosum* and *Fucus vesiculosus* in the mid shore, with *Fucus serratus* in the low shore. The subtidal fringe has mixed kelp species with an understorey of red algae. On the north-east shore of Portmagee Channel, the very low shore has Eelgrass (*Zostera*

marina) beds and a variety of bivalve species. Burrowing anemones, in particular *Cereus pedunculatus,* occur in gravel and mud in very sheltered areas. Boulders in the sublittoral fringe have a kelp community on top, and on the undersides a community of bryozoans and sea squirts (*Polyclinum aurantium* and *Morchellium argus*).

The shallow water reefs in areas very exposed to wave action have kelp park communities of *Laminaria hyperborea,* with dense foliose algae, the jewel anemone *Corynactis viridis* and the sea squirt *Pycnoclavella aurilucens*. Reefs moderately exposed to wave action with moderate current display good examples of *L. hyperborea* forest with a cushion fauna of sponges and ascidians which is considered uncommon. Another unusual community characterised by the keel worm *Pomatoceros triqueter* and occasional kelp occurs on areas of scoured cobbles. Vertical rock supports a range of hydroids, red algae, the sea urchin *Echinus esculentus,* with only occasional kelp plants. In sheltered areas either a species rich community of mixed kelps with sand scour tolerant fauna may be present, or a forest of *L. hyperborea* and *L. saccharina* may occur. This latter community is considered uncommon. Isolated silty bedrock outcrops support sponges, hydroids, anemones and occasional red and brown algae.

In deeper water at the western entrance to Portmagee Channel the reefs are very exposed or moderately exposed to wave action. Very steep bedrock is characterised by sponges, the jewel anemone *Corynactis viridis* and the cup coral *Caryophyllia smithi*. More gently sloping and upward facing circalittoral bedrock is characterised by pink coralline crusts, encrusting bryozoans, *Caryophyllia smithi*, *Echinus esculentus* and the sponges *Haliclona viscosa* and *Mycale rotalis*. These communities are typical of these habitats.

The very sheltered beach on the shores of the Valencia River estuary has a gradually sloping shingle beach, with a narrow band of *Fucus vesiculosus*, *Ascophyllum nodosum* and *Enteromorpha* sp., amphipods (e.g. *Echinogammarus marina*) and winkles (e.g. *Littorina littorea*) are frequent under the algae. Seaward of the shingle in muddy sand the polychaete *Scoloplos armiger* and the lug-worm *Arenicola marina* are common. The tide-swept low shore is characterised by the polychaete *Lanice conchilega*. The bivalve *Scrobicularia plana* is common in the upper mid shore, while *Angulus tenuis* is more prevalent in the mid and low shore.

The site has a good range of sediment communities which vary from gravel and pebbles to maerl, sand and mud. The moderately exposed sediments consist of areas of medium sand with the burrowing sea urchin *Spatangus purpureus* and the bivalve *Dosinia exoleta*. Areas with mixed sediments with different combinations of pebbles, gravel and mud are generally characterised by a variety of hydroids, anemones, bivalves and red algae. Soft mud or muddy sand is characterised by burrowing anemones, in particular *Sagartiogeton undata* and *Edwardsia claparedii*, the sea pen *Virgularia mirabilis,* the molluscs *Philine aperta* and *Haminoae navicula*, and bivalves. *H. navicula* is common in these communities but rare elsewhere in Ireland. A number of other uncommon marine species are found within the site including the rare pharonid *Phoronis psammophila* which occurs at a number of locations within the site, and two rare burrowing anemones *Edwardsia delapiae* and *Scolathus callimorphus*.

This site is of particular interest and importance because it contains good examples of three habitats listed on Annex I of the E.U. Habitats Directive – tidal mudflats and sandflats, large shallow inlets and bays, and reefs.

SITE SYNOPSIS

SITE NAME: IVERAGH PENINSULA SPA

SITE CODE: 004154

The Iveragh Peninsula SPA is a large site situated on the west coast of Co. Kerry. The site encompasses the high coast and sea cliff sections of the peninsula from just west of Rossbehy in the north, around to the end of the peninsula at Valencia Island and Bolus Head, and as far east as Lamb's Head in the south. The site includes the sea cliffs, the land adjacent to the cliff edge (inland for 300 m) and also areas of sand dunes at Derrynane and Beginish. The high water mark forms the seaward boundary except at Doulus Head/Killelan Mountain where the adjacent sea area to a distance of 500 m from the cliff base is included to provide areas for foraging and socialising activities for breeding seabirds. The site is underlain by Devonian sandstones, siltstones and mudstones. A small area of igneous rocks (dolerite and gabbro) occurs at Beginish and on the adjacent shore.

The site is a Special Protection Area (SPA) under the E.U. Birds Directive, of special conservation interest for the following species: Chough, Peregrine, Guillemot, Fulmar, and Kittiwake.

Vegetated sea cliffs dominate the site; these occur along the length of the site and support a good variety of plant species typical of the habitat, including Thrift (*Armeria maritima*), Sea Campion (*Silene vulgaris* subsp*. maritima*), Sea Spleenwort (*Asplenium marinum*) and Rock Sea-spurry (*Spergularia rupicola*). The cliff-tops support heath or coastal grassland. Apart from the sea cliffs themselves, the site includes areas of dry heath, wet heath, upland acid grassland, dense Bracken (*Pteridium aquilinum*), semi-improved and improved pasture grassland, dune grassland, streams, bedrock shores and islets.

The site supports an important population of breeding Chough, a Red Data Book species that is listed on Annex I of the E.U. Birds Directive; 109 breeding pairs were recorded from the site in the 1992 survey and 88 in the 2002/03 survey. The birds are found around the coast from Lamb's head in the south-west to Rossbehy in the north. A small number of pairs are found inland, mainly around the Macgillycuddy's Reeks.

The topography of the Iveragh Peninsula, with its mosaic of grazed semi-improved and improved pastures, extensive inland upland areas of coastal heath and grassland, and sand dune systems in close proximity to breeding cliffs, favours Chough. Particularly high densities of Chough occur at Valencia Island where livestock grazing presents the species with widespread feeding opportunities. Valencia Island held the largest autumn flock, (42 birds), observed in the period 2002 to 2004. Choughs also benefit from the close proximity of the dune systems at Rossbehy in the north and at Inch, where flocks of up to 81 birds have been observed in the autumn. The smaller area of dune habitat at Derrynane is also used, with flocks of up to 33 birds present in October 2003. Communal roosts exist on Lamb's Head near Derrynane and at the western tip of Valencia Island. Pairs and small flocks of Chough can be found around the coast and in the mountainous uplands of the Iveragh Peninsula throughout the year. Studies have shown that Chough forage mainly within 300 m of the cliff tops used for breeding and these areas have been included in the site.

Landuse is predominantly extensive grazing of sheep, and to a lesser degree, cattle. This grazing regime, which results in a tight vegetation sward, is beneficial to Chough. The habitats present

are quite robust and there are few noticeable activities negatively impacting on the Chough population. However, the reduction in cattle numbers and increase in sheep numbers in the recent past, is less beneficial to Chough, as sheep grazing results in a more uniform vegetation sward. One other potential threat is the residue left in livestock dung due to the application of broad-spectrum anti-parasitic drugs.

The site supports an important Peregrine population (6 pairs in 2002); this species is listed on Annex I of the E.U. Birds Directive. The site also holds nationally important populations of Guillemot (2,860 pairs in 1999-2000), Fulmar (766 pairs in 1999-2000), Kittiwake (1,150 pairs in 2000), Great Black-backed Gull (63 pairs in 1999-2000) and Black Guillemot (118 individuals in 1999), as well as smaller populations of other breeding seabirds: Razorbill (90 pairs in 1999-2000), Herring Gull (30 pairs in 1999-2000), Cormorant (33 pairs in 1999-2000) and Shag (11 pairs in 1999-2000).

The Iveragh Peninsula SPA is the second most important site in the country for Chough and is of high importance for Peregrine. It also supports a range of breeding seabirds, including populations of Guillemot, Fulmar, Kittiwake, Great Black-backed Gull and Black Guillemot of national importance. The presence of Chough and Peregrine, both species that are listed on Annex I of the E.U. Birds Directive, is of particular significance.

13.11.2006

SITE SYNOPSIS

SITE NAME: PUFFIN ISLAND SPA

SITE CODE: 004003

Puffin Island lies approximately 0.5 km off the northern side of St Finan's bay in south-west Co. Kerry. It is a long, narrow island of Old Red Sandstone. The island is almost divided into two halves – the southern half is a long narrow, rocky ridge, rising to 130 m, while the northern half broadens into a grassy plateau though has a high point of 159 m. The island is surrounded by mostly steep cliffs and slopes. The vegetation of the main part of the island is a typical maritime grassy sward, though nine different plant communities have been distinguished, including a small area of Ling Heather (*Calluna vulgaris*) heath. A Thrift (*Armeria maritima*) community dominates the slopes. In the past Puffin Island was grazed quite heavily by sheep, and today rabbits are common.

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, Lesser Black-backed Gull, Razorbill and Puffin. The site is also of special conservation interest for holding an assemblage of over 20,000 breeding seabirds.

Puffin Island is one of the most important seabird sites in Ireland. In the recent Seabird 2000 survey, it was rated as of international importance for its breeding populations of Storm Petrel (5,177 pairs), Manx Shearwater (6,329 pairs) and Puffin (5,125 individuals). The colony of Puffins was the largest recorded in Ireland during the survey, while that of Manx Shearwater is the second largest colony after the Blaskets. The island also supports nationally important populations of Fulmar (447 pairs in 2000), Lesser Black-backed Gull (139 pairs in 2000), Great Black-backed Gull (72 pairs in 2000) and Razorbill (800 pairs in 1982 - incomplete survey in 2000). Other seabirds which breed are Shag (5+ pairs in 2000), Kittiwake (250 pairs in 1982), and Guillemot (250 pairs in 1982).

A further bird species of conservation importance which breeds on Puffin Island is Chough, with up to 3 pairs recorded in 1992 and at least one pair in 2000. During winter the resident population may be joined by other birds that breed on the mainland. The presence of Chough and Storm Petrel is of particular note as these species are listed on Annex I of the E.U. Birds Directive.

Puffin Island is owned by BirdWatch Ireland and is managed for conservation. The island is also a Statutory Nature Reserve. Unauthorised grazing, which has occurred in the past, is the main threat to the island as this could lead to erosion of the fragile soil cover.

8.9.2006

Appendix 3

OPW Ministerial Consent Application Documents for 3 No. Permanent Crash Decks on Skellig Michael Island